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A Qualitative Inquiry into the Contextualized Parental Mediation Practices of Young Children's Digital Media Use at Home

Bieke Zaman , **Marije Nouwen**, **Jeroen Vanattenhoven**,
Evelien de Ferrerre, and **Jan Van Looy**

Technologies are increasingly adopted and used by young children at home. Parents play an important role in shaping their media use, keeping certain possibilities open for children to play, learn, and socialize while limiting others. Nevertheless, the literature on parental mediation of young children's media use is scant. In this article, we describe a qualitative, mixed-method study involving 24 parents and 36 children aged 3 to 9, and focus on the contextual factors that shape (transitions between) parental mediation practices. The results point to the emergence of new manifestations of parental mediation and provide evidence of their dynamic, often paradoxical nature. In particular, the insights on distant mediation, various buddy styles, and participatory learning, as well as the value of a wholeness approach for understanding children's conditions for media engagement, suggest new prospects for parental mediation literature.

The mediation of children's media use has radically changed since households have started to appropriate digital technologies in everyday life. Parents are increasingly dealing with digital media they did not grow up with, and

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challenged to seek a balance between minimizing children's exposure to risks while equally facilitating digital opportunities. Notwithstanding the increased adoption and use of technologies by young children (Chaudron, 2015; Plowman & McPake, 2013), the available literature on parental mediation (PM) of young children's digital media use is relatively scarce. Moreover, there is a dearth of research that gives full account of the contextual factors that determine PM practices in the family home.

Therefore, this article contributes to the study of PM with a qualitative inquiry into the contextual factors that shape PM practices of young children's digital media use. Based on the findings from this exploratory, mixed-method study involving 24 Belgian families with children between 3 and 9 years old, we suggest new manifestations of PM strategies. Also, we emphasize their dynamic, and often paradoxical nature.

By providing in-depth insights into the complexities of PM practices, we complement the findings from previous work, which are mainly quantitative in nature (Clark, 2011a, 2011b; Plowman, 2014; Ólafsson, Livingstone, & Haddon, 2014). Although important precursors of PM have already been extensively reported on (see, e.g., Connell, Lauricella, & Wartella, 2015; Gentile, Nathanson, Rasmussen, Reimer, & Walsh, 2012; Mendoza, 2009), it is still unclear how and why these precursors result in particular PM manifestations. Accordingly, the importance of accounting for the influence of the home context in shaping children's experiences with technologies is increasingly put forward (Nathanson, 2015; Plowman & McPake, 2013).

Furthermore, previous work on PM has primarily focused on television use (Mendoza, 2009; Valkenburg, Krcmar, Peeters, & Marseille, 1999) or on children aged 12 and older (Holloway, Green, & Livingstone, 2013; Nikken & Jansz, 2014; Ólafsson et al., 2014). Although some recent studies have started to account for the mediation of children's media use beyond television, such as video gaming (Nikken & Jansz, 2006, 2014; Nikken, Jansz, & Schouwstra, 2007; Shin & Huh, 2011) or Internet usage (Eastin et al., 2006; Lee, 2013; Livingstone & Helsper, 2008), the focus has remained limited to one particular digital medium (Livingstone & Helsper, 2008; Shin & Huh, 2011). Nonetheless, as an array of devices facilitates similar digital activities (Jenkins, 2004), it is increasingly meaningful to study PM with regard to various media devices and platforms, as well as account for the synergies of media usage patterns (Rodino-Colocino, 2007). Moreover, given the increased diversity of digital devices at home and their interactive, immediate, social, and ubiquitous characteristics, media scholars should investigate if, how, and why PM practices evolve along with the newest digital possibilities.

Parental Mediation Literature

For more than three decades, there has been research on PM of children's television use (Warren, 2001). These studies have emerged from the tradition of

media effects research (Clark, 2011b), concerned with “any strategy parents use to control, supervise, or interpret content” (Warren, 2001, p. 212) to mitigate the negative effects on children’s physical, psychological, and emotional health (Mendoza, 2009). Overall, previous research has repeatedly put forward three strategies for the mediation of children’s television viewing, and more recently also regarding Internet use and video gaming. These strategies are restrictive mediation, active mediation, and co-use. Studies from the media literature have mainly investigated PM by focusing on one particular medium, whereas the parenting literature has approached this topic mainly with a general take on media (Warren, 2001). The parenting literature, too, has pointed to restrictive and active mediation strategies, but categorized these as two manifestations of proactive monitoring, termed cocooning and prearming, respectively. Co-use strategies were not referred to, but instead, the mediation strategy of deference has been introduced as a third manifestation of proactive monitoring (Padilla-Walker, Coyne, Fraser, Dyer, & Yorgason, 2012). Most recently, two new categories have been introduced in the pivotal article of Nikken and Jansz (2014), the first study that has dealt with PM of digital media use in families with young children. In what follows, we further describe the similarities and differences in PM for various media and with respect to young children, focusing on the age spectrum of 3 to 9, versus older children, mainly hitting upon ages of 13 and older. We will, however, limit ourselves to studies that have included Western populations and advanced countries in order to sketch a comparable interpretative framework for our study.

First, restrictive mediation has been characterized by the rules enforced by parents to limit and control children’s media usage. The categories of restrictions are similar for children along the age spectrum, stipulating the amount of time (“how long?”), content (“what?”), and moment (“when?”) (Gentile et al., 2012; Nikken & Jansz, 2014; Warren, 2001). In research on elementary school children’s television viewing, restrictive mediation also manifested as a way to reward or punish (Warren, 2001). Research on the mediation of video gaming of children aged 8 to 18 has shown that restrictive mediation is mainly applied to avoid negative effects (Nikken & Jansz, 2006). In general, restrictive mediation is likely to be applied towards older children’s Internet use (Nikken & Jansz, 2014) and among parents who are concerned about the negative effects of video games (Nikken & Jansz, 2006).

Second, active mediation refers to instructive or evaluative conversations in order to explain, discuss, and/or share critical comments—for instance, by purposefully explaining media content in words children can understand (Gentile et al., 2012; Warren, 2001). The instructive approach aims at an educational outcome, such as teaching children technical aspects, whereas the evaluative approach aims at a normative outcome, such as expressing (dis)approval. In general, active mediation is most likely to occur in families with older children, primarily to protect them against the risks of social networking sites (Sonck, Nikken, & de Haan, 2012) and video gaming (Nikken & Jansz, 2006). In families with young children, it is more

likely to occur among parents with positive beliefs towards their children's Internet use than among parents with negative beliefs (Nikken & Jansz, 2014).

Finally, co-use as a mediation style has often been termed "co-viewing" in research on the mediation of television viewing or "co-playing" for video gaming. It entails shared media activities, often driven by a common interest (Nikken & Jansz, 2006; Valkenburg et al., 1999) and sometimes resulting in content discussions (Gentile et al., 2012). Mendoza (2009) has shown that parents who apply co-use without discussion for television viewing are likely to have a positive attitude towards the content. Nikken & Jansz' (2014) results have also shown that positive beliefs about the effects of young children's Internet use are likely to go hand-in-hand with co-use mediation styles.

Most recently, Nikken and Jansz (2014) introduced two additional strategies for the mediation of Internet use in families with young children aged 2 to 12, namely technical safety guidance and supervision. Technical safety guidance incorporates technology-supported safety measures such as anti-virus programs or spam filters, as well as applications that are purposefully designed to protect children's safety, like black-/whitelist filters. This strategy is mostly exerted by computer literate parents.

The second additional strategy is supervision "whereby the child is allowed to go online alone but with the reassurance that he or she is under direct supervision of a nearby parent" (Nikken & Jansz, 2014, p. 259). It is often combined with house-keeping activities, and the child is only interrupted or assisted when necessary. Supervision is more common in families with children younger than 12, and especially in families with fewer computers, when the computer is used in the living room and negative effects of children's Internet usage are expected (Nikken & Jansz, 2014). To some extent, supervision shares characteristics with the deference strategy as reported in the parenting literature. Both imply monitoring behavior where parents do not intervene as long as they don't observe negative effects. However, deference has only been described for parents with adolescents who are granted autonomy and trust without these parents being overindulgent (Padilla-Walker et al., 2012).

In the current study, we focus on parental efforts toward diverse uses of digital media by young children and adhere to a broad categorization of mediation, including strategies used to mediate and prevent negative media effects. We equally foreground strategies parents employ to incite positive experiences, and are responsive to Clark's (2011b) call to empirically investigate the emergence of a potential new category, that is participatory learning. Our literature review has nonetheless shown that insights on mediation practices in families with young children are far from complete and would benefit from in-depth analyses revealing their contextual factors. Hence, our research questions (RQs) are:

RQ₁: Which strategies do parents apply in the home context to mediate young children's digital media use and what are the characteristics?

RQ₂: What are the contextual factors influencing parental mediation practices?

Method

Participants

A total of 24 Flemish families living in Belgium and with children between 3 and 9 years old participated in the study. Families were recruited based on variability in residency, income, and family composition. The incentive for each participating family was a voucher worth 50 Euros. A total of 22 mothers and 2 fathers ($M_{age} = 36$, $SD_{age} = 5.16$) agreed to participate allowing us to include data on 49 children of which 36 were between 3 and 9 years old. Details on the participating families were gathered via a recruitment questionnaire and diary; for an overview we refer to Appendix 1. In the results section, we will make reference to a particular family with an abbreviation that comprises information on child(ren)'s gender and age(s), respectively. To illustrate, the reference for the first family listed in Appendix 1 with two children aged 7 and 10, is Family_A (girl7, girl10).

Procedure

Data collection, including a pilot test, took place from May to July 2013. Participating families were visited twice. The first visit began with a description of the study's goals, reassurance about confidentiality, and the signing of the informed consent forms. Participants were trained in using the diary by means of a discussion of two pages containing relevant example activities and instructed to fill out the blank diary pages for 10 days. Figure 1 shows the introductory page with space to provide information on the family composition as well as the number and type of devices owned. The main diary template spanned two pages (see Figure 2), requesting information on time and duration (start and end), location, title/name, type of media-related activity, device, person(s) involved (including the role of the parent), and additional remarks. Finally, if applicable, parents could write down general notes on the diary's last page.

The second visit consisted of an interview with the parent, as well as a simulation wherein we invited the child(ren) to demonstrate the use of a digital medium of choice and the parent(s) to mediate their child(ren)'s media usage and end the activity. Both were instructed to act as they would normally. In probing for more explanations during the interviews, we were not only led by the *a priori* defined interview guide but also by the events from the diary and simulation. The second home visit lasted between 45 and 75 minutes.

Data Analysis

The interviews and verbal accounts of the simulation were audio recorded, transcribed, and proofread before the directed content analysis in NVivo 10. Data from the interviews, diaries, and simulations were triangulated in order to account for

Figure 1
Example Diary Introductory Page.

UW GEZIN

Voordat we van start gaan eerst een paar vragen over uw gezin.

1. Uit welke personen bestaat uw gezin?
Onder gezin verstaan we in deze studie alle personen die bij u in huis wonen (gevolgde minstens 1 dag per week of op reguliere basis).

Naam = vol (vader, zoon, stiefmoeder...)	Leeftijd	Geslacht	Opleiding

2. Vul bij de ouders ook het hoogste behaalde diploma in (gebruik de onderstaande cijfers):

- 1 Lager onderwijs
- 2 Middelbaar onderwijs
- 3 Hoger onderwijs van het korte type: professionele bachelor
- 4 Hoger onderwijs van het lange type
- 5 Academische master, universiteit

2. Welke van de volgende apparaten heeft u thuis?
Geef bij elk apparaat dat u in huis heeft het aantal aan. Het kan bijvoorbeeld zijn dat u 2 laptops heeft. Zet dan een "2" bij laptop.

Computer

Desktop PC ☐ Laptop ☐ Andere:

Game Console

Playstation 2 ☐ Playstation 3 ☐ Xbox ☐ Xbox 360 ☐

Wii ☐ Wii U ☐ Andere:

Smartphone / Game Console

PSP ☐ PS Vita ☐ Nintendo DS ☐ Andere:

Tablet

iPad / Nxt ☐ Android ☐ Windows ☐ Andere:

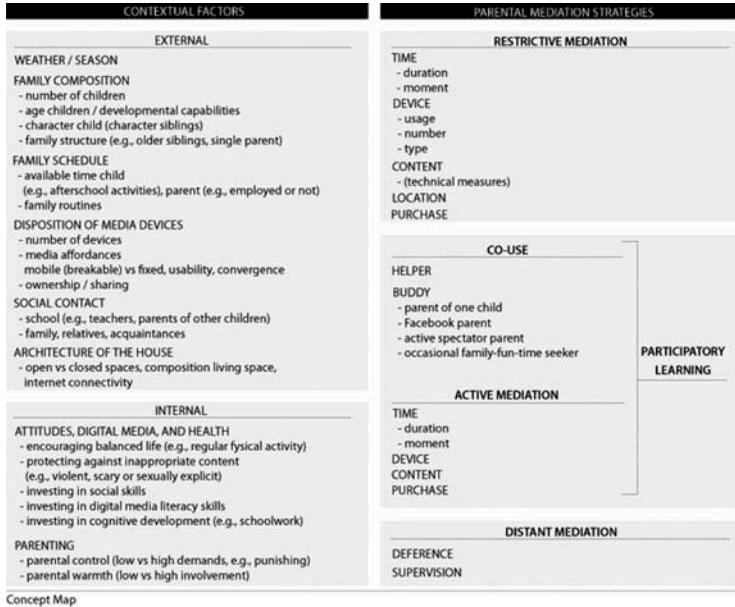
Smartphone

iPhone / Nxt ☐ Android ☐ Windows Phone ☐ Andere:

Figure 2
Example Diary: Main Template for Daily Entries.

Voorbeelddag: zaterdag 2 mei						
Begin	Einde	Plaats	Titel/naam	Type	Apparaat	
10:30	11:00	Living	Marin Kort	game	Nintendo DS	
			Plants vs. Zombies	game	iPad	
12:30	12:35	Tuin	Online spelletjes	game	Laptop	
14:30	17:00	Slaapkamer	Julia's room	game	Vide PC	
17:40	17:55	Achtertuin	Lange Rietj Pulser	game	Nintendo DS	
19:30	19:35	Slaapkamer	Saman en Gert	video	Vide PC	
19:35	20:00	Slaapkamer	Relax met oma	Comics	iPad	
Wt						
			Order	Opmerking		
Middag			Komen in de keuken, eten al en ben niet blijken in de living			
Middag			Zit bij middag en leest de krant	Oversteltende korte spelletjes op mijn ipad		
Middag			In de living - ik ben niet meer vreed de living			
Middag			Archer staat van eten			
Middag van Yvonne (jonger broertje)			Kijkt mee	Video's op mijn ipad		
Middag			Relax mee	Spreken met oma, alre avond met middag		

Figure 3
Concept Map Displaying Parental Mediation Strategies and Contextual Factors.



possible social desirability effects and construct a valid coding scheme. In the first round of open coding, we focused on sections that could characterize patterns of mediation strategies as found in the previous literature, sections that could suggest new strategies, and sections hinting at contextual factors. Then, during two iterations of axial coding, we reviewed the data and compared the mediation practices and contextual factors in order to discover similarities and differences within codes as well as their (hierarchical) relations. This was an iterative process where we first specified codes individually, followed by discussions among the authors to agree upon a concept map (Figure 3).

Results

The concept map in Figure 3 summarizes the results of our study. It presents mediation strategies that were referred to in the previous literature as well as new strategies that emerged from our data (RQ₁). Additionally, it shows both external and internal contextual factors that elicit (transitions between) media-tion practices (RQ₂).

Restrictive Mediation

In total, the results revealed five types of restrictive mediation relating to time, device, content, location, and purchase.

Time Restrictions. The results pointed to restrictive time measures that were directed at the moment of media usage (e.g., limiting digital play in favor of outdoor play when the weather is nice) and the duration (e.g., imposed via kitchen timer). Duration restrictions were especially pertinent to children in primary school, as illustrated by the mother in Family_K (girl7, boy8, boy11): “normally they play about half an hour, [...] maximum one hour,” and less applicable to toddlers because their limited attention span already instilled activity variation without parental intervention. Parents ended their children’s media use either via a communicative approach, by allowing their children to have a say (i.e., transition to active mediation, see further) or via a non-communicative approach where children were expected to obey immediately. In the latter, parents often took strong measures, such as turning off the device, if children acted adversely.

The participating parents motivated their restrictions by assessing the sum of activities children engage in, including non-digital activities. They made decisions in favor of children’s health, underscoring the importance of physical activities and, more generally, a healthy and varied program of leisure activities. Some parents restricted gaming but allowed television use before bedtime, hereby preferring a medium that would keep the child relaxed. Furthermore, educational concerns seemed to outweigh entertainment in the mediation of children of school age, with parents restricting digital media use until homework was finished, restricting technology use on weekdays, or only allowing educational media content during weekdays. The latter dynamics illustrate that time, content, and device decisions are often mutually dependent and influenced by the particularities of both parents (e.g., beliefs) and child (e.g., primary school versus preschool). Other contextual factors were the family schedule (e.g., bedtime routines), disposition of media devices (with particular affordances), and family composition. For instance, the diary and interview of Family_A (girl7, girl10) showed that this mother regularly allowed her youngest child to watch television so she could assist in the oldest child’s homework.

Device Restrictions. Device restrictions were mostly set up to control usage and avoid children changing “something in the settings by accident” (mother, Family_E girl0, boy6), breaking the devices, or as a punishment. It often implied that children were not allowed to play by themselves or walk around with portable devices, that devices were kept away from children, or that they had to seek permission to use them.

Other restrictions concerned the number and type of device(s). For instance, parents favored the use of alternative devices when it was strongly personally appropriated (e.g., parent’s mobile phone), when used for work (e.g., laptop), or when it concerned a

device that an older sibling had bought him-/herself. Mediation differed according to parental judgment on the appropriateness of the devices in terms of usability and children's developmental capabilities. To illustrate, "The tablet is a handy device. They take it with them. The laptop, too, but still, the tablet is more compact and easier for them" (mother, Family_D boy4, girl6). Also, "the tablet is more convenient; you can't do much wrong. Everything has been set up, but the computer. . . you can always click on something" (mother, Family_R boy3, girl4, girl7).

Content Restrictions. Many parents expressed concerns regarding inappropriate (i.e., violent, sad, scary, or sexually explicit) content. The mother of Family_H (boy7) put it simply: "He is only 7. You can't expect them to be 18 already." Parents were likely to discuss confrontations with undesirable content, delineating a transition to active mediation (see further). The mother of Family_R (boy3, girl4, girl7) had installed technical restrictions on the family's laptop as a preventive measure. However, she and her husband had quickly decided to uninstall these because they hampered their own online activities. The interviews further showed that the majority of parents asserted not (yet) having installed technical safety measures but taking this into consideration when their children grow older, start using digital media more intensively, and/or when they are more likely to consume violent content, "like games where they shoot each other" (mother, Family_A girl7, girl10) or "less innocent" content (mother, Family_F girl3, boy6), like "chatting" (mother, Family_E girl0, boy6).

Location Restrictions. All participating parents imposed location restrictions as a measure to safeguard children's health, protect the device from damage, or facilitate the distant (auditory/visual) monitoring of children's media activities. To illustrate, the mothers of Family_M (boy0, girl3) and Family_R (boy3, girl4, girl7) expressed their concerns about the negative effects of using mobile media on the couch, referring to neck pain and fertility problems, respectively. The latter mother added a pragmatic issue: "On the couch it is so comfortable. If I then ask to stop, it will become more difficult for them [...], whereas at the table they are more easily tired of it by themselves." Other contextual factors that shaped (exceptions on) location restrictions were the strength of Internet connectivity, family schedule, and the composition of living space.

Purchase Restrictions. Several parents stated they had set rules in place to safeguard their budget, such as allowing "free apps only" (mother Family_D boy4, girl6), or stipulated how to save up to buy new devices or content. For instance, the mother in Family_R boy3, girl4, girl7 explained why they had bought a tablet: "The tablet of my mother [the child's grandmother] had many applications whereas with our [Nintendo] DS we always had to buy games, the same goes for the [Nintendo] Wii. And those [tablet] apps, we already found them super." This rule-setting often switched to active mediation when parents allowed input from the child and rule negotiation (see further).

Co-use

Two manifestations of co-use emerged from the data, namely the parent as helper and buddy.

Helper. Parents who acted as a helper guided children when they used a digital medium for the first time or when they encountered problems, for instance when children accidentally closed a Web browser or could not achieve a satisfying game result. "They usually don't play alone. [...] They're not familiar with it, so we do it together. [...] We help them out for a short while" (mother, Family_D boy4, girl6). Many parents asserted that their involvement decreased when their child became more experienced, linking mediation practices with children's (digital literacy) development.

Buddy. The parent as buddy enjoyed sharing certain media activities for recreational purposes. Our results revealed four manifestations of buddies, namely the parent of one child, the Facebook parent, the occasional family-fun-time seeker, and the active spectator.

Parent of One Child. Parents with only one child were often profoundly involved in their child's digital activities, which usually evolved into practices of active mediation or participatory learning (see further). Supposedly, these parents took up the role of the "missing" sibling. They enjoyed shaping digital experiences and collaborative decision-making. For instance, in Family_O the mother seemed to shape her 9-year-old son's game experiences considerably:

He comes and shows me: "I just constructed this [with Minecraft], what do you think?" Then I get to choose whether it should be in glass or with which stones. Or he asks me what kind of house I'd like.

Facebook Parent. Media consumption patterns of adults, and in particular Facebook use, seemed to shape children's digital activities. For instance, in Family_P (boy5, girl5, boy8), children regularly played online games like Bejeweled or Jetpack Joyride via the mother's Facebook account. In the diary, she explained this: "As my laptop is also being used professionally [...] the rule is, only games via mummy's Facebook account." Equally, in Family_S (boy8), the father explains that his son "is allowed to co-view his [i.e., the father's] Facebook feeds," and this "especially when there are soccer-related updates." Parents clarified their children had started showing interest because of their own Facebook activity. "He [i.e., 6-year-old son] saw me playing games the other day and wanted to try it out himself, too. Now he plays Panda Jam, [...], Farm Saga, a kind of Candy Crush, and Angry Birds, too" (mother, Family_F girl3, boy6). In some families, Facebook co-use became part of household routines.

What we sometimes do is Bejeweled [...] I actually play that a lot. And he [son, age 8] also plays this game now and then. Every day you have to do a jackpot to gain extra points and then everybody starts guessing how many symbols we will have. It's a tradition to do every evening. (mother, Family_P boy5, girl5, boy8)

Occasional Family-Fun-Time Seeker. This manifestation of a buddy refers to parents who enjoy sharing digital media experiences with their children occasionally. For instance, in Family_B (girl0, girl8), the oldest daughter sometimes asks to go on YouTube, to which the mother reasons "when there is time in the evening, we sometimes do it together. It's fun." This manifestation of co-use seems to be related to parents' intentional investment in family bonding, as illustrated in the following interview excerpt:

If they do something together with the parents, it is not like "go away and entertain yourself." No, I am convinced that these are moments that you have to share with your child and with your family. Sending your children away just to get rid of them, that's not the rule here. (mother, Family_D boy4, girl6)

Active Spectator Parent. This manifestation occurred whenever children initiated interaction to show or share achievements and experiences. Parents then became spectators, driven by a genuine interest in and motivation to enjoy joint media activities. These intense but relatively short moments of involvement seemed to compensate for moments when parents had to multitask e.g., when working late, dividing attention among siblings, or, as illustrated in Family_O (boy9)'s diary, when switching regularly between "household activities," "allowing the child to demonstrate something," and "playing together."

Active Mediation

Our results showed that active mediation related to parent-child discussions with regard to time, device, content, and purchase.

Time. Time-related active mediation deals with the moment or duration of media usage. Parents often engaged in discussions to negotiate or justify their, typically restrictive, mediation practices. They link this to family practices, e.g., "because dinner is ready" (mother, Family_C boy6, boy8), or they believe that children should engage in a healthy and varied program of leisure activities, as illustrated by the mother in Family_G (girl3) "when she wants to watch television after school, I say no if the weather is nice. We are going to play outside, and I do explain this to her."

Device. Our results showed that parents regularly had to compensate for children's lack of media experiences or developmental issues. Therefore, they had

to engage in instructive discussions or demonstrations to teach (the risks involving technical issues, like download or installation procedures. Often, these mediation practices made parents switch to instances of co-use, for example when explaining how to proceed in a game (mother, Family_K girl7, boy8, boy11) or demonstrating how to use the mouse (mother, Family_M boy0, girl3). Alternatively, it could also end in instances of participatory learning when parents and children figured out technical issues together (see further).

Content. Discussions related to media content primarily occurred to avoid or mediate harm from inappropriate content. For example, in Family_I (boy8), the mother explained, "And then I ask him, "explain it to me" [...]. If there is violence in it [i.e., game], then I discuss this with him, explaining I do not like it." Content discussions were often elicited after children had learned new media opportunities from school, relatives, or friends, or after instances of being an active spectator. Many parents took the child's perspective into account and adjusted their approach because they didn't "want to point certain things out to her that she probably didn't see" (mother, Family_B girl0, girl8), trusted their children, relied on their interpretation, or because they wanted to observe the effects on their children first. Active mediation did not necessarily result in restrictions, even when parents disapproved of the content, as illustrated by the simulation of the mother and son in Family_O (boy9) that resides on trust in the child's judgment.

I don't know what you have to do here. I will have a look right now. Ah, with catapults [...], bats [...]. Yeah, I don't know. Explain to me the purpose of this game. Ah, you are stoning them? I don't really find this okay. But yeah [...] I let him play for a little while. It looks okay, kind of. [...] He knows that I don't like that. [...] He also tells me: "It's only a game, Mom."

Purchase. The data revealed instances of media purchase discussions. Many parents asserted justifying or negotiating purchase restrictions (see earlier), such as questioning the investment in a gaming console when they already had a tablet with access to a variety of free or low cost games. Alternatively, parents associated it with parental rewards, like in Family_J (boy4, boy7, boy10): "and they had a play date and found these [game consoles] interesting. Then I said, you know what, you get it for your birthday."

Participatory Learning

Our results provided empirical evidence of the strategy of participatory learning. It involved characteristics of co-use and active mediation and manifested itself mainly among parents who wanted to invest in their children's and/or their own knowledge and skills. On the one hand, it was directed at operational learning and considered as an investment in acquiring digital literacy skills for child and

parent, as illustrated by the following interview quotes “I find it important that she develops the related skills” (father, Family_W girl3) and “It is just some kind of a phenomenon, a digital era. [...] You can’t stop it. [...] I keep up with the times” (mother, Family_C boy6, boy8). This type of learning is further exemplified in Family_L (boy8)’s simulation in which mother and child collaboratively figured out how to set up a digital medium:

Child: Do I need this CD?

Parent: Good question. I will have a look; don’t know whether it will work. Will try to find it. Here, do you see? Application not found. I have to install it first.

Child: Here? It worked for my teacher. [...]

Parent: Can you just look for the games and play instead of using the disc?

Child: Fine, I eject the CD first, right mum?

On the other hand, families also collaboratively learned through media, hereby extending the understanding of the world (i.e., not limited to media-related knowledge *per se*), such as instructing “to Google this, and then you know what it means” (mother, Family_L boy8).

Distant Mediation

The results pointed to instances wherein parents kept aloof from children’s media usage while still keeping an eye on what is happening. We termed this distant mediation, as an umbrella term for deference and supervision.

Deference. Deference occurs when parents make the deliberate choice not to intervene and grant trust and autonomy to their children, expecting them to act responsibly. This was evidenced in our data as parents often said to keep informed from a distance (e.g., regularly checking the screen from nearby location) and maintain a considerable level of involvement while granting autonomy to the child. “When I am in the kitchen, I quickly go back and forth. But usually, he [son, aged 8] looks up the same things. So I am fairly at ease” (mother, Family_P boy5, girl5, boy8).

Supervision. Supervision is associated with parental efforts to allow children to use digital media independently but under direct parental supervision. Typically, it is a necessity because parents have to multitask with housekeeping activities. Our data pointed to several instances of supervision and the relation with external factors such as the limited available time of parents and welcoming digital media as a “babysitter.” The simulation in Family_D boy4, girl6 illustrated transitions between co-use and supervision. We observed both parents actively engaging in their children’s digital game experiences, but once their children became less in need of help, they continued their household-related practices. They did, however,

deliberately remain within hearing distance to be able to easily switch back to their role of helper whenever necessary.

Discussion and Conclusion

The current study contributes to the body of research on PM with in-depth insights into the contextual factors that shape various mediation practices in families with young children. Additionally, it points to the emergence of new manifestations and transitions between them.

Concerning restrictive mediation, this study identified, in line with previous research, content and time restrictions exerted in order to avoid negative effects. Additionally, our results identified three new manifestations related to device, location, and purchase restrictions, hereby revealing other determining factors such as the fear of broken devices or the need to find ways to punish the child. Furthermore, in our data, technical measures were associated with content and device restrictions. Further work is needed to (re)consider the category of technical safety guidance, questioning whether it merits a separate mediation style. We argue that as long as the majority of technical measures afford time, content, or device restrictions, it is not surprising to see a common ground with restrictive mediation practices.

In addition to confirming the existence of co-use and active mediation strategies, this study also suggested interrelationships and nuances that have remained underdocumented in previous studies. The topics of discussion in active mediation are only partly in line with previous work on PM of television viewing (wherein content discussions predominated) and mediation of older children's digital media use (that has reported on content and device-technical discussions). Our results revealed that parents also discussed time and budget decisions to justify or negotiate the rules, hereby often pointing to transitions between active and restrictive mediation.

Our notion of co-use is in line with previous work (e.g., Nikken & Jansz, 2006; 2014; Valkenburg et al., 1999) in that we also found that positive motivations like seeking shared media enjoyment can induce co-use. However, this study also pointed to new practices, making a distinction between the parent as helper and buddy. We believe that by having accounted for a variety of digital media activities and contextual factors, we were able to reveal various particular buddy manifestations and complement the insights from previous PM studies. Our findings indicated that buddy practices could result from intentional actions (e.g., high parental involvement, family quality time) as well as routine and family practices (e.g., parent's Facebook use or older siblings' media preferences inciting new media opportunities or risks).

Furthermore, our results suggested that co-use and active mediation were strongly interwoven. We even found empirical evidence that several of their characteristics merged when parents learned from or together with their children. We made use of Clark's (2011b) term, participatory learning, and delineated this as a fourth mediation strategy. Whereas to some extent, the instructive role of the parent has been put

forward before (see e.g., Plowman & McPake, 2013), the involvement of children in our study proved relevant in the refinement of PM theory as it revealed that children, too, initiated instructive discussions. Because of the importance of media literacy skills to securely participate in today's digital world, we strongly encourage future researchers to pay more attention to this mediation practice. In equal merit of further research attention is a better understanding of these manifestations in the light of the sociology of childhood (Clark, 2011b), taking into account children's agency both in relation to and beyond media use. We hereby reopen the debate on the appropriateness of the term "mediation" as parents do more than simply mediating negative media effects (Clark, 2011b; Padilla-Walker et al., 2012).

We identified a fifth mediation style, distant mediation, which aggregates two previously defined monitoring practices, namely deference and supervision. From the parenting literature, we learned that some parents monitor adolescents' behavior while deliberately granting them trust and autonomy, referred to as deference (Padilla-Walker et al., 2012). Supervision was used in the media literature and typically described as a necessity when parents have to multitask (Nikken & Jansz, 2014). We have chosen to use a new umbrella term, distant mediation, because our data pointed to varied nuances of monitoring young children's media use and suggested the existence of a less hierarchical role for the parent, who is no longer expected to always take the lead, as Clark (2011b) has hypothesized.

Overall, this study revealed the dynamic and often paradoxical nature of PM. Clearly, parents' mediation practices depend on contextual demands, which evolve over time (see e.g., the rapidly changing popularity of a particular content or device) and vary between locations (e.g., more relaxing rules in the car or restaurant). Under certain circumstances, technologies serve as a substitute (e.g., as a "babysitter"), while under other they form the subject of parent-child interactions. PM practices also unfold differently depending on whether it precedes, happens during or after media use, and whether the parent or child is the initiator. In terms of motivations, we learned that although parents don't like their child to be too absorbed in digital play at the expense of a healthy balance in leisure activities (e.g., safeguarding sufficient time for physical activities and outdoor play), exceptions are allowed when media usage serves educational goals or is a convenient way of occupying the child. Parents believe that they cannot counter the advent of digital media and should, instead, keep up with the changing technology landscape. Even when holding negative attitudes towards digital media penetrating the home environment, parents seem to acknowledge beneficial uses. Surprisingly, our findings showed that parents express concerns regarding inappropriate content, but at the same time believe their young child does not have bad intentions when engaging with digital media and therefore is less likely to encounter risks. In general, they trust their young child(ren), consider their media preferences and uses as innocent, and believe parental mediation efforts suffice to remediate potential harmful effects. Parents do, however, anticipate more concerns as children grow older, become more digital media literate, and independent.

Given the dynamic nature and situatedness of PM practices, we argue that further theoretical refinement of PM theory benefits from a cultural-historical “wholeness approach” that “includes a global-local dialectic in which childhood and children are seen in interdependent relation to their activities, institutional practices, and societal conditions” (Fleer, Hedegaard, & Tudge, 2012, p. 9). In this study, we focused on the localized practices within the family. More particularly, we described how the conditions created for children are shaped by and are shaping family members’ engagement in the (media) world, and hinted upon influences from outside the home context, like those from school, hobbies, relatives, and friends. The importance of accounting for contextual and social practices in the investigation of how people appropriate technologies and ascribe meaning to them, is in line with domestication theory (Silverstone & Hirsch, 1992). Instances of two-way interactions between parent and child merit special attention in future work. Our results on participatory learning and the various buddy styles suggest the existence of less hierarchical and less risk-avoidance, more opportunity-seeking mediation styles (see also e.g., Clark, 2011b) or even reversed socialization relationships through processes of bottom-up technology transmissions (Correa, 2014). Moreover, this study exemplifies how the precursors of PM that have been extensively reported, like the demographic variables of parent and child (see e.g., Gentile et al., 2012; Mendoza, 2009; Nikken & Jansz, 2006), are to be understood in their dialectical relation to various contextual factors. For instance, active mediation is likely to occur in families with young children across the age span of 3 to 9, but manifests itself as explanations and justifications towards the youngest ones rather than discussions. Other characteristics than age, like the child or parent’s temperament or children’s problematic media use, may equally influence the extent to which children are being heard. In addition, the child’s exposure to media use of others (e.g., older siblings) is likely to determine the need for different or preventive (content) restriction measures, and this typically at an earlier age. Finally, as the wholeness approach in cultural-historical research does not only account for localized complexities and provides a perspective of the local-global that is dialectically framed instead, we argue that future investigations are necessary to understand how global factors like societal conditions play a part and shape localized PM practices.

To conclude, we acknowledge that we presented an exploratory study and could not fully exclude the possibility of social desirability effects, even though data triangulation had to minimize such biases. Nonetheless, we argue that the power of this study is in providing good examples of emergent PM practices inasmuch as it is generating hypotheses and new directions for further research.

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Appendix 1
An overview of the main characteristics of the participating families

Family	Age and gender contact person: female (f), male (m)	Family situation: Married (M), Blended Family (BF), Single Parent (SP), Cohabitation (C), Widow (W)	Age children living at home, comma separated and gender female (f), male (m)	Employed: yes (y), no (n)	Highest educational level: academic master (M), bachelor (B), technical & vocational training (T&V), higher education (HE), secondary education (SE)	Digital devices at home	Average media literacy profile contact person: range 0– 5 (SD)*
Family_A	46(f)	M	7(f),10(f)	y	M	Laptop:2, Nintendo_DS:1, iPod:1, smartphone:1, tablet:2	2,867 (SD:1,767)
Family_B	37(f)	M	0(f),8(f)	y	B	Desktop_PC:1, laptop:1, Nintendo_Wii:1, Nintendo_DS: 1, tablet:1, smartphone:1	2,5 (SD:1,4)
Family_C	42(f)	M	6(m),8(m)	y	B	Desktop PC:1, laptop:3, Nintendo_Wii:1, Nintendo_DS:1, smartphone:2	3,67 (SD:1,54)
Family_D	31(f)	M	4(m),6(f)	y	B	Laptop:1, tablet:1, smartphone:2	2,2 (SD:1,2)
Family_E	28(f)	M	0(f),6(m)	n	T&V (12– 16y)	Desktop_PC:1, tablet:1, smartphone:2	3,13 (SD:1,46)

(continued)

Appendix 1
(Continued)

Family	Age and gender contact person: female (f), male (m)	Family situation: Married (M), Blended Family (BF), Single Parent (SP), Cohabitation (C), Widow (W)	Age children living at home, comma separated and gender female (f), male (m)	Employed: yes (y), no (n)	Highest educational level: academic master (M), bachelor (B), technical & vocational training (T&V), higher education (HE), secondary education (SE)	Digital devices at home	Average media literacy profile contact person: range 0–5 (SD)*
Family_F	30(f)	M	3(f),6(m)	y	HE	Desktop_PC:1, PlayStation3:1, tablet:1, smartphone:2	2,733 (SD:1,387)
Family_G	28(f)	BF	3(f)	y	SE	Desktop_PC:1, laptop:1, PlayStation:1, tablets:2, smartphone:1	2,43 (SD:1,87)
Family_H	29(f)	SP	7(m)	y	SE	Laptop:1, Nintendo_Wii:1, Nintendo_DS:1, smartphone:1	2,6 (SD:1,298)
Family_I	41(f)	BF	8(m)	y	B	Laptop:1, smartphone:1	2,533 (SD:1,505)
Family_J	33(f)	SP	4(m),7(m), 10 (m)	y	B	Desktop_PC:2, XBOX:1, Vtech:1, Nintendo_Wii:1, PSP:1, Nintendo_DS:1, tablet:1, smartphones:2	2,6 (SD:1,454)
Family_K	36(f)	BF	7(f),8(m), 11(m)	y	B	Desktop_PC:1, laptop:1, Nintendo_Wii:1, Nintendo_DS:1, tablets:2, smartphone:3	3,267 (SD:1,668)

Family_L	39(f)	SP	8(m)	n	B	Desktop PC:1, Nintendo_Wii-mini:1, Nintendo_DS:1, tablet:1, smartphone:1	2,27
Family_M	31(f)	M	0(m),3(f)	y	SE	Laptop:1, PlayStation2:1, tablet:1, smartphones:2	(SD:1,39)
Family_N	34(f)	M	3(m)	n	SE	Laptops:2, Nintendo_Wii:1, tablets:2	3,066 (SD:1,533)
Family_O	39(f)	C	9(m)	y	T&V (18+)	Laptop:1, Nintendo_DS:1, tablet:1	2,666 (SD:1,397)
Family_P	38(f)	W	5(m),5(f), 8(m)	y	B	Laptop:1, Nintendo_Wii:1, Nintendo_DS:1, smartphone:1	2,533 (SD:1,125)
Family_Q	40(f)	C	1(m),5(f)	y	SE	Desktop_PC:1, laptop:1, tablet:1, smartphones:2	2,4
Family_R	35(f)	M	3(m),4(f), 7(f)	n	T&V (18+)	Laptop:1, Nintendo_Wii:1, Tablet:1, Nintendo_DSi:1	(SD:1,3)
Family_S	39(m)	SP	8(m)	y	B	Desktop_PC:1, laptop:1, tablet:1	2,266 (SD:1,791)
							2,2
							(SD:1,521)
							2
							(SD:1)

(continued)

Appendix 1
(Continued)

Family	Age and gender contact person: female (f), male (m)	Family situation: Married (M), Blended Family (BF), Single Parent (SP), Cohabitation (C), Widow (W)	Age children living at home, comma separated and gender female (f), male (m)	Employed: yes (y), no (n)	Highest educational level: academic master (M), bachelor (B), technical & vocational training (T&V), higher education (HE), secondary education (SE)	Digital devices at home	Average media literacy profile contact person: range 0–5 (SD)*
Family_T	41(f)	M	2(f),5(m), 7(m),10(m), 15(m),18(m),21(m)	n	SE	Desktop_PC:1, laptop:1, PlayStation_2:1, PlayStation_3:1, Xbox_360:1, 1 Nintendo_Wii, PSP:1, PS_VITA:1, Nintendo_DS:1, Nintendo_3:1, tablet:1	2,785 (SD:1,761)
Family_U	44(f)	M	6(m),8(m)	y	M	Desktop_PC:1, laptop:4, Xbox_360:1, Nintendo_DS:2, tablets:4, smartphones:2	2,4
(SD:1,3)							
Family_V	37(f)	C	1(f),4(m)	y	M	Laptop:1, tablet:1, smartphone:1	2,67
(SD:1,11)							
Family_W	32(m)	M	3(f)	y	M	Laptop:1, smartphone:2	4,2
(SD:0,6)							
Family_X	39(f)	M	4(f),6(f)	n	M	Laptops:2, tablets:2, smartphone:1	2,666 (SD:1,496)

* Note. Media literacy score via standardized Web-Use Skills scale (15 items for General Populations) (Hargittai & Hsieh, 2012).



The Influence of Social Networking Sites on Political Behavior: Modeling Political Involvement via Online and Offline Activity

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The Influence of Social Networking Sites on Political Behavior: Modeling Political Involvement via Online and Offline Activity

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Since the Democrats were successful in using social networking sites (SNSs) to mobilize support among voters in the 2008 Presidential election (e.g., Charles, 2012), social networking sites emerged as a major political campaign message dissemination tool (e.g., Robertson & Vatrappu, 2010). Political campaign applications for online services show great promise, owing to their ability to harness young people's eagerness to fulfill such gratifications as entertainment, even in civic life (Hunt, Atkin, & Krishnan, 2012; Shah, Kwak, & Holbert, 2001). The key role played by social networking sites in the "Arab spring," in particular, underscores the need to study predictors of SNS use for political purposes (Mansour, 2012). boyd and Ellison (2007, p. 221) define social networking sites as a "set of Web-based services that allows individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, (3) view and transverse their list of connections and those made by others within their system."

On the domestic front, past work uncovers relationships between social network service uses and political activities (Zhang, Johnson, Seltzer, & Bichard, 2010). Over the past decade, social media have become an effective channel for delivering political messages and appeals directly to voters (Hayes, 2008; Rainie, 2008). Furthermore, the political platform presented by social network services enables users to express and access political information in real time (Kushin & Yamamoto, 2010). Young adults, who can adapt to new media environments more readily than other age groups, are reported to increase their political efficacy by exchanging

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political ideas with their peers, which in turn enhances their political involvement (Moy, Torres, Tanaka, & McCluskey, 2005)

Nowak, Hamilton, Atkin, and Rauh (2010) review two common and opposing conceptions of digital media influences on voting and community involvement: (1) The Social Influence model, which “predicts that the interactivity of new media will complement traditional media and encourage voters to more actively engage in politics” (p. 5), and (2) the displaced effects model, which sees the proliferation of narrowcast channels undermining patronage of public affairs content, social capital, and political/civic engagement (e.g., Bucy, Gantz, & Wang, 2007; Lin, 2002; Putnam, 1995).

Exposure to online social networks was initially expected to erode time affordances for maintaining offline social networks and decrease the number of offline social networks with which one was affiliated (Nie, 2001). More recent work, however, suggests that people can expand and maintain their social network connections by using online social network services (Ellison, Steinfield, & Lampe, 2007). Furthermore, a positive relationship between the size of one’s social network online and offline has been found in political communication studies (Conroy, Freezell, & Guerrero, 2012). Interactions with other online social network users, which can facilitate discussions on political issues, lead users to be active in offline political activities.

The present study explores which activities on social networking services influence political involvement. A range of public sphere influences—including SNS evaluation, political orientation, offline political discussion, and social capital formation activities via social network services—will be explored by using national survey data. In particular, we examine the influence of online and offline links between these political activity measures—typically investigated with mass media—to explore social media influences on political involvement.

Social Media and the Public Sphere

More than three decades ago, Poole (1983) prognosticated that new media would reinvigorate democracy, assuming a role of *Technologies of freedom* (see also Papacharissi, 2006). Yet early research suggested that the Internet had little influence on political involvement (e.g., Castells, 2001). So optimistic views heralding the Internet as a “new sphere in which people can learn to participate in the political world” (Han, 2008, p. 66), were countered by concerns that it might encourage social isolation (e.g., Kosicki & Yuan, 2001) or expand digital divides in terms of political information (e.g., Castells, 2001). We can gain a better understanding of social media influences on political involvement by examining the parallel social capital domains with which it has been widely linked (e.g., Jeffres, Lee, Neuendorf, & Atkin, 2014; Vitak et al., 2011).

Social capital can be defined as “social networks and the associated norms of reciprocity and trustworthiness” (Putnam, 2007, p. 137).¹ The interrelations among

social capital, political involvement, and media use have been widely debated. Research shows that newspaper reading predicts community social capital (e.g., Jeffres, Lee, Jian, Yoon, & Atkin, 2014), although Putnam's (1995) seminal work documents an erosion of social capital values (e.g., civic engagement and community interaction) over the years. Still, building on Habermas' (1962) notion of the "public sphere," researchers posit that such values can increase the effectiveness of democratic politics and enhance our understanding of how social network service contributes to an effective democracy (Putnam & Goss, 2002; Valenzuela, Park, & Kee, 2009). As Hunt, Atkin, and Kowal (2013, p. 66) note, "social capital within a community can lead to safer and healthier communities, with a better-informed citizenry regarded as the lynchpin to effective economic and democratic functioning."

Although television viewing was implicated by Putnam (2000) as detracting from political involvement and social capital, online venues can help reverse this trend (Charles, 2012; Han, 2008; Nowak et al., 2010). Ellison and colleagues (2007) found that SNSs use was the strongest predictor of social capital in their study of college students. SNS use is also supplementing offline social capital, such that users can maintain their social network with less effort than before (de Zuniga, Jung, & Valenzuela, 2012; Johnston et al., 2013). SNS activities are generally strong predictors of political involvement and participation (e.g., de Zuniga et al., 2012; Valenzuela, Allagada, & Scherman, 2012), although those harboring a fear of SNSs do not use them for political purposes (Valenzuela et al., 2009).²

Social media users can build relations with other users more easily with the aid of activities on social network sites (Krueger, 2006; Rhan & Transue, 1998; Shah et al., 2001). With offline social capital activities, it takes a long period of time for people to decide whether they form new ties or stop connecting to others (Putnam, 2007). Across social media, relationship formation is happening in real time, by clicking a button on screen, posting messages, reading other members' postings, and obtaining membership. By using the SNSs' functions, people can be easily connected to political parties or social movement activists (Robertson & Vatrappu, 2010). SNSs' activities also make it possible for people to mobilize for group actions to express their group opinions on social agendas more quickly than they could offline (Krueger, 2006).

Social Network Services and Political Involvement

Political involvement has been linked to civic engagement in studies of general Internet use (e.g., Delli-Carpini, 2000; Jeffres, Lee, Jian, Yoon, & Atkin, 2014; Jennings & Zeitner, 2003). Political involvement can be defined as political participation or political engagement (Kushin & Yamamoto, 2010; Scheufele, Shanahan, & Kim, 2002). While political participation can be measured in terms of voter turnout and other activities in election periods, political involvement can be understood as more general politically related activities (Scheufele et al., 2002). When diverse ways

of political expression are institutionalized and people's freedom of speech is protected, people can express their political opinions by participating not only in elections, but also in political activities such as political polls, town hall meetings, and civic movements hosted by social activists. In addition, one's level of political involvement is related to socio-economic variables such as age, education, and annual income (e.g., Han, 2008).

Social network service use is strongly related to overall political involvement, from main political events like elections to simple political discussions in our daily lives. A social network service's influence can be examined in diverse political events, from global politics such as consensus building in the European Union, to national politics such as U.S. Congressional elections (Scheufele et al. 2002; Vesnic-Alujevic, 2012; Willams & Gulati, 2013). The widespread adoption of SNSs has made it possible for users to access multiple aspects of political issues, chiefly by increasing the number of people who can provide them with political information online (Miller & Krosnick, 2004; Shah et al., 2001).

Recent election cycles have witnessed a proliferation in candidate use of social media as message dissemination tools (Willams & Gulati, 2013; Woolley, Limperos, & Oliver, 2010), which in turn stimulates public interest in political activities on SNSs (e.g., Charles, 2012). Citizens can feel a more personal connection with political candidates, who they may list as "friends" on their online social network sites (Charles, 2012). Furthermore, young adults are increasingly utilizing SNSs to access political information and share their opinions with peer groups (Kushin & Yamamoto, 2010; Mou, Atkin, & Fu, 2011; Mou, Atkin, Fu, Lin, & Lau, 2013).

Kushin and Yamato (2010) found that people are more likely to engage in political activities when they frequently express their political opinions on social network services. Their findings underscore that mere access to political information through Internet services only marginally increases political involvement level. In addition, the SNSs' role in political mobilization is beginning to rival that of such other Internet applications as email, blogs, and Web sites (Macafee & De Simone, 2012; Shah, Cho, Eveland, & Kwak, 2005). Voters can thus use SNSs to bridge their political orientation and political behaviors (e.g., participation in political protests; see Mou et al., 2013). Therefore, political activities on social network sites can be said to be interrelated with political involvement.

In addition, interpersonal political communication can modify political involvement (e.g., Shah, McLeod, & Yoon, 2001). Zhang and colleagues (2010) distinguished political involvement from civic involvement, finding that social network site use is positively related to civic involvement, but not to political involvement. Political involvement is influenced by interpersonal discussion on political issues, which is also positively related to civic involvement. However, SNS use for political purposes might help people remain active in offline political interpersonal communication (Conroy et al., 2012). Having blurred the distinction between online social capital and offline capital, SNS use is expected to be positively related to political involvement

Based on the conceptual linkages outlined above, we assume that political involvement is encouraged by one's level of political partisanship (or orientation), and further reinforced by offline interpersonal communication activity. We further assume that these same dynamics could also exist in the online environment, if social networking sites are established as vehicles for the cultivation of political involvement. As a practical matter, SNSs uses (e.g., posting activity, excluding someone from a post with which they might disagree) should thus emerge as important predictors of political involvement as well. This can apply to general posting activities on SNSs as well as posting among friends via SNSs and, following that logic, should positively influence political involvement. More formally:

H₁: Political orientation will positively predict political involvement.

H₂: Social networking site evaluation will positively predict political involvement.

H₃: Political posting will positively predict political involvement.

H₄: Peer political posting will positively predict political involvement.

It's useful to also consider interpersonal influences and the ways in which we engage others in political discussion, which scholars (e.g., Scheufele, Nisbet, Brossard, & Nisbet, 2004) see as central to democratic functioning. Stamm, Emig, and Hesse (1997) combined four measures into a "community involvement" index that was strongly related to media use and interpersonal communication. The same kinds of inclusion and exclusion dynamics governing offline political discussion can thus inform our understanding of similar behaviors in the social media realm, where recipient lists can be tailored with the click of a switch.

Research in the Spiral of Silence tradition, for instance, suggests that people prefer to discuss politics with like-minded others (e.g., Noelle-Neuman, 1984). In this way, one's political discussion network influences can shape political perceptions and involvement (e.g., Scheufele, Nisbet, & Brossard, 2003). Importantly, individuals more actively involved with political discussion in volunteer groups engage in more political activity (Scheufele et al., 2004); they're also less likely to be affected by media content (Erbring, Goldenberg, & Miller, 1980). In addition, political activity is influenced by the diversity of one's network (Kwak, Williams, Wang, & Lee, 2005; Price, Cappella, & Nir, 2002). Consistent with the Spiral of Silence hypothesis, Beck (1991) found that people were most likely to discuss politics with like-minded friends and relatives. Conversely, overall community diversity is inversely related to individual involvement in a political discussion network (see Jeffres et al. 2007; Scheufele et al., 2004). Such discussions are less palatable in settings where dissonant messages intrude (e.g., amongst coworkers) (Mutz & Martin, 2001; Scheufele et al., 2004).

Individuals are thus less likely to express their true feelings on controversial issues (e.g., affirmative action) based on perceived opinion spirals (Jeffres, Atkin, &

Neuendorf, 1999). As Scheufele and colleagues (2004) note, the process of self-selection may mitigate the potential for dialogue with non-likeminded others. We assume, then, that interpersonal discussion is related to political involvement. But since perceived opposition can have a chilling effect on one's willingness to express oneself, we further assume that users would control that by excluding outsiders from controversial social media posts. More formally:

H₅: Outsider exclusion will positively predict political involvement.

H₆: Offline talk will positively predict political involvement.

With regard to perceived SNS utilities, Gustafsson (2012) found that one's political orientation level—or depth of partisanship—can lead to different evaluations of their perceived value as political instruments. He found that those who were aggressively involved in political movements were more eager to have conversations with other people on political issues, and viewed a social network service as a useful tool to make their political participation more convenient. Furthermore, leading candidates—those who most enthusiastically set political agendas on the public as well as their supporters—were more passionate about adapting to the new media services to disseminate their political messages than were regular voters (Williams & Gulati, 2013).

This research implies that people who express higher levels of political orientation in a competitive political situation, such as an election, tend to have more positive evaluations of SNSs. Therefore, it can be assumed that those who are more politically active will express more positive evaluations of SNSs for political purposes when they display a stronger political orientation. Bucy and colleagues (2007) suggest that media fragmentation will “create a cascading number of small ‘fenced in’ communities in cyberspace,” reinforcing polarization in the larger body politic (p. 156). On an individual level, increased levels of posting activity—and feedback loops encompassing various public opinion echo chamber silos—would logically heighten one's partisanship. Based on that dynamic, we posit that political orientation level would also be predicted by the online activities outlined above (e.g., political posting, outsider exclusion). More formally:

H₇: Political posting will positively predict political orientation level.

H₈: Peer political posting will positively predict political orientation level.

H₉: Outsider exclusion will positively predict political orientation level.

H₁₀: Offline political discussion will positively predict political orientation level.

Although an ample and growing literature now documents the linkage between social media use and political engagement, research has yet to fully explore how

these variables relate to grouping practices for postings on political issues of the day (that is, the exclusion of others from friend groups for certain postings). This process might be issue- or message-specific, as when one excludes a pro-life friend from a pro-choice posting, for instance. The dearth of work in this area thus provides little in the way of theoretical guidance, prompting us to pose the following research questions regarding peer political posting and exclusion of outsiders:

RQ₁: What is the relative influence of political orientation level, SNS evaluation, and political posting activities on peer political posting?

RQ₂: What is the relative influence of political orientation, SNS evaluation, and political posting activities on outsider exclusion?

Methods

Sample

Study data are based on the Pew Research Center's Internet & American Life Project's winter (Rainie & Smith, 2012) tracking surveys. This data set was selected because it can provide a current, externally valid assessment of the relationships among variables of interest here, which include political orientation, social network evaluation, social network activities, offline political debate, and political involvement. The survey data include adult responses provided by 2,253 landline and 1,352 cell phone respondents. Among the sample, 571 respondents provided data on social network use and political involvement. Of these respondents, 243 respondents (42.5%) are male and 328 (57.5%) are female; the age range is from 18 to 78 ($M=39.07$; $SD = 14.54$). With regard to income, 35.6% of respondents earn less than \$40,000, 35.1% fell in the income range of \$40,001 to \$100,000, and 21.0% earn more than \$100,000 annually. Some 12.9% of sample respondents have more than a graduate-school-level education, 62.3% are vocational school or college graduates, and another 24.6% of respondents' education level fell in the range from "vocational school" to "have no more than high school education."

Measures

Political Orientation Level. Political orientation level was measured by an item on "Ideology Orientation" (IDEO) which asked, "In general, would you describe your political views as...?:" the response options are 1) Very conservative, 2) Conservative, 3) Moderate, 4) Liberal, and 5) Very Liberal. The respondents to IDEO questions were collapsed into three "Political Orientation" categories; respondents (30.8%) who were evaluated as very conservative or very liberal were grouped as individuals with a polarized political orientation; respondents (49%) who

evaluated themselves as conservative or liberal were regrouped as individuals with an ideological political orientation; the rest of the respondents (20.2%), who evaluated themselves as moderates, were regrouped into individuals with a non-partisan political orientation.

Evaluation of Social Network Sites for Political Purposes. Social network evaluation for political purposes consists of four questions scored on a 4-point scale, ranging from *not at all important* to *very important*. They include: "Overall, how important are social networking sites to you personally when it comes to: (a) Keeping up with political news, (b) Debating or discussing political issues with others, (c) Finding other people who share your views about important political issues, and (d) Recruiting people to get involved with political issues that matter to you." Using factor analysis (Varimax rotation), the four questions were grouped in one component named "SNS Evaluation;" the Eigenvalue of the component was 2.84 and the component accounted for 71.01% of the total variance. The average value of the four scores was used in regression analysis and the reliability coefficient Cronbach's alpha was .86.

SNS Activities Regarding Political Issues. Three dimensions of SNS use were measured: political posting on my social networking sites, political posting on social network sites by friends, and experience in excluding others from my groups on social network sites because of political issues. Specifically, the item addressing political posting on social networking sites asks, "Thinking about everything you have posted recently on social networking sites, such as status updates, comments, or links to news stories, about how much of what you have posted is related to politics, political issues, or the 2012 elections?" The dimension on political posting behaviors of friends was tapped by items asking "How about the people you are friends with on social network sites?" and "How much of what they share and post is related to politics, political issues or the 2012 elections?" These two items were measured on a 5-point scale; 1) all or almost all of it, 2) most, 3) some, 4) just a little, and 5) none at all. The third dimension, which reflects excluding friends from excluding "friends" from selected groups, was measured with the following item: "Thinking about all the times you have blocked, hidden, or un-friended someone on a social networking site because of politics or political issues, were any of those people a member of your family or not?" (Family Member Exclusion); "were any of those people a close personal friend?" (Close Friend Exclusion); "were any of those people a more distant friend or acquaintance?" (Distant Friend Exclusion); "were any of those people someone who you have never met?" (Outsider Exclusion).

Offline Political Talk. Using a 4-point scale ranging from *very often* to *never*, offline talk was measured by asking "How often, if ever, do you talk about politics or current events with your family or friends?"

Political involvement was tapped by the following item: “Thinking about how using social networks affects your political views overall ... have you personally, ever become more active of involved in a political issue after discussing it or reading posts about it on a social networking site?” Political involvement was gauged with a yes/no question. A “yes” answer indicates that respondents think that social networks have a positive effect on increasing their level of political involvement.

Results

Focusing on the analytical sequence, descriptive statistics reveal that most participants (66%) reported engaging in at least one political activity on social media. Pearson correlations were computed to assess interrelations among focal constructs. The hypotheses were then tested via multiple regression analysis, using political involvement and political orientation level as dependent variables, respectively. The correlation results—described in turn—as well as the V.I.F indicators from the regression tests suggest that multicollinearity was not a problem.

Correlations among study variables are displayed in Table 1. Among key variables of interest, political orientation level ($M = .211$) is significantly correlated ($r = .23$; $p < .01$) with offline political talk ($M = 1.67$). Social network service evaluation is also significantly related to such SNS activities as political posting ($M = 3.93$) ($r = .64$, $p < .01$), peer political posting ($M = 3.16$) ($r = .42$, $p < .01$), and outsider exclusion ($M = 1.72$) ($r = -.13$, $p < .01$). In addition, offline political talk ($M = 1.67$) is significantly

Table 1
Correlations Among Study Variables (Fisher’s Z_r)

	M	SD	1	2	3	4	5	6	7
1. Political orientation level	2.11	.71	1						
2. SNS evaluation	2.74	.92	.07 (.07)	1					
3. Political posting	3.93	1.20	.12** (.12)	.64** (.64)	1				
4. Peer political posting	3.16	1.00	.18** (.18)	.42** (.45)	.48** (.52)	1			
5. Outsider exclusion	1.72	.45	-.13** (-.13)	.27** (.28)	.19** (.19)	.25** (.26)	1		
6. Offline political talk	1.67	.76	.23** (.23)	.41** (.44)	.42** (.45)	.37** (.39)	.02 (.02)	1	
7. Political involvement	1.55	.50	.13** (.13)	.35** (.36)	.28** (.29)	.24** (.24)	.17** (.17)	.29** (.30)	1

Note. M: Mean/SD: Standard Deviation
* $p < .05$, ** $p < .01$, *** $p < .001$. $N = 571$.

correlated with SNS political posting ($r = .42, p < .01$) and peer political posting ($r = .37, p < .01$). Finally, political involvement ($M = 1.55$) is found to be significantly correlated with offline political talk ($r = .29, p < .01$). Furthermore, the effect sizes of the significant correlations, which were converted from correlations to Fisher's Z_r , range from $-.13$ (between political orientation level and outsider exclusion) and $.64$ (between SNS evaluation and Political Posting). The correlations among variables and the effect sizes are shown in Table 1.

Hypotheses 1 to 6 were tested via logistical regression analysis. H_1 , which posits that political involvement is predicted by political orientation, was supported by logistical regression results presented in Table 2 ($\beta = .16, p < .05$). Results for testing H_2 , which postulates that social media evaluation is a predictor of political involvement ($\beta = .56, p < .001$), were statistically significant and provide support for the hypothesis. Statistical results for H_3 , which asserts that political posting is a predictor of political involvement, failed to attain significance or support the hypothesis. Likewise, H_4 , which assumes that peer political posting is positively related to political involvement, did not gain a statistically significant result, leaving H_4 without support. The results for H_5 , which states that outsider exclusion is a predictor of political involvement ($\beta = .56, p < .01$), were statistically significant and provided support for the Hypothesis. Lastly, H_6 presumes that offline political talk is a predictor of political involvement ($\beta = .51, p < .001$); the significant statistical results provided support for H_6 .

The next set of hypotheses was tested via multiple regression analysis, using political orientation level as a dependent measure (see Table 3). The overall equation was significant ($R^2 = .10$; Adj. $R^2 = .09$; $p < .001$). Political posting was a statistically insignificant predictor of political orientation level, leaving H_7 without support. Peer political posting is, however, a significant positive predictor of political orientation level ($\beta = .15, p < .001$), providing support for H_8 . Outsider exclusion is inversely related to political orientation level ($\beta = -.19, p < .001$), but the direction of causality is contrary to our expectations, leaving H_9 without support. Offline interpersonal communication about politics is a positive predictor of political orientation ($\beta = .16, p < .001$), providing H_{10} with support

Table 2
Results of logistical regression predicting political involvement

	Coefficient	SE	Wald	EXP(B)
Political orientation level	.16*	.07	4.94	1.17
SNS Evaluation	.56***	.14	17.14	1.75
Political posting	.02	.10	.04	1.09
Peer political posting	.08	.12	.50	1.09
Outsider exclusion	.56**	.21	6.76	1.74
Offline political talk	.51***	.14	13.34	1.67

Note. $B = .26$; $S.E. = .08$; $Wald = 9.11$ ($df = 1$), $p < .005$;

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

Table 3
Multiple Regression Predicting Political Orientation Level

	<i>B</i>	<i>S.E.</i>	<i>p</i>	<i>VIF</i>
Political posting	-.01	.06	.882	1.46
Peer Political posting	.15**	.08	.002	1.41
Outsider exclusion	-.19***	.14	.000	1.10
Offline political talk	.16***	.09	.000	1.33
Political involvement	.08	.13	.060	1.16

Note. Adjusted $R^2 = .10^{***}$
* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4
Multiple Regression Predicting Peer Political Posting

	<i>B</i>	<i>S.E.</i>	<i>p</i>	<i>VIF</i>
Political orientation level	.15***	.02	.000	1.04
SNS evaluation	.15***	.05	.001	1.77
Political posting	.33***	.04	.000	1.72
Outsider exclusion	.17***	.08	.000	1.10

Note. Adjusted $R^2 = .28^{***}$
* $p < .05$, ** $p < .01$, *** $p < .001$.

In addition, significant relationships among social network maintenance activities via SNSs—queried in RQ₁—explained a significant proportion of variance in peer political posting ($R^2 = .29$; adj. $R^2 = .28$; $p < .001$) (see Table 4). To begin, political posting is the most powerful predictor of peer political posting ($\beta = .33$; $p < .001$). The remaining variables in the equation are also significant positive predictors, including outsider exclusion ($\beta = .17$, $p < .001$), political orientation level ($\beta = .15$; $p < .001$), and SNS evaluation ($\beta = .15$; $p < .001$).

Moving to RQ₂, the predictive relations involving the dichotomous outsider exclusion measure were tested via logistical regression (Table 5). SNS evaluation emerged as the strongest predictor of outsider exclusion ($\beta = .52$; $p < .001$), alongside peer political posting ($\beta = .49$; $p < .001$). Political orientation level, however, was an inverse predictor of outsider exclusion ($\beta = -.26$; $p < .001$). Political posting also emerged as weak inverse predictor of outsider exclusion, although this relationship was not statistically significant.

Discussion

The present study set out to explore how one's online use of SNSs for political purposes transforms their political involvement, via a nationally representative sample. The

Table 5
Results of Logistical Regression Predicting Outsider Exclusion

	Coefficient	SE	Wald	EXP(B)
Political Orientation Level	−.26***	.06	17.27	.77
SNS Evaluation	.52***	.14	13.38	1.68
Political Posting	−.06	.11	.27	.94
Peer Political Posting	.49***	.12	17.40	1.63

Note: $B = .83$; $S.E. = .09$; $Wald = 82.57(df. = 1)$, $p. < .001$.

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

framework proposed here incorporates variables detected in previous research, such as political orientation, evaluation of online social networks and offline political talk. Study results suggest that online social network uses for political purposes predict political orientation level and political involvement. It should be noted that Pew’s definition of “political involvement” is really a self-reported behavioral measure of such involvement. Moreover, the term “political orientation level” closely approximates conceptions of “ideological strength” identified in the literature (e.g., Krosnick & Brannon, 1993). In both cases, the present findings support the well-established links with these markers—typically investigated with mass media—and extends them to the social media context.

Since the Democrats’ social network site deployment strategy proved successful in the 2008 and 2012 presidential election cycles, the potential for social network sites as a message dissemination tool seems to be acknowledged by conservatives as much as by liberals (e.g., Charles, 2012; Wooley et al., 2010). This broad-based appeal across these political partisans is borne out in the present data. In particular, political orientation level is significantly related with social network evaluation as a political tool. The evaluation of the social network services as effective instruments for political movements helps predict political orientation level. This finding seems consistent with some of the earliest work addressing the adoption of new media for political information—supporting a more active model of social influence—as when early adopters of earlier online applications were found to be more politically active (e.g., Nowak et al., 2010).

Study results also confirm past findings that positive attitudes regarding online social network services—particularly as a political tool—predict active social network activities for political purposes (Gustafsson, 2012). Technology innovation can neither be proliferated nor accepted without changing people’s attitudes towards an innovation (e.g., Lin & Atkin, 2007). Diffusion of innovations theory (Rogers, 2003), which predicts that people adopt technology innovations more rapidly when they discover the positive aspects of an innovation, can also help explain this dynamic. In addition, since the success of SNSs as a political tool was widely known to the public (e.g., Conroy et al., 2012), respondent attitudes about social network use may have been positively influenced. In particular, the positive relations found between political orientation (or depth of partisanship) and user evaluations of SNSs is consistent with past work (Williams & Gulati, 2013). These findings can be explained by the fact that

those expressing more positive attitudes toward social network sites as expressive political vehicles can be expected to be involved in more political activities like political message dissemination (e.g., de Zuniga et al., 2012; Mou et al., 2011).

The one counter trend to the positive set of interrelationships among social media and political activity variables studied here involves the inverse relationship between outsider exclusion and political orientation level (or partisanship). This finding suggests that partisans are less concerned about offending others with political posts, and—perhaps in the hopes of building support for their position—they see relatively little need to tailor their “mailing list” in order to avoid negative sanction from others. Such dynamics run counter to the spirals of silence (e.g., Noelle-Neumann, 1984) and online trust (Mou et al., 2013) uncovered in past work. One reason for this inconstancy might stem from the fact that Mou and colleagues’ work addressed online political discussion in an authoritarian context, where sanctions for speaking out on controversial issues can be much more severe. Later work might profitably explore the socio-political influences undergirding these online opinion spiral dynamics.

Study results also indicate that the more people use social networking sites for political purposes, the more often people engage in political activities with other people. This finding is consistent with previous research explaining that social network sites enhance offline social capital (e.g., Ellison et al., 2007), as social network developers were aiming to improve interpersonal relationships (e.g., Conroy et al., 2012). Consistent with past work (de Zuniga & Valenzuela, 2012), the overlap between online and offline social capital activities is also apparent in the relationship between online social network use and offline political talk. In the present context, use of SNSs to maintain (or develop) social capital for political purposes is predicting offline social capital activities for political purposes. This dynamic can be explained by past work showing that preexisting social capital powerfully predicts online social network development (e.g., Lin & Lu, 2011). Later work might profitably further explore reciprocal influences in these domains.

Of course, social network use for political purposes cannot be successful without interpersonal communication, which functions as a critical predictor of political involvement here. This confirms past work by Scheufele and colleagues (2002) indicating that interpersonal communication is the heart of democracy. As emerging wireless and telematic “intermass” channels continue to blur the distinctions between mass and interpersonal channels, it will be important to continue this research over time. Although advocates of a strong public sphere (e.g., Habermas, 1962) might regard these capital-building telematic affordances as a positive social force, it remains to be seen whether corollary “daily me” fragmentation effects (e.g., Bucy et al., 2007) ultimately undermine social cohesion and capital.

Social networking sites cannot, however, stand alone to achieve the lofty goals of cultivating political involvement and support. Campaigners hoping to harness the power of social media will need to re-imagine tasks for their supporters, perhaps channeling political social network use into interpersonal communication on political issues. The interrelationship between offline social capital and online social capital implies that political message dissemination strategies on social network services should be combined with activation strategies for offline political supporters

(e.g., Vitak, 2012). This is particularly important in the coordination of supporters' activities, which may be the key to effecting better outcomes in political movements.

With regard to research limitations, the reliance on several single item measures limits the reliability of study findings. Although social networking site evaluation was measured with multiple items, their number and scope was limited to those that could be expediently administered to assess the interests of the survey's sponsoring agency (Pew). A wider range of concepts could be measured in later work, including a greater breadth of items for social network service activities (e.g., outsider exclusion). And while the national survey provides a measure of external validity not common to more narrowly focused studies, the one-shot nature of this cross-sectional design leaves the direction of causality in question. Although the present findings on political posting behaviors—and the exclusion of outsiders from online social networks—can help encourage better outcomes in political movements, other activities bear further study. These might include, for instance, profiles on the different kinds of political posting, exclusion actions between family members or friends, and influences on sharing. Finally, later work should continue to build on past conceptions of political involvement, such as voting, membership in a political movement group, and making donations to political parties (Zhang et al., 2010). The identification of political actions as components of political involvement should help widen our understanding of this powerful, network-driven channel's influence on the political environment.

Notes

1. Putnam (1993, p. 167) further conceptualized social capital as a function of "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions." Also, Lin (2002, p. 3) explained that social capital involves "resources embedded in a social structure which are accessed and/or mobilized in purposive actions." The definitions can be summarized as follows: social capital involves resources that people can acquire through their interactions with others in society (Lin, 2002; Valenzuela et al., 2009).
2. Online social capital is similar to offline social capital in enabling people to utilize their social relations and influence to encourage others in their social circle to become involved with public issues (de Zuniga & Valenzuela, 2012). Here network size is strongly related to increased civic behaviors. Selected components of offline social capital are found in online social capital, such as trust and participation (Valenzuela et al., 2009). For both types of social capital, the duration of one's relationship as well as the frequency of communication tend to develop weak ties into strong ties (Chi, Chan, Seow, & Tam, 2009).

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Examining the World's Game in the United States: Impact of Nationalized Qualities on Fan Identification and Consumption of the 2014 FIFA World Cup

Michael B. Devlin^{ID} and Andrew C. Billings

To explore the role of media consumption as it relates to impressions of one's nation, data were collected using a nationally generalizable sample of 979 American citizens over 6 different collection points before, during, and after the 2014 FIFA World Cup. Results showed a relationship between 4 nationalized qualities (patriotism, nationalism, smugness, and internationalism) and amount of World Cup media consumption. However, these reported qualities fluctuated very little over time, indicating that nationalized qualities are very hard-wired for most individuals, likely serving more as predictors of sports media consumption than effects of it. Relationships were also found between nationalized qualities and levels of fan identification toward the U.S. Men's National Team. Conclusions related to applications to social identity theory and several other potential influences are articulated.

Megasports are described as sporting spectacles in which people regularly set their internal sports calendar for media consumption (Eastman, Newton, & Pack, 1996). Some events are short in duration (horse racing's Kentucky Derby, for instance, lasts a mere two minutes) while others are more enduring. Both the Olympics and NCAA basketball's March Madness, for example, garner strong American interest for nearly three weeks. One event, however, is oft-labeled the "World's Game," with an ultimate event contested every four years for a solid month: the World Cup. American interest and involvement in the World Cup is often mocked facetiously when compared to most of the world (Bennett, 2014), despite a steadily rising U.S. audience. Disney, ESPN's parent company, reported total viewership through the first 60 matches of 2014 increased 42% from the 2010 World Cup, and the 64 matches on ESPN averaged close to 4.5 million viewers (Boudway, 2014).

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Additionally, the 2014 U.S. vs. Ghana match received a 6.3 rating and 11 million viewers, ESPN's highest-rated and most-viewed telecast since the college football National Championship game six months earlier (Brown, 2014). Furthermore, the U. S. vs. Portugal game attracted 18.2 million viewers, the second-most- watched World Cup game on ABC of all time (Cardillo, 2014).

Previous analyses of international megasporting event effects have predominantly been relegated to the Olympics (see Billings, Brown, & Brown, 2013), revealing differences between heavy and light viewers and their scores rendered on scales of nationalized qualities. Moreover, van Hilvoorde, Elling, and Stovkis (2010) found that degree of success in a sporting context could impact the degree of nationalized feelings, while other analyses (Billings, Brown, & Brown, 2013) found that while nationalized qualities were significantly different depending on the amount of sports media consumed, such qualities did not build over the course of time. However, the aforementioned studies examined an international event featuring a plethora of sporting contests, permitting several different opportunities for fan involvement and identification. Despite this recent work related to sports media consumption and its relationship with nationalized qualities, scholars need to delineate several potentially contributing factors to one's sense of identity during an international event: (1) the success/failures of the team or nation, and (2) the individual's sense of fan identification to a team, and (3) the identification to an individual sport. Studies examining the World Cup specifically have pinpointed how media may influence identity either through disproportionate media coverage (Billings & Tambosi, 2004) or racial and nationalized narratives rooted in stereotypes (Tudor, 1992). Such studies suggest that the content is engrained in nationalistic identity, yet the influence and effects of such identity has been relatively under-examined.

The present study expands knowledge within these three areas by examining an extended-duration, singular-sport event: the FIFA World Cup. The 2014 World Cup provides a unique opportunity for researchers to examine how media consumption and fan identification of a singular sport (soccer) impact nationalized attachments, as well as delineate how success (wins) or failure (much more easily defined in a World Cup than in an Olympic Games via team elimination) potentially affect nationalized qualities. After the first round of play, half of the teams participating in the World Cup are eliminated before the conclusion of the event, possibly affecting consumption and reports of nationalized feelings. More specifically, the U.S. Men's Soccer team has only qualified for half of all contested World Cups, finishing higher than 10th place on just two occasions. As such, studying American responses within the 2014 World Cup (where the U.S. was eliminated from the tournament in the Round of 16) provides a useful contrast with previous work related to the Olympics (where the U.S. routinely wins more medals than all other nations and is consistently represented through the Closing Ceremonies). Lastly, relationships between team-oriented fan identification and nationalized qualities will be explored to determine its role in the overall formulation of nationalized judgments.

In sum, this study utilizes a nationally representative sample of 979 U.S. respondents throughout six different time frames (an average of 163 each time) before,

during, and after the World Cup to determine joint effects on issues of nationalized feelings, sports media consumption, and fan identification to soccer's U.S. Men's National Team (USMNT).

Literature Review

Theoretical Connections

Deriving from social identity theory (Tajfel & Turner, 1986), self-categorization is frequently employed to explain how individuals cognitively place themselves into various groups through identity-oriented and socially defined understandings. One may identify with another individual or group based on associations ranging from ethnicity to shared activities. Self-categorization also pertains to development of cognitively defined out-groups as well. In-groups frequently activate reasons to distance themselves from these out-groups based on notions of difference within those same associations.

Thus, self-categorization has been developed to extrapolate upon both upward contacts and downward comparisons (Taylor & Lobel, 1989) utilized to form both in-groups and out-groups, making this theory exceedingly useful for the exploration of the issues embedded within the current study. For instance, several groups are simultaneously activated within a single case of international sports media consumption, as people may identify with one's home country (U.S.), one's home country's team (U.S. Men's National Team), and the sport in which that country's team is playing (soccer), with different magnitudes that may or may not positively correlate. Moreover, the amount of media consumption could alter the degree in which the viewed performance within an event like the World Cup alters the preconceived levels of associations in which a fan enters the viewing experience, mainly because "the media do not simply report a mega-event, such as the FIFA World Cup, but also frame and interpret how the tournament, and the country that stages it . . . is viewed internally, and on a global stage" (Maguire, 2011, p. 681). As such, deciphering these related yet distinct variables of national associations and fan identification based on consumption of mediated content should offer considerable insight into the formation of in-groups and out-groups within the schema of theoretical understandings of self-categorization.

Nationalized Qualities

Scholars have increasingly focused on the joint role of sport and nationalism, as both are viewed as "products of modernity . . . fanned out to the rest of the world through imperialism and colonialism" (Chiang & Chen, 2013, p. 2). Bairner (2001) claims that "sport and nationalism are arguably two of the most emotive issues in the modern world" (p. xi), with analyses of the pairing justifying his claim.

In 1928, American Olympic Committee president Douglas MacArthur claimed that “everything you say and everything you do . . . will reflect on your country” (DeFrantz, 1988, p. 9), and sports media analyses have unfolded showing how this can be the perceived case. Real (1989) reported that media tends to disproportionately focus on one’s home nation when compared to that nation’s successes, with most nations doing so at an exponential level. Within the U.S. Olympic telecast, for instance, Americans received 55.8% of all primetime coverage in the 2012 London Games, more than all other nations combined while being shown nearly 500 percent more than their medal successes would otherwise warrant (Billings, Angelini, MacArthur, Smith, & Vincent, 2014). Such disproportionality was also found in 2002 World Cup, with the U.S. team receiving more coverage than eventual champion, Brazil (Billings & Tambosi, 2004). Commentator discourse is arguably designed to bolster nationalistic appeal to television audiences to influence consumption (Scott, Hill, & Zakus, 2011).

Such content analyses inform effects studies, with Elling, van Hilvoorde, and van den Dool (2014) arguing that nationalism is a relatively stable trait in the Netherlands, with sport only temporarily impacting one’s feelings toward their home nation. However, Billings, Brown, Brown, Guo, and colleagues (2013) studied six nations (Australia, Bulgaria, China, Netherlands, Slovenia, and the United States), revealing differences in each nation’s response to nationalized qualities depending on the amount of Olympic media consumed, suggesting media consumption affects shaping one’s social reality. In the United States, individuals consuming higher amounts of the Olympic media displayed higher levels of internationalism, patriotism, nationalism, and smugness, with smugness growing over time (as the U.S. was revealed to “win” the medals race in the 2012 London Summer Games); meanwhile in China, only one of these four factors, internationalism, was influenced by the amount of media consumption of their government-sponsored CCTV media rendering of the Games.

The four dimensions of nationalistic qualities used in the Billings and colleagues (2013a, 2013b) study are pertinent to explore a different international sporting event such the World Cup. The first three qualities can be operationalized at least partly in relation to each other. *Patriotism* implies pride in one’s own nation without reference to any other nation; *nationalism* implies that one’s home nation is demonstrably superior to another nation within a self-categorized comparison; *smugness* relates to the belief that one’s home nation is superior to all other nations and that, moreover, other nations should aspire to be more like one’s home nation. Simply put, patriotism argues: “my country is good;” nationalism argues: “my country is better;” smugness argues: “my country is best.” From a theoretical perspective, patriotism utilizes only upward contacts, while nationalism and smugness activate both upward contacts and downward comparisons to form judgments.

The final quality, *internationalism*, is unpacked as a sense of global citizenship, with people scoring high in this trait being more likely to believe international sporting events are more about global festivals of togetherness and celebration than pitted rivals competing for titles and trophies.

Fan Identification

Social identification theory posits that people tend to classify themselves into similar-type groups (Turner, 1985), allowing for vicarious group participation (Katz & Kahn, 1978). An international mega-sporting event such as the World Cup allows for the formation of distinct groups based on ones' national identity, providing an opportunity for researchers to expand social identification theories by exploring the related concept of fan identification. The formation of in-groups may develop across multiple activities, with sport serving as one example from which individuals associate themselves as a member of a self-designated in-group, deriving group affiliation benefits in the process (Cialdini & Richardson, 1980).

Although tenets of social identification and fan identification are similar and often strongly correlate (Branscombe & Wann, 1991), fan identification differs by suggesting that when individuals identify with a sports team, "the extent to which a fan feels a psychological connection to a team and the team's performances are viewed as self-relevant" (Wann, 2006, p. 332). This perception creates an emotional ownership of the team, frequently leading to internalization of their team's performance as reflecting their own (Donavan, Carlson, & Zimmerman, 2005), sharing the team's victories and losses as if they were integrally involved in the result. Results of fan identification and fandom have produced results showing differences in physiological changes (Branscombe & Wann, 1992), as well as the development of in-groups and out-groups (Ashforth & Mael, 1989; Branscombe, Ellemers, Spears, & Doosje, 1999; Jetten, Spears, & Manstead, 1999).

The concept of in-group and out-group formation is increasingly important in relation to sports as research shows competitive reward strengthens membership, causing in-group favoritism (Tajfel, 1981) and sharpening out-groups distinctions (Brewer, 1979). Positive distinctions further aid in the formation of in-group designations, particularly when negative perceptions of rivals and out-groups are used to strengthen in-group associations and distinction (Wann & Dolan, 1994). Research has highlighted the importance of in-group formation for fan identity, citing that it aids searches for information about the in-group and its rivals while recruiting others to positively alter public evaluations of their perceived in-group (Lock, Taylor, Funk, & Darcy, 2012). By increasing associations with a winning group, an individual boosts self-esteem (Cialdini et al., 1976), emphasizing positive aspects of the group (team) while minimizing negative information (Wann & Branscombe, 1993). Given that sport inherently provides opportunities for in-group recruitment and associations, international sport competitions further provide opportunities for associating with in-groups and disassociating within out-groups through the sport, team, and the nations they represent.

Fan identification is based on three tenets: (1) perception of belonging with the group (Turner, 1985), (2) acting congruently with the group's identity by reinforcing antecedents of identification (Brown, Devlin, & Billings, 2013) (3) and categorizing the group based on distinctiveness and prestige (Chatman, Bell, & Shaw, 1986). Perception of belonging with the group is based upon the individual's ability to classify themselves—and others—into various groups defined by identifying prototypical characteristics

abstracted from the group's members (Turner, 1985)—such as “American” in the case of the World Cup. The individual emphasizes which categories are most relevant to their identity, leading to organizational commitment (Spears, Doosje, & Ellemers, 1999) and willingness to exert effort on behalf of the group to maintain membership (Reichers, 1985). Team identification is fostered through interactions with others as a result of exposure to the sport (Funk & James, 2001), explaining why companionship is a common motivation for consuming mediated sports (Dietz-Uhler, Harrick, End, & Jacquemotte, 2000; Gantz & Wenner, 1991; Wann et al., 2001), and why repeated exposure can foster the socialization process.

Consumption Habits. Raney (2006) explained *why* individuals consume sport using the uses and gratifications approach; however, fan identification may be equally as useful for understanding consumption habits (see Wann & Branscombe, 1990; Wann & Branscombe, 1993; Wann & Dolan, 1994). Not surprisingly, research has found that highly identified sports fans reported heightened desires to watch televised games involving their favorite team more than contests involving teams in which they did not identify (Mahony & Howard, 1998). Consumption may largely be a byproduct of the socialization process, suggesting that team identification is fostered through repeated exposure to the sport (Wann, 2006), thus supporting the second tenet of identification: reinforcing antecedents of identification to act congruently with the group's identity. Mass communication and repeated exposure to the team via media serves as a powerful tool in the socialization process, thereby increasing team identification, resulting in greater likelihood to voluntarily expose oneself to events involving the target team in the future (Fisher & Wakefield, 1998; Wann & Branscombe, 1993; Wann, Melnick, Russell, & Pease, 2001).

Hypotheses/Research Questions

Significant evidence suggests that increased consumption of international competition leads to elevated levels of identification across different categories. While the World Cup is demonstrably different than past analyses of international sport because it features only one sporting event, core concepts of nationalism still persist; therefore, the following hypotheses are postulated predicting some commonality among international sports media events:

H₁: Highly-identified fans of the USMNT will consume more World Cup television coverage than low-identified fans of the USMNT.

H_{2a}: Respondents consuming high amounts of World Cup media will score significantly higher on measures of patriotism than will respondents with lower levels of World Cup media consumption.

H_{2b}: Respondents consuming high amounts of World Cup media will score significantly higher on measures of nationalism than will respondents with lower levels of World Cup media consumption.

H_{2c}: Respondents consuming high amounts of World Cup media will score significantly higher on measures of smugness than will respondents with lower levels of World Cup media consumption.

H_{2d}: Respondents consuming high amounts of World Cup media will score significantly higher on measures of internationalism than will respondents with lower levels of World Cup media consumption.

Prior scholarship indicates that nationalism is often stable and only slightly impacted by media consumption of international sporting events over time (Elling et al., 2014), suggesting that any increase of nationalism during the World Cup will be short-lived, returning to a baseline shortly after an event concludes. Therefore, the following hypotheses are posited:

H_{3a}: Reported levels of patriotism will peak during the World Cup in comparison to both before and after the competition.

H_{3b}: Reported levels of nationalism will peak during the World Cup in comparison to both before and after the competition.

H_{3c}: Reported levels of internationalism will peak during the World Cup in comparison to both before and after the competition.

Billings and colleagues (2013a) found that U.S. viewers of the Olympic games increased levels of smugness, acknowledging the positive correlation to U.S. medal count increase throughout the tournament. Unlike the Olympic Games—where the United States routinely performs well—the USMNT has an average finish of 19th out of 32 the last six World Cups, with a loss in the Round of 16 in 2014. Given the relatively unexplored terrain of an international sport in which the U.S. does not traditionally excel, the following research question is posed regarding smugness.

RQ₁: How will smugness scores fluctuate throughout the United States' progress in the World Cup?

Fan identification scholarship also posits that fan identification will increase affiliation and group behaviors (Wann, 2006) and that formation of in-groups serve as antecedents of fan identification (Wann & Dolan, 1994). Therefore, the following relationships are hypothesized related to the U.S. Men's National Team (USMNT):

H_{4a}: Highly identified fans will report higher patriotism scores than low identified fans.

H_{4b}: Highly identified fans will report higher nationalism scores than low identified fans.

H_{4c}: Highly identified fans will report higher smugness scores than low identified fans.

H_{4d}: Highly identified fans will report higher internationalism scores than low identified fans.

Method

An online survey was distributed at six different time periods: (1), before most media coverage or promotion for the event—approximately 10 weeks before the World Cup's commencement (March 24–26), (2) at the start of ESPN's World Cup television media coverage and promotion, but prior to the U.S. Team's first game (June 11–13, 2014), (3) after the U.S. team's first match (a win) against Ghana (June 16–June 20, 2014), (4) after the U.S. team advanced to the round of 16, but before the elimination match (June 27–June 30, 2014); (5) immediately following the USMNT's elimination from the World Cup (July 2–3, 2014), and (5) one month after the World Cup concluded (August 10–14, 2014), after media attention and news coverage of the event subsided and before other international sporting events (i.e., the Little League World Series). The first and last data collections were used to establish a baseline and then measure potential lingering effects, respectively. Both the first and last data collection took place during the absence of any other major international sporting events.

Survey measures examined the relationship between World Cup television consumption (including live Internet streaming), fan identification, and nationalistic attitudes. Qualtrics, a web-based survey research company, was utilized to employ a panel service ensuring a representative national sample at all six data points. Participants were recruited through self-registration with the Web site and received cash-equivalents (points) to be exchanged for consumer goods. Qualtrics has been widely used for survey and experimental research in a variety of disciplines including psychology, management, and marketing for its high-quality selection of targeted participants.

Six samples were used to draw comparisons of nationalistic attitudes prior to the World Cup coverage, throughout the USMNT's tournament progression, after the United States' elimination, and after the World Cup concluded for all nations.

Questionnaire and Procedure

A new sample was recruited during each data collection phase to prevent demand effects from repeated exposure to the questionnaire, as conducted in previous studies

(see Billings et al., 2013a, 2013b). Participants recruited through Qualtrics were prompted to visit a Web address directing the participant to the questionnaire consisting of three parts: (a) nationalistic quality scales, (b) sport spectator identification scale, and (c) World Cup television and live Internet-streaming consumption habits. The nationalism section utilized Kosterman and Feshbach's (1989) scale with sport-specific items added by Billings and colleagues (2013a, 2013b). The scale contained 24 items measuring four nationalistic qualities: patriotism, nationalism, smugness, and internationalism. Each of the four qualities was measured using a 6-item, 7-point Likert scale. The second section featured 6 items from Sport Spectator Identification Scale (Wann & Branscombe, 1993) assessing fan identification of the USMNT. Finally, participants indicated their World Cup-related television and live Internet streaming consumption by selecting the average daily amount of consumption in 30-minute categorical increments (none, less than 30 minutes, 30–60 minutes, etc.). Measures included televised game consumption, and ancillary media content, including pre- and post-game analysis, and news coverage. For this study, only passive mediated consumption such as television and live Internet streaming was measured. Active media use, such as posting and following on social media platforms, such as Twitter or Facebook, was not measured in the current study. Individuals may engage in active media while simultaneously consuming television, or in lieu of passively consuming television. Because of this dynamic and the possibility for some to count active and passive consumption separately and others jointly, thus contaminating consumption measures, participants were only asked to include time spent consuming passive media (television and live streams) to provide a reliable and precise measure for the present study. Participants were asked to treat television and live Internet streaming as the same, as content for both were identically offered via ESPN, albeit for different screen formats (a computer monitor versus a television screen).

Cronbach's alpha measured the reliability of the four nationalism scales adopted from Kosterman and Feshbach (1989) and Billings and colleagues (2013a, 2013b). All four scales, patriotism ($\alpha = .92$), nationalism ($\alpha = .80$), internationalism ($\alpha = .82$), and smugness ($\alpha = .89$) were considered reliable, exceeding the standard accepted threshold of .70. The Sport Spectator Identification Scale also yielded high reliability, achieving an alpha coefficient of .95 using five of the 6 items. One item, "How much do you dislike USMNT's rivals" was dropped to increase reliability from $\alpha = .89$, despite exceeding the standard .70 alpha coefficient threshold.

Results were then migrated into SPSS for Mac, Version 20 where statistical calculations were computed in regard to the hypotheses and research questions.

Results

A total of 979 different respondents answered the questionnaire from the first to last time periods. All participants were self-identified legal U.S. citizens, with genders being equally represented (488 males; 491 females). The sample from the first data collection point consisted of 130 individuals. The second sample consisted of 180; the third consisted of 180; the fourth consisted of 174; the fifth consisted of 186; and

the final sample consisted of 129 participants. Nearly one-third was college educated ($n = 288$; 29.4%), and the large majority was White ($n = 803$; 82%), approaching national demographic proportions (United States Census Bureau, 2014). Thirty-three (3.4%) respondents in the sample were between 18 and 24 years old, 161 (16.4%) were from the 25–34 age group, 193 (19.7%) from the 35–44 age group, 243 (24.8%) were in the 45–54 age group, 272 (27.8%) were in the 55 to 64 age group, and 77 (7.9%) were in the 65+ age group.

The participants taking the survey after the start of the World Cup (data collection points 3–6) were divided into two groups (high consumers and low consumers) using a median split of World Cup television consumption. Low consumers were operationally defined as those consuming less than one hour of World Cup television content on average each day, and high consumers were those who reported consuming an average of one or more hours each day. Given that the average game lasts approximately two hours (halftime included) and there was typically more than one game per day, the division was justified assuming low consumers would watch less than a single game, whereas their high-consuming counterparts would watch at least one full game and/or ancillary media content. Using the operation of time consumed rather than the amount of matches watched permitted participants to accurately reflect partial or interrupted consumption of World Cup media, and to address the amount of consumption during simultaneously aired matches.

Of the 669 participants from the eligible time periods, 340 (50.8%) were low consumers and 329 (49.2%) were high consumers.

Impact of World Cup Consumption on Nationalistic Attitudes

H_1 predicted that highly identified fans of the USMNT would be more likely to consume high levels of World Cup television coverage than would low-identified fans. To assess this, three categories of fan identification (low, medium, and high) were created using a tripartite data split. Low-identified fans were categorized as those scoring a 1.25 or less on a 7-point scale, yielding 358 subjects (36.6%). Moderate fans were categorized as those who reported identification scores between 1.26 and 4.0 on a 7-point scale, yielding 309 subjects (31.6%). Lastly, highly identified fans were categorized as those scoring 4.1 or higher on the 7-point scale, yielding 312 subjects (31.9%).

A chi-square goodness-of-fit revealed significant differences between the groups ($\chi^2 = (2, N = 669) = 167.19, p < .001$). Consistent with the hypothesis, the findings showed that as the level of fan identification increased, the amount of consumption also increased. Only 7% ($n = 47$) of the sample were recognized as low-identified fans who consumed high amounts of television coverage, which is inversely related to the amount of highly identified fans who consumed high amounts of World Cup television coverage $n = 188$ (28.1%). This amount was significantly higher than the amount of moderate fans that consumed high levels of World Cup coverage ($n = 94$,

Table 1
Mean Scores for Nationalistic Attributes by Consumption

Nationalistic Attribute	Consumption Level	<i>n</i>	Mean	SD
Patriotism	Low	340	5.68*	1.15
	High	329	6.03*	0.94
Nationalism	Low	340	4.44*	1.09
	High	329	4.87*	1.12
Smugness	Low	340	4.60*	1.30
	High	329	4.96*	1.23
Internationalism	Low	340	3.61*	1.20
	High	329	4.22*	1.28

Note. Nationalistic measures were measured on an 7-point scale with 1 being least nationalistic and 7 being most nationalistic.
* $p < .001$

14.1%). As predicted, the highest percentage of all low consumers ($n = 340$) were low identified fans ($n = 182$, 27.2%), followed by moderate fans ($n = 112$, 16.7%), leaving a small sample of low consuming, highly identified fans ($n = 46$; 6.9%). H_1 is supported.

H_2 predicted that consumption of televised World Cup content would increase nationalistic attitudes across the four measures: nationalism, patriotism, smugness, and internationalism. Only data from the third through the sixth were used in this portion of the analysis because the first two data points occurred before the commencement of the World Cup. For each sub-hypothesis, a t -test measuring differences in means between media consumption level was used, followed by a simple linear regression to conclude if consumption was a predictor for nationalistic attitudes. Table 1 reports the means for each measure by high and low media consumption.

H_{2a} predicted that consuming high amounts of World Cup coverage would increase patriotism scores. Significant differences occurred between the low consumers ($M = 5.68$; $SD = 1.15$) and high consumers ($M = 6.03$; $SD = 0.94$), $t(667) = -4.40$, $p < .001$. Further analysis was conducted to test the relationship between consumption and patriotism. A simple linear regression concluded that increased consumption of World Cup television content was a predictor for increased patriotism ($R^2 = 0.028$, $F(1, 667) = 19.26$, $p < .001$, $\beta = .15$, $p < .001$). H_{2a} is supported.

H_{2b} stated that higher consumption of World Cup television coverage would increase reported measures of nationalism. There was a significant difference in nationalistic scores between high consumers ($M = 4.87$; $SD = 1.12$) and low consumers ($M = 4.44$; $SD = 1.09$), $t(667) = -5.09$, $p < .001$. Furthermore, heavy consumption of televised World Cup content was a significant predictor for nationalism measures ($R^2 = 0.037$, $F(1, 667) = 25.95$, $p < .001$, $\beta = .19$, $p < .001$). H_{2b} is supported.

H_{2c} predicted that World Cup television consumption would increase levels of smugness. A t -test revealed significant differences between the high World Cup

consumers ($M = 4.96$; $SD = 1.23$) and low World Cup consumers ($M = 4.60$; $SD = 1.30$), $t(667) = -3.63$, $p < .001$. Subsequent analysis using simple linear regression revealed that high consumption was a significant predictor for increased smugness measures ($R^2 = 0.019$, $F(1,667) = 13.15$, $p < .001$, $\beta = .14$, $p < .001$). H_{2c} is supported.

Finally, H_{2d} predicted that high levels of World Cup consumption would increase internationalism measures. Results showed significant differences between the groups, $t(667) = -6.39$, $p < .001$, with high consumers of World Cup televised content reporting higher internationalism scores ($M = 4.22$; $SD = 1.28$) than low consumers ($M = 3.61$; $SD = 1.20$). Additionally, increased consumption was a significant predictor for increased internationalism scores ($R^2 = 0.056$, $F(1,667) = 40.86$, $p < .001$, $\beta = .25$, $p < .001$), supporting H_{2d} .

Effect of World Cup Media Coverage on Nationalistic Attitudes

The third hypothesis predicted that three of the four nationalized qualities (patriotism, nationalism, and internationalism) would be impacted by media coverage of international sports, meaning self-reports would be at their highest during the World Cup, decreasing after the event concluded. Figure 1 illustrates the general inertia for all four qualities over the six different data collection points.

Figure 1
Nationalistic attitudes over time. Nationalistic measures were measured on a 7-point scale with 1 being least nationalistic and 7 being most nationalistic.

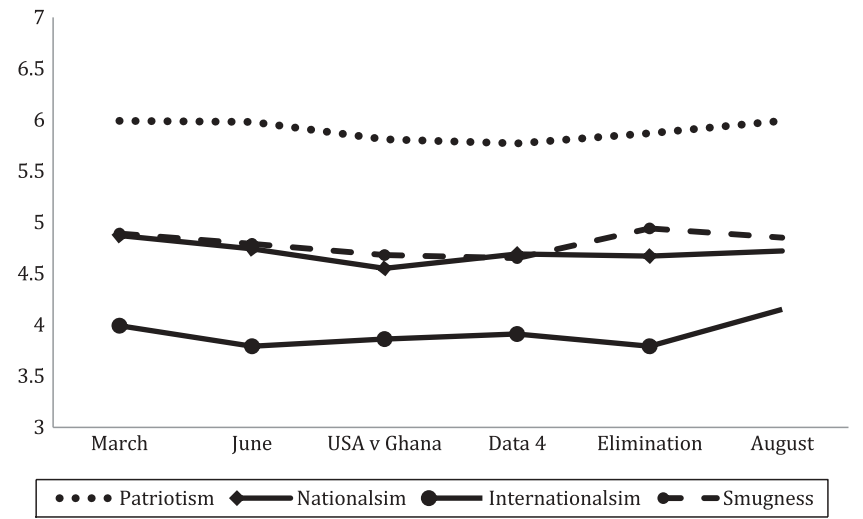
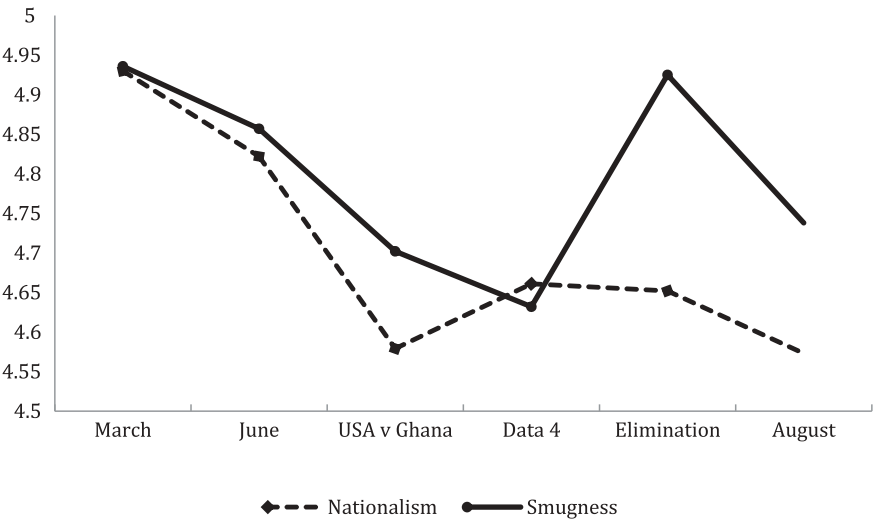


Figure 2
Nationalistic attitudes over time when controlling for fan identification.
Nationalistic measures were measured on a 7-point scale with 1 being least nationalistic and 7 being most nationalistic.



Beyond the visual results displayed in Figure 1, an ANOVA was used to test time's effect on nationalistic attitudes. No significant differences occurred between the data points (beginning, during, or end) for nationalism, patriotism, or internationalism. No support was indicated for H_{3a} , H_{3b} , and H_{3c} .

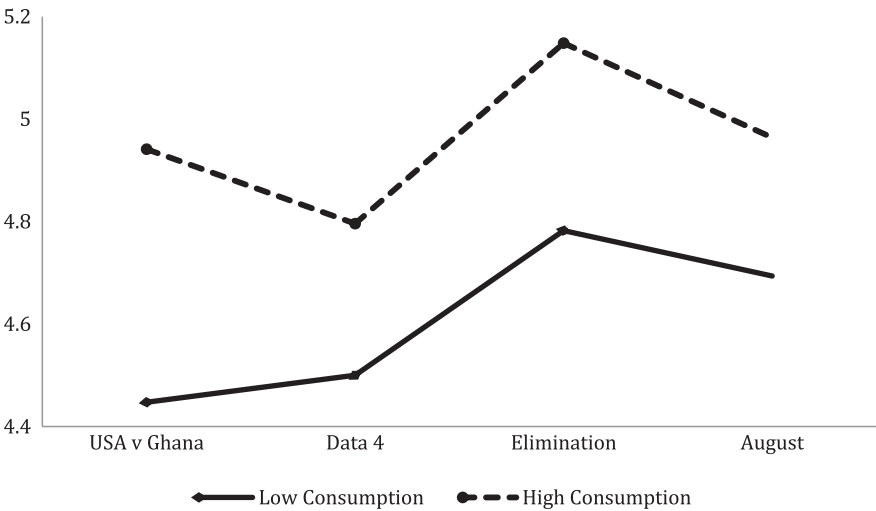
Ancillary analysis was conducted using an ANCOVA with fan identification as a covariate to test the three parts of H_3 . Time's effect on patriotism and internationalism scores, H_{3a} and H_{3c} respectively, was non-significant when adjusting for fan identification scores; however, nationalism scores were impacted by time when adjusting for fan identification as a covariate ($F(5, 978) = 2.59, p < .05, \eta^2 = 0.13$). As shown in Figure 2, after controlling for fan identification levels, nationalistic mean score decreased as the tournament progressed.

The highest nationalism scores were reported in late March ($M = 4.93$; $SD = 1.12$), over two months prior to the World Cup, progressively declining to its lowest point during the tournament after the U.S. vs. Ghana match ($M = 4.58$; $SD = 1.13$). Nationalism scores increased slightly after the U.S. team advanced to the elimination round ($M = 4.66$; $SD = 1.15$) before reaching its lowest overall point in August after the World Cup concluded ($M = 4.57$; $SD = 1.00$).

Related to the measure of smugness, RQ_1 queried whether significant differences between smugness scores would exist throughout the progression of the tournament. An ANOVA tested the effect of World Cup coverage on smugness. A one-way

Figure 3

Comparison of consumption levels on smugness over time. Nationalistic measures were measured on a 7-point scale with 1 being least nationalistic and 7 being most nationalistic.



ANOVA did not reveal any significant effects of smugness scores over time. However, a subsequent ANCOVA, using fan identification as a covariate, revealed a significant difference in smugness over time ($F(5, 978) = 1.577, p < .001, \eta^2 = 0.07$). As shown in Figure 2, smugness scores decreased steadily from March ($M = 4.89; SD = 1.40$) to the lowest point following the loss to Germany, which was also still coincided with the positive result of advancing to the second round ($M = 4.65; SD = 1.38$). Interestingly, smugness scores increased to the highest levels after the U. S. team was eliminated from the tournament ($M = 4.94; SD = 1.30$), providing a very convoluted answer to RQ₁. Subsequent factorial analysis of variance tested differences in the means based on amount of consumption over time. As shown in Figure 3, no interaction effect was revealed; however a main effect for consumption was found ($F(1,668) = 12.93, p < .001, \eta^2 = .02$). Similar to H₂, viewers labeled as low media consumers reported lower smugness levels ($M = 4.61; SE = 0.07$) than high consumers ($M = 4.92; SE = 0.07$).

Relationship Between Fan Identification and Nationalistic Measures

Finally, the four-part H₄ predicted fan identification toward the USMNT would result in an increase on the four nationalistic measures. A comprehensive display of all means is reported in Table 2.

Table 2
Mean Scores for Nationalistic Attributes by Fan Identification

Nationalistic Attribute	Fan Identification Level	<i>n</i>	Mean	SD
Patriotism	Low	358	5.58*	1.37
	Moderate	309	5.98*	0.85
	High	312	6.17*	0.86
Nationalism	Low	358	4.32*	1.25
	Moderate	309	4.61*	0.95
	High	312	5.21*	1.06
Internationalism	Low	358	3.36*	1.24
	Moderate	309	3.79*	1.10
	High	312	4.63*	1.16
Smugness	Low	358	4.46*	1.44
	Moderate	309	4.78*	1.20
	High	312	5.19*	1.20

Note. Nationalistic measures was measured on an 7-point scale with 1 being least nationalistic and 7 being most nationalistic.
* $p < .00$

A one-way ANOVA was used to test differences of nationalistic attributes between the three levels of USMNT fan identity (high, moderate, low). Results showed differences in the means for patriotism ($F(2, 976) = 26.16, p < .001, \eta^2 = .05$), nationalism ($F(2, 976) = 56.42, p < .001, \eta^2 = .10$), internationalism ($F(2, 976) = 100.32, p < .001, \eta^2 = .17$), and smugness ($F(2, 976) = 26.54, p < .001, \eta^2 = .05$) for each level of fan identification.

As predicted, highly identified fans reported the highest level of patriotism ($M = 6.17$; $SD = 0.87$), nationalism ($M = 5.22$; $SD = 1.06$), internationalism ($M = 4.63$; $SD = 1.16$), and smugness ($M = 5.19$; $SD = 1.20$). These were significantly different than the low identified fans that reported the lowest scores for patriotism ($M = 5.58$; $SD = 1.37$), nationalism ($M = 4.32$; $SD = 1.25$), internationalism ($M = 3.36$; $SD = 1.25$), and smugness ($M = 4.46$; $SD = 1.44$). H_4 is supported.

Discussion

The 2014 World Cup was ESPN’s most-viewed and highest-rated telecast ever; audiences of such magnitude provide a serendipitous opportunity for testing sport content-based theories which have been previously applied only to Olympic studies (Billings et al., 2014). While the World Cup is similar to the Olympics in the sense that it focuses on an international sporting competition, it is important to consider that the World Cup still functions differently, as a series of “team versus team” singular

competitions within a much more limited framework of “nation versus nation.” The present study sought to better understand how consumption of a singular international sporting event, the World Cup, would affect nationalistic measures—patriotism, nationalism, smugness, and internationalism—facilitating understanding as to how team-based in-group fandom interweaves with national attitudes.

Three variables were measured in relation to international-sport television consumption for this analysis: (a) attitudes regarding nationalism, (b) fan identification towards the U.S. team competing in the World Cup, and (c) the passage of time before, during, and after the month-long tournament. The combination of results related to consumption and nationalism yield robust and intriguing findings. Some mirror findings of previous studies examining the Olympics; others offer new insights pertaining only to a singular sport or team, warranting further investigation.

From a theoretical standpoint, one macro-level insight may be that the passage of time largely did not yield significant differences, yet the amount of media consumed and levels of fan identity with the USMNT did result in significant findings. When taken collectively, these results suggest that repeated media exposure of the World Cup alone did not make one more likely to score highly on the four measures of nationalized qualities. Regarding fan identification, this study seemingly confirms the role of social identity groupings, as the more respondents identified with the USMNT, the more they watched and the higher nationalized quality scores became. However, regarding media consumption, this study lends some credence to the notion that international sports media undergird conceptions of affective disposition theory (Zillmann & Cantor, 1977), which has been expanded to explain how we enter mediated experiences with “cognitive pegs upon which to hang their initial interpretations and expectations of characters” (Raney, 2004, p. 354). These initial tendencies for or against a predictably heightened nationalized product such as the World Cup seem to have a more profound factor on predicting nationalized quality scores than the actual consumption of the games within an international sports media event.

Beyond these theoretical observations of the macro-level results, insights can be gleaned from each level of the study. First, and perhaps the least surprising finding of this study, was that highly identified fans of the USMNT consumed more World Cup television content than did low-identified fans, providing evidence for a link between social identity and fan identity theories. Such evidence suggests that people will act on behalf of the organization (Spears et al., 1999) and are willing to exert effort on behalf of the group to maintain membership (Reichers, 1985). Differing from an Olympic telecast that offers a plethora of sports to attract and engage audiences, the World Cup offers only soccer—a sport which is not even one of the top five sports in terms of American media popularity, falling considerably behind football, baseball, basketball, hockey, and auto racing according a recent Harris poll (Rovell, 2014). However, the impact of fan identification as a covariate in other subsequent levels of analysis reveal far less homogeneity of results than the simple linear positive relationship between fan identification and World Cup media consumption.

Moving to the relationship between sports media consumption and nationalized qualities, all four parts of H₂ were supported, suggesting an observable effect. The present study suggests media consumption influences nationalized attitudes reported during international sporting competition; but the larger question becomes one of order, as it is unclear whether qualities are formed *before* individuals decide whether to consume this international sports media product, rather than the attitudes *arising from* heightened media consumption, warranting further exploration.

Related to this assumed ordering, the lack of influence of time on nationalistic attitude formation is an interesting result. Taken in isolation, the result cannot render much ancillary reflection; taken in combination with the other significant results, it appears the amount of media consumed (having a cumulative effect over the month of competition) was not as crucial a factor as were the level of in-group associations in which an individual identifies. Those creating in-groups based on association with the USMNT were more likely to consume World Cup media; those ties were not established over the course of the coverage (indicated by the lack of significant findings in this area) as much as they were reaffirmed through individual choices to watch or decline to watch the World Cup games unfolding.

Moreover, the findings in the Netherland studies (Elling et al., 2014) state that sports media impacts perceived closeness with one's nation only in the short-term. For patriotism and internationalism, this study not only affirmed the marginal impact, but also failed to find significant impact even in the short-term. Of perhaps more interest was that nationalism, a trait implying that one's home nation is superior to another nation within self-categorized comparisons, actually decreased over time after accounting for fan identification, suggesting that failure in international sport may affect the way U.S. audiences feel about their country when they are not tournament favorites in competition—something Americans have grown accustomed to in the Olympic Games. This result could explain why patriotism scores—focusing on pride of one's nation without reference to other nations—were unaffected, especially after accounting for fan identification.

Based on the preceding rationale, one of the most intriguing, yet difficult to interpret results involves the variance in smugness scores over time. Rather than rising with U.S. victories, these scores decreased after a win and then increased *after* the U.S. was eliminated from the tournament. A possible explanation is the likely tentative nature of U.S. fandom. Given the lack of success of the U.S. team in the World Cup, a win could cause only reluctant Basking in Reflected Glory (Kwon, Trail, & Lee, 2008; Wann & Branscombe, 1990). Conversely, a loss could potentially lead a fan to disengage via Cutting Off Reflected Failure (CORFing) to maintain self-esteem and eliminate threats to their self-identity (Wann & Branscombe, 1990), leading them to find some other element of American life in which smugness could be justified.

Numerous directions for future research are evident within this study. One limitation with a survey is the inability to assess causation. While an identifiable relationship between fan identification, consumption, and nationalistic measures exists, it is uncertain if consumption drives fan identification, thereby influencing nationalism, or if nationalism, patriotism, internationalism, and smugness influence consumption,

thereby affecting potential increases in fan identification. Along with some useful answers, the results of this study also provided new questions, namely in the order effects and potential CORFing phenomenon which occurred. Another limitation of the current study arises from the measurement of race. The U.S. Census operationalizes White as people with origins from Europe, Middle East, or North Africa, which can include entries such as Irish, German, Italian, Lebanese, Arab, or Caucasian. While the current study focused on U.S. citizens, and found an operational method of doing so, the acknowledgement of race and its attachment to foreign origins is a concept that could potentially yield worthwhile future findings. For instance, given the heterogeneous demographics of the United States, a U.S. citizen may, nonetheless, identify with another country in a manner equal to—or superseding—perceived kinship with the United States. Future research should endeavor to expand beyond census-defined notions of race while also testing non-citizens to pinpoint potential differences in nationalized feelings.

Conclusion

This study provided a new international megasporting event to explore in terms of the relationship between nationalized qualities and the consumption of media coverage. The path in which impressions are formed (or confirmed) still needs to be delineated, but the nature of the relationships between relevant variables has been illuminated through this survey research. Confirming previous studies, consumption of international competition does have a relationship with the attitudes about the country in which one resides. However, it is clear that issues such as fan identification, established feelings about one's nation entering the sports media event, and the role of success or failure within the event all play potential roles in understanding how these beliefs unfold. Several theoretical viewpoints must continually be employed to further explicate the very intricate process in which one views one's country through a mediated international sporting competition.

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Why We Share: A Uses and Gratifications Approach to Privacy Regulation in Social Media Use

Kelly Quinn 

The contradiction between the stated preferences of social media users toward privacy and actual privacy behaviors has suggested a willingness to trade privacy regulation for social goals. This study employs data from a survey of 361 social media users, which collected data on privacy attitudes, online privacy strategies and behaviors, and the uses and gratifications that social media experiences bring. Using canonical correlation, it examines in detail how underlying dimensions of privacy concern relate to specific contexts of social media use, and how these contexts relate to various domains of privacy-protecting behaviors. In addition, this research identifies how specific areas of privacy concern relate to levels of privacy regulation, offering new insight into the privacy paradox. In doing so, this study lends greater nuance to how the dynamic of privacy and sociality is understood and enacted by users, and how privacy management and the motivations underlying media use intersect.

The use of social media has become ubiquitous, with 73% of all U.S. adults using social network sites today and significantly higher levels of use among young adults and females (Smith, 2014). Individuals use social media for a variety of purposes: to pass time, maintain relationships, meet new people, keep up with current trends, and gather social information. As use of these platforms has grown, researchers have sought to understand how their use intersects with effects, and to identify potential impacts for relationships, social goals, and valued outcomes such as privacy and sociality.

By design, social media technologies contest mechanisms for control and access to personal information, as the sharing of user-generated content is central to their function. Moreover, because these platforms often trade on user-generated content to secure and maintain their economic viability, the ways in which such information is used by platform sponsors can be opaque. Accordingly, the use of social media often challenges established mechanisms of boundary maintenance that individuals

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employ in everyday life, such as selectively disclosing information to specific individuals. As these platforms move toward everyday invisibility, it becomes critical to understand how motivation for their use relates to everyday activities such as privacy regulation, and how it manifests in decision-making and boundary control. In an effort to broaden this understanding, this study examines social media's uses and gratifications and their relationship with privacy attitudes and behaviors.

Privacy and Social Media Uses

The uses and gratifications approach dates to early empirical mass communication research and theorizes that individuals have particular motives for using media and they are active and goal-directed in meeting their needs (Katz, 1959; Rubin, 2009). The term "uses and gratifications" refers to the uses that audiences have for employing media and the gratifications sought from media use. While gratifications sought from media use are distinct from gratifications actually obtained from such use, the two are strongly correlated and continued use of a medium over time implies that gratifications sought are reinforced by gratifications obtained (Levy & Windahl, 1984; Palmgreen, Wenner, & Rayburn, 1980). Research has grouped media gratifications into three distinct categories: those based on content that media carries (content gratifications), those based on experience of using the media (process gratifications), and those based on social interactivity that media facilitate (social gratifications) (Stafford, Stafford, & Schadtke, 2004). Media scholars have argued that strong linkages exist between the uses and gratifications that are sought from various media and the activity that takes place before, during, and after the use of such media (e.g., Levy & Windahl, 1984). While the uses and gratifications of various social media have been previously mapped by researchers (e.g., Park, Kee, & Valenzuela, 2009; Quan-Haase & Young, 2010), how uses of these platforms intersect with privacy activities is now garnering attention.

The use of social media for informational and entertainment purposes is positively associated with the use of an anonymous profiles (Lampe, Wash, Velasquez, & Ozkaya, 2010) and users motivated by social media's communicative dimensions more actively adjust privacy settings (Spiliotopoulos & Oakley, 2013). Early studies of social media demonstrated a positive link between the disclosure of personal information and users' number of friends (Lampe, Ellison, & Steinfield, 2007) and a negative association between the use of privacy settings and the use of social media to meet new people (Joinson, 2008), suggesting that privacy behaviors may be related to social gratifications.

Further research has reinforced that the relationship between privacy and sociality is quite complex. While positive links exist between the use of privacy controls and social capital outcomes (Ellison, Vitak, Steinfield, Gray, & Lampe, 2011), privacy attitudes may constrain social media disclosure and negatively impact the accrual of social capital benefits (Stutzman, Vitak, Ellison, Gray, & Lampe, 2012). Users perceive it necessary to exchange personal information to realize social goals and attain

the social capital benefits that social media offer (Ellison et al., 2011) and that the risk of unintended disclosure is mitigated by the social convenience for relational management (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010). The linkage between social capital gains and social gratifications is not well mapped, however, so additional research in this area is needed.

Finally, research on bloggers suggests that privacy management practices, such as how much personal information is revealed or whether content is later deleted, are related to the timing of media deployment, i.e., before, during, or after blogging activity takes place (Child, Haridakis, & Petronio, 2012), providing additional linkage between media use and privacy activity. When considered collectively, these studies suggest that a uses and gratifications approach may be useful for informing the relationship between social media use and privacy management.

Privacy Attitudes and Behaviors

A growing number of studies have examined privacy attitudes as a precursor to social media privacy behaviors. While these concepts seem to be related linearly, they ironically do not often correlate well (Reynolds, Venkatanathan, Gonçalves, & Kostakos, 2011; Taddicken, 2014; Zafeiropoulou, Millard, Webber, & O'Hara, 2013). Users of social media demonstrate strong concerns about privacy online (Buchanan, Paine, Joinson, & Reips, 2007; Young & Quan-Haase, 2009), yet often do not engage in privacy-protecting behaviors such as adjusting privacy controls (Debatin, Lovejoy, Horn, & Hughes, 2009; Tufekci, 2008), restricting disclosure of geo-location information (Zafeiropoulou et al., 2013), or altering initial privacy choices after network growth (Strater & Lipford, 2008). The apparent contradiction between privacy preferences and privacy-protecting activities has puzzled researchers, and has been deemed the "privacy paradox" (Barnes, 2006).

Some have suggested that the privacy paradox is temporal: as users become more aware of the potential hazards of information sharing, they renegotiate public/private boundaries and enact privacy-producing strategies (Lewis, Kaufman, & Christakis, 2008; Utz & Kramer, 2009). Individual engagement of privacy controls has also increased over time (e.g., Dey, Jelveh, & Ross, 2012). Users restrict status updates to select others (Vitak & Ellison, 2013) and create multiple profiles to maintain social boundaries (Stutzman & Hartzog, 2012). This signals that the privacy paradox may be shrinking and privacy managed more consciously as users gain social media experience.

Other studies, however, suggest that the privacy paradox has not diminished. Recent work supports continued non-correlation between privacy attitudes and privacy behaviors (Zafeiropoulou et al., 2013) and that underestimation of network size results in differences between privacy concerns and behaviors (Reynolds et al., 2011). Users permit broad access to certain types of information, such as location data and photos, despite concerns that it might result in privacy violations

(Taddicken, 2014; Zafeiropoulou et al., 2013). Researchers have pointed to user motivations, and in particular the social gratifications of social media, for this persistence (Ellison et al., 2011; Krasnova et al., 2010). While motivation for social media use is a potential avenue for exploration, scant attention has been paid to the intersection of identifiable domains of privacy concern and specific privacy behaviors.

To explore privacy and social media through a uses and gratifications approach, we must begin with the attitudes which influence privacy regulation and how these intersect with social media uses. This prompts the first research question:

RQ₁: How do privacy concerns relate to the uses and gratifications of social media use?

Many studies on privacy behaviors focus on dichotomous capture of singular privacy actions, such as change from default privacy settings, limiting the audience for specific posts, or deleting tags on photos. Yet, there is growing evidence that privacy behaviors may be socially enacted, e.g., not accept a friend request, or executed in tandem with other strategies, e.g., engage privacy controls and also untag specific photos (McLaughlin & Vitak, 2012; Quinn, 2014; Vitak & Kim, 2014). To explore how uses of social media relate to these types of privacy actions, a second research question is posed:

RQ₂: How do the uses and gratifications of social media use relate to privacy behaviors?

Finally, though studies have explored the relationship between privacy concerns and privacy behaviors (e.g., Krämer & Haferkamp, 2011), the persistence of the privacy paradox underscores a continued need to examine how the relationship between privacy attitudes and privacy behaviors is evolving. Thus, a third research question is proposed:

RQ₃: How do privacy concerns relate to privacy behaviors?

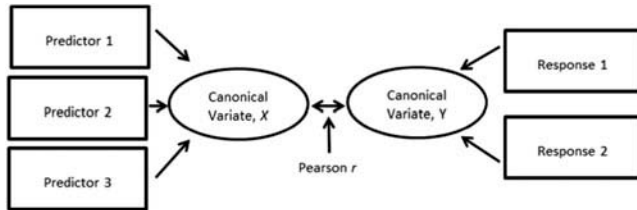
Addressing these questions will provide additional insight into social media privacy management process and enhanced understanding of the relationship between sociality and privacy.

Method

A self-administered, Web-based survey tool was used to collect data on privacy concerns, online privacy strategies and behaviors, and the uses and gratifications of social media. Prior research indicated that further exploration of the dimensions of these measures would be useful (Buchanan et al., 2007; Papacharissi & Mendelson, 2011), therefore exploratory factor analysis was conducted. Canonical correlation

Figure 1

Illustration of canonical correlation analysis. The canonical correlation is the simple Pearson r between the canonical variates, which are combined linearly from the observed variables.



analysis was then employed to assess the relationships between identified uses and gratifications of social media and dimensions of privacy concerns and privacy behaviors. To explore RQ₃, canonical correlation was also performed on the privacy concerns and privacy behaviors variables.

Canonical correlation analysis is a method of statistical analysis that investigates relationships between sets of variables, when each set consists of two or more variables. It is easily conceptualized by comparison to multiple regression analysis. Whereas multiple regression analysis compares a set of independent variables to a *single* dependent outcome, canonical correlation analysis enables comparison of independent variables to a *set* of dependent variables. Figure 1 shows a diagram illustrating this method.

An exploratory technique, canonical correlation analysis is useful when the underlying dimensions representing the combination of variables is unknown (Tabachnick & Fidell, 2013), as it provides the contribution of individual variables to the explanatory power of each variable set to facilitate interpretation (Thompson, 1984). As a multivariate technique, it has the advantage of limiting Type I errors (Sherry & Henson, 2005). The most important benefit lies in its honest reflection of the realities of social science research: the study of human behavior often reflects multiple causes and effects. Canonical correlation analysis permits exploration with less distortion than methods that examine singular causes or effects (Sherry & Henson, 2005).

The convenience sample consisted of 361 undergraduate students attending a large U.S. university. Participation was voluntary, and participants received extra credit in their courses and were provided with a URL linking to the online survey both in paper and digital formats. Data were screened for missing values, and univariate and multivariate outliers prior to analysis. From the total number of participants, responses of 8 multivariate outliers were deleted, making the total sample size $n = 353$. This sample size was deemed adequate for the subsequent analyses based on an analysis of communalities and component loadings (for principal components analyses) and variable reliabilities and subject-to-variable ratios (for canonical correlations).

Measures

Uses of Social Media. Forty-three questions, based on previous uses and gratifications research (Papacharissi & Mendelson, 2011; Papacharissi & Rubin, 2000) were included using a 5-point Likert scale, related to habitual passing time, relaxing entertainment, expressive information sharing, escapism, social interaction, professional advancement, social information gathering, companionship, and inclusiveness.

Privacy Attitudes. Twenty-eight items, related to privacy attitudes (Buchanan et al., 2007), concerns about unwanted audiences (Young & Quan-Haase, 2009), and privacy concerns (Tufekci, 2008) were included using a 5-point Likert scale.

Privacy Behaviors. Nineteen questions on privacy activities were included using a 5-point Likert scale, related to privacy protection strategies (Young & Quan-Haase, 2009) and precautionary and technical privacy behaviors (Buchanan et al., 2007).

Sample

The mean age of participants was 21.2 years ($SD = 2.76$, range = 18–45, $Mdn = 21.0$). Female participants ($n = 216$, 61.2%), outnumbered male participants ($n = 136$, 38.5%, 1 missing value) and the racial/ethnic composition was: White 39.9% ($n = 141$); Hispanic/Latino 23.8% ($n = 84$); Asian 21.8% ($n = 77$); African-American 4.5% ($n = 16$); Native American/Pacific Islander 2.6% ($n = 9$); Multi-ethnic/Other/Undisclosed 7.1% ($n = 25$). Participants were active users of social media, with 79.3% ($n = 277$) reporting two or more social media profiles and 86.7% ($n = 306$) accessing their favored social media site at least once/day.

Uses and Gratifications of Social Media

The 43 uses and gratifications items were analyzed through exploratory factor analysis, using principal components extraction with Varimax rotation. Examination of the rotated component solution revealed that five items loaded on multiple factors with differences of less than .15, thus were eliminated from the analysis. Nine components resulted from the remaining 38 items, and were consistent with other uses and gratifications studies of social media (e.g., Papacharissi & Mendelson, 2011). The nine retained components showed strong variable loadings in excess of .50 with items loading substantially on only one component (Osborne & Costello, 2005), and explained 77.9% of the total variance. These are summarized in Table 1.

The first component, *Affect* ($M = 2.85$, $SD = 1.05$, $\alpha = .94$) relates to the use of social media to show care or concern for others or express thanks and encouragement. *Companionship* ($M = 2.37$, $SD = 1.08$, $\alpha = .91$) refers to social media use to

Table 1
Factor Loadings for the Uses and Gratifications Items

Item	Affect	Companion	Voyeur	Info	Habit	Entertain	Communicate	Professional Use	Escape	C
Help others	0.827									0.866
Show encouragement	0.823									0.877
Because I am concerned about others	0.798									0.829
Let others know I care	0.763									0.813
Thank others	0.725									0.775
Makes me feel less lonely		0.831								0.877
Reassuring to know someone is there		0.816								0.846
So I won't have to be alone		0.773								0.822
When there's no one else to talk to		0.759								0.800
Everyone else is doing it		0.575								0.774
Find information about people I don't know			0.783							0.822
Find information about others			0.775							0.822
Enjoy browsing profiles			0.774							0.793
Enjoy stumbling on information about people			0.758							0.787
Find information on people before I meet them			0.660							0.630

(continued)

Table 1
(Continued)

Item	Affect	Companion	Voyeur	Info Sharing	Habit	Entertain	Communicate	Professional Use	Escape	C
Present information about my special interests				0.764						0.707
Share useful information				0.748						0.735
Provide information				0.730						0.630
Provide personal information				0.675						0.691
Tell others about myself				0.647						0.704
It passes time					0.868					0.857
When I have nothing better to do					0.825					0.754
Gives me something to do					0.801					0.784
It's a habit					0.670					0.620
Relaxes me						0.881				0.890
It allows me to unwind						0.859				0.854
It's a pleasant rest						0.851				0.860
It's enjoyable						0.608				0.686
Communicate with distant friends							0.803			0.766
Keep in touch with friends/family							0.780			0.767
To keep in touch with people							0.695			0.738
How people communicate today							0.564			0.692

Network with professional contacts	0.898									0.891
Post my resume online	0.867									0.865
Helpful for professional future	0.821									0.803
Get away from what I am doing										0.797
Get away from others										0.779
To forget about school or work										0.765
% of variance	38.0	8.6	7.2	5.9	4.6	4.0	3.5	3.2	2.8	
A	.942	.913	.917	.875	.878	.906	.846	.916	.862	

reduce loneliness and enhance feelings of others' presence. *Voyeur* ($M = 3.10$, $SD = 1.05$, $\alpha = .92$) denotes social media use for finding information about others. *Information Sharing* ($M = 3.09$, $SD = .95$, $\alpha = .94$) uses social media to tell others about oneself or post useful information. *Habit* ($M = 3.70$, $SD = 1.01$, $\alpha = .88$) describes habitual use of social media out of boredom, to pass time or when there is nothing better to do. *Entertainment* ($M = 3.03$, $SD = 1.07$, $\alpha = .91$) is use of social media for enjoyment, pleasure, and relaxation. *Communication* ($M = 3.57$, $SD = 1.02$, $\alpha = .85$) is use of social media to keep in touch with family or distant friends. *Professional Use* ($M = 2.41$, $SD = 1.16$, $\alpha = .92$) indicates use for career advancement, such as posting a resume or networking with professional contacts. Finally, *Escape* ($M = 2.80$, $SD = 1.14$, $\alpha = .86$) describes use to escape from everyday concerns or to get away from the task at hand.

Examination of the mean scores for each of these factors highlights the primary uses of social media as communication and the sharing and seeking of information. The presence of *Habit*, emerging with four high loading items and largest mean, is somewhat novel and lends weight to the argument that habitual social media use is a type of gratification and not a separate construct. Overall, these factors provide a rich and diverse set of social media uses through which privacy attitudes and behaviors can be explored.

Privacy Concerns

Exploratory factor analysis was again used to analyze the 28 privacy concerns items, using principal components extraction with oblimin rotation and Kaiser Normalization. Oblimin rotation was used because it was assumed that the underlying components may be correlated (Tabachnick & Fidell, 2013); this was confirmed by examining the component correlation matrix. Visual analysis of the resulting scree plot suggested a four factor solution, confirmed through a Monte Carlo parallel analysis (Ledesma & Valero-Mora, 2007). Two items loaded on factors with a loading difference of less than .15; and were deleted from the matrix. The 26 remaining items had strong factor loadings, no significant cross loadings, and explained 72.2% of the total variance. Table 2 provides a summary.

The first component, *Information Control* ($M = 3.32$, $SD = 1.09$, $\alpha = .95$), includes concerns about email being read by unintended recipients or unwanted others accessing sensitive information such as electronic medical records. *Future Life of Information* ($M = 3.64$, $SD = 1.00$, $\alpha = .84$) relates concerns about the future use of information to judge the individual. *Power Loss* ($M = 3.24$, $SD = 1.11$, $\alpha = .94$) incorporates concerns about the misuse of information by those holding power, such as governments, universities, or sexual predators. *Identity Loss* ($M = 3.70$, $SD = 1.00$, $\alpha = .89$) includes concerns regarding deception and identity theft. Examining the mean scores of these factors provides an indication that concerns for identity protection and how information might be used in the future are significantly higher than having personal information reach

Table 2
Factor Loadings for Privacy Concern Items

Item	Pattern Coefficients				<u>C</u>
	Information Control	Future Life of Information	Power Loss	Identity Loss	
How concerned are you about...?					
Email inappropriately forwarded?	.884				.757
Email printed and left where others could see it?	.848				.746
Email read by a non-intended recipient?	.815				.782
Virus could send out emails in your name?	.789				.739
Email not from who it says?	.737				.769
Internet address is fraudulent	.736				.739
Unwanted access to e-health records	.667				.637
Unknown others obtaining information about your Internet activities	.543				.683
Personal information found on old computers	.541				.699
Employer looks at profile in future		.890			.752
Corporation looks at profile in future		.876			.814
Government agency looks at profile in future		.801			.685
Romantic partner looks at profile in future		.716			.530
Employer uses social media to monitor extra-curricular activities			-.909		.845
Universities use social media to monitor code violators			-.907		.836
Admissions office uses social media to screen applicants			-.843		.793
Employers use social media to screen candidates			-.829		.782
Police use social media to track underage drinking			-.753		.732
Political parties use social media to target advertising			-.721		.704

(continued)

Table 2
(Continued)

Item	Pattern Coefficients				
	Information Control	Future Life of Information	Power Loss	Identity Loss	<u>C</u>
How concerned are you about...?					
Sexual predators use social media to track potential victims			-.501		.614
How much personal information is asked of you when you register online				.837	.773
Online identity theft				.765	.754
Your privacy when using the Internet				.758	.619
Online organizations not who they say they are				.697	.691
People online not who they say they are				.660	.650
% of variance	50.4%	9.7%	7.4%	4.8%	

unintended audiences or be misused by those in authority ($t = 5.06$, $df = 352$, $p < .001$). It also provides a hierarchical framework for evaluating privacy concerns.

Privacy Activities

The 19 items related to privacy behaviors were also examined to reveal dimensions of online privacy behaviors. Exploratory factor analysis using principal components extraction with oblimin rotation and Kaiser Normalization was employed; correlation of the underlying components was confirmed through analysis of the component correlations. Examination of the correlation matrix prompted elimination of one item with low communality and two additional items with cross-loadings, resulting in 16 items. Visual analysis of the scree plot suggested a four factor solution, confirmed through a Monte Carlo parallel analysis. The four components showed strong variable loadings and explained 66.3% of the total variance, as summarized in Table 3.

Basic Security ($M = 3.18$, $SD = .95$, $\alpha = .79$) describes use of measures such as pop-up blockers, clearing browsing history and examining URLs before entering sensitive information. *Social Curation* ($M = 3.02$, $SD = .96$, $\alpha = .80$), is culling posted information, untagging photos, or deleting comments made by others. *Stealth Measures* ($M = 2.09$, $SD = 1.01$, $\alpha = .82$) concerns the use of proxy servers, privacy browser plug-ins, and message encryption. *Systemic Controls* ($M = 3.39$, $SD = 1.09$, $\alpha = .87$), includes the use

Table 3
Factor Loadings for Privacy Activity Items

Item	Pattern Coefficients				C ¹
	Basic Security	Social Curation	Stealth Measures	Systemic Controls	
Do you. . .?					
Use a pop up blocker	.843				.674
Check computer for malware	.795				.663
Remove cookies	.694				.603
Check URL before entering sensitive information	.637				.471
Clear browser history regularly	.516				.418
Filter newsfeed		-.812			.706
Untag self from photos/videos		-.792			.687
Create separate account for junk email		-.761			.564
Delete wall postings to prevent others from reading		-.707			.651
Use encryption for transmitting data or email			.897		.787
Use proxy server for Internet			.854		.784
Use browser plug in			.657		.663
Restrict contacts to limited profile information				-.879	.781
Block former contacts from accessing profile				-.821	.785
Block messages from unwanted others				-.782	.702
Change privacy settings from default				-.695	.673
% of variance	35.1%	14.3%	8.9%	8.0%	

of privacy controls built into most social media platforms, such as restricting access to profiles and blocking unwanted contacts. Examination of these mean scores suggests a hierarchy in the measures taken to protect privacy in using social media. *Systemic Controls* are most frequently deployed as a first level of defense, followed by *Basic Security* and *Social Curation*. Not surprisingly, *Stealth Measures* is least used, and significantly less common than *Social Curation* ($t = 13.56$, $df = 352$, $p < .001$).

RQ₁: How do the Gratifications of Social Media use Relate to Privacy Concerns?

The first research question sought to explore the relationship between the uses of social media and privacy concerns. Canonical correlation analysis was conducted using the four Privacy Concerns variables and nine Uses and Gratifications variables. The analysis yielded four functions with squared canonical correlations (R_c^2) of .101, .056, .034, and .024 for each successive function. Collectively, the full model across all functions was statistically significant using the Wilks's λ criterion ($\lambda = .800$, $F(36, 1272.13) = 2.17$, $p < .001$). Because Wilks's λ represents the variance unexplained by the model, $1-\lambda$ yields the full model effect size in an r^2 metric. Thus, for the set of four canonical functions, $r^2 = .200$. Functions 2 to 4 were also statistically significant, $F(24, 986.7) = 1.69$, $p = .02$, however Functions 3 to 4 and Function 4 did not explain a statistically significant amount of shared variance between the variable sets ($F(14, 682.0) = 1.46$, $p = .12$, and $F(6, 342) = 1.39$, $p = .22$, respectively). Given these R_c^2 effects, only the first two functions are considered noteworthy, accounting for 15.6% of shared variance, as summarized in Table 4.

In canonical correlation analysis, functions describe distinct dimensions of the underlying relationship between the variable sets. The canonical function coefficient of each variable represents the unique contribution that variable makes in a linear regression on the canonical function/variante. The structure correlation coefficient represents the simple correlation between the variable and the canonical variate. Both coefficients are considered when evaluating the effects of a given variable in the canonical solution.

Examining the Function 1 canonical coefficients, we can see that the relevant variable is *Future Life of Information* ($r_s^2 = .502$), or concern that information will be misconstrued in the future. Examination of the canonical function coefficients also highlights that the remaining three variables are approximately equivalent secondary contributors to the canonical variate. Differences in sign indicate complexity: *Information Control* and *Identity Loss* are negative, while *Power Loss* is positive. When considered in conjunction with the related structure coefficient (r_s), the strong function coefficients of *Information Control* and *Power Loss* indicate that a suppressor effect is present; in other words, the presence of these variables strengthen the relationships of other variables with the canonical variate, primarily by eliminating error in the model.

Regarding the Uses and Gratifications items, *Voyeur* ($r_s^2 = .743$), or the use of social media to find information about others, is the largest contributor of the variable set, accounting for about 74% of variance in the canonical variate. Of secondary importance are *Habit* ($r_s^2 = .429$) and *Entertainment* ($r_s^2 = .401$). It is notable that these secondary variables have modest canonical function coefficients, but larger structure coefficients; this phenomenon often results from multicollinearity with the other Uses and Gratifications variables.

To tease out the complexities of suppressors and multicollinearity, the canonical variates from the first canonical function were subjected to canonical commonality

Table 4
Canonical Solution for Privacy Concerns and Uses and Gratifications

	Variable	Function 1			Function 2		
		Coef	r_s	r_s^2 (%)	Coef	r_s	r_s^2 (%)
Privacy concerns	Information control	-0.404	-0.248	6.1%	-1.236	-0.073	0.5%
	Future life of information	0.823	0.708	50.2%	0.279	0.323	10.4%
	Power loss	0.475	0.179	3.2%	0.121	0.125	1.6%
	Identity loss	-0.596	-0.389	15.1%	1.352	0.595	35.4%
R_c^2				10.1%			5.6%
Uses & gratifications	Affect	-0.258	0.353	12.5%	-0.056	-0.056	0.3%
	Companionship	0.010	0.526	27.6%	-0.580	-0.328	10.8%
	Voyeur	0.735	0.862	74.3%	0.004	0.097	1.0%
	Info sharing	0.130	0.596	35.6%	0.104	0.074	0.5%
	Habit	0.294	0.655	42.9%	0.410	0.329	10.8%
	Entertainment	0.332	0.633	40.1%	-0.140	-0.239	5.7%
	Communication	-0.175	0.407	16.6%	0.860	0.556	30.9%
	Professional use	0.222	0.453	20.5%	-0.258	-0.217	4.7%
	Escape	-0.130	0.439	19.2%	-0.350	-0.275	7.5%

Note. Coef = standardized canonical function coefficient; r_s = structure coefficient; r_s^2 = squared structure coefficient; h^2 = communality coefficient.

analysis (Nimon, Henson, & Gates, 2010), a process which partitions the Privacy Concerns variables into the Uses and Gratifications set, and vice-versa, to show each variable's unique and shared contribution to the other canonical variate. This form of analysis helps to clarify the role that multicollinearity and suppression plays among the variables, and simplifies the relationships between the standardized function and squared structure coefficients. Commonality analysis demonstrates that the unique contribution of *Future Life of Information* is high relative to the other variables in the set, underscoring its importance in predicting the use of social media for social information gathering, *Voyeur*. Thus, the first function is indicative of a "lurking approach" to social media privacy. In other words, concern about how posted information may be used in the future prods individuals to use social media primarily to gather social information, instead of using it to share information about oneself or to emotionally support others.

The second function highlights that *Identity Loss* ($r_s^2 = .354$), or the concern that providing personal information online can result in identity theft, is the primary contributor. The large and negative function coefficient of *Information Control* ($r_s^2 = .005$, Coef = -1.236) indicates a suppressor; commonality analysis confirms this. Examining the Uses and Gratifications variable set, we can see that *Communication* ($r_s^2 = .309$), or the use of social media to keep in touch with friends, family, and those who are distant, is of primary importance. Taken together, this dimension demonstrates that concerns about the misuse of identity lead to more instrumental uses of social media. That is, concerns about identity (either own or that of others) propels users to employ social media in practical and purposeful ways, such as maintaining contact with friends and family that are distant, rather than as a vehicle for sharing of the self or companionship.

As a final step, it is helpful to examine the communality coefficients, as these represent a measure of the utility of individual variables across all interpreted functions; h^2 is an indication of which variables are useful in defining the overall relationship between the variable sets (Thompson, 2000). Here, communality coefficients reinforce that concerns for the *Future Life of Information* ($h^2 = .606$) and *Identity Loss* ($h^2 = .505$) are important to how social media is employed, and have strong relationships with social media uses of *Voyeur* ($h^2 = .752$), *Habit* ($h^2 = .537$), and *Communication* ($h^2 = .475$).

RQ₂: How do the Gratifications of Social Media use Relate to Privacy Behaviors?

To address RQ₂, a canonical correlation analysis was conducted using the Uses and Gratifications and Privacy Behaviors variables. The analysis yielded four functions with squared canonical correlations (R_c^2) of .155, .095, .056, and .030 for each successive function. Collectively, the full model across all functions was statistically significant, with $r^2 = .300$ (Wilks's $\lambda = .700$, $F(36, 1275.87) = 3.53$, $p < .001$). Functions 2 to 4 and Functions 3 to 4 were also statistically significant, $F(24, 989.6) = .829$, $p < .01$ and $F(14, 684) = .916$, $p = .007$,

Table 5
Canonical Solution for Uses and Gratifications and Privacy Behaviors

	Variable	Function 1			Function 2			Function 3			h ² (%)
		Coef	r _s	r _s ² (%)	Coef	r _s	r _s ² (%)	Coef	r _s	r _s ² (%)	
Privacy behaviors	Basic security	-0.281	-0.086	0.7%	0.540	-0.017	0.0%	-0.172	.235	5.5%	6.2%
	Social curation	-0.062	-0.250	6.2%	-0.826	-0.863	74.5%	-.747	-.293	8.6%	89.3%
	Stealth measures	1.083	0.723	52.3%	-0.357	-0.343	11.8%	.179	.413	17.1%	81.2%
	Systemic controls	-0.566	-0.312	9.8%	-0.314	-0.553	30.6%	1.060	.706	49.8%	90.2%
	R_c²			15.5%			9.5%			5.6%	
Uses & gratifications	Affect	-0.267	0.070	0.5%	0.376	-0.419	17.5%	-.048	-.078	.6%	18.6%
	Companionship	0.574	0.378	14.3%	-0.083	-0.539	29.0%	-.752	-.424	18.0%	61.3%
	Voyeur	0.269	0.162	2.6%	0.163	-0.573	32.8%	.421	.062	.4%	35.9%
	Info sharing	-0.228	-0.004	0.0%	-0.284	-0.641	41.0%	.031	-.027	.1%	41.1%
	Habit	-0.417	-0.314	9.9%	-0.234	-0.637	40.6%	-.838	-5.66	32.0%	82.5%
	Entertainment	0.002	0.049	0.2%	0.060	-0.429	18.4%	-.194	-.308	9.5%	28.1%
	Communication	-0.452	-0.209	4.4%	-0.557	-0.757	57.4%	.479	.165	2.7%	64.4%
	Professional use	0.792	0.671	45.0%	-0.293	-0.504	25.4%	.065	.050	.2%	70.6%
	Escape	0.003	0.040	0.2%	-0.468	-0.707	50.0%	.545	.066	.4%	50.5%

Note. Coef = standardized canonical function coefficient; r_s = structure coefficient; r_s^2 = squared structure coefficient; h^2 = communality coefficient.

respectively. Function 4 did not explain a statistically significant amount of shared variance between the variable sets, $F(6, 343) = .970$, $p = .106$. Given the R_c^2 effects for each function, the first three functions are considered noteworthy, accounting for 30.6% of shared variance. Table 5 summarizes the canonical solutions for Functions 1, 2 and 3.

In Function 1 ($r_s^2 = .155$), the largest Uses and Gratifications contribution is *Professional Use* ($r_s^2 = .450$), or the use of social media to post a resume or network with professional contacts, and is supported by examination of the function coefficients. Review of the Privacy Behaviors variable set reveals *Stealth Measures* ($r_s^2 = .523$), or the use of proxy servers, privacy browser plug-ins, and encryption to be the major contributor. This function reveals a dimension of social media privacy activity that might be characterized as reputation preservation, as it suggests that if an individual is using social media for professional purposes, he or she may be more diligent in guarding such reputation through the use of more comprehensive privacy enhancing technologies while online.

Function 2 ($R_c^2 = .095$) demonstrates that the use of social media for *Communication* ($r_s^2 = .574$) and *Escape* ($r_s^2 = .500$) are the largest contributors to the criterion canonical variate. Several other Uses and Gratifications have large structure coefficients as well, such as *Information Sharing* ($r_s^2 = .410$) and *Habit* ($r_s^2 = .406$), however their relatively low function coefficients suggest this may result from shared variance with the other variables. A commonality analysis confirms the significance of *Communication* and *Escape* to the canonical solution. The use of social media for *Escape* is an interesting addition to this dynamic, and yet not as contradictory as it may appear on the surface. Unlike other media forms that offer the ability to get away as an alternative to interaction, social media is social; it invites interaction with others, though perhaps not with those physically co-present or in synchronicity. *Escape*, in the context of social media use, does not signify fleeing the presence of others as it might with less interactive media forms such as television or radio. Rather, when considering the interactivity of social media, *Escape* might be thought of as flight to a different form of sociality than what is alternatively available, and is therefore consistent with the use of social media for communication.

As for Privacy Behaviors, the use of *Social Curation* ($r_s^2 = .745$), a privacy strategy of culling—deleting tags and wall posts, filtering news feeds—of the relatively public forms of communication that social media enable, is the largest contributor. This conceptually makes sense: if the medium is already being deployed for social interaction, then socially derived mechanisms for privacy production would be an obvious alternative. When considered with the variables of *Communication* and *Escape*, this second dimension demonstrates an attention to the multiple audiences and contexts that are present, and can be characterized as an “audience aware” approach to social media privacy.

Finally, Function 3 ($R_c^2 = .056$) reveals that the use of social media as *Habit* ($r_s^2 = .320$, $r_s = -.57$) is negatively associated with the use of *Systemic Controls* ($r_s^2 = .488$), or the application-level actions such as privacy settings, blocking unwanted contacts,

and restricting the viewability of posts. Studies of media use in other formats have indicated that a lack of attention, lack of awareness, and lack of intentionality are all dimensions of habitual media use (LaRose, 2010). In addition, the theory of media attendance suggests that the automatic nature of some media use dulls attention to reasons behind its use (LaRose & Eastin, 2004). It is perhaps unsurprising then, that social media use arising from *Habit* is negatively related to reliance on *Systemic Controls* which requires attentiveness and intentionality to be effective.

A review of the communality coefficients reinforces that certain uses of social media are related to specific types of privacy activities. Social media uses of *Habit* ($h^2 = .825$), *Professional Use* ($h^2 = .706$), and *Communication* ($h^2 = .644$) have specific associations with privacy behaviors of *Systemic Controls* ($h^2 = .902$), *Social Curation* ($h^2 = .893$), and *Stealth Measures* ($h^2 = .812$).

RQ₃: How do Privacy Concerns Relate to Privacy Behaviors?

Finally, to address RQ₃, canonical correlation analysis was used to examine the relationship between privacy concern and privacy behaviors to provide deeper insight to continued detection of the privacy paradox. The analysis yielded four functions with squared canonical correlations (R_c^2) of .16, .07, .03, and .01 for each successive function. Collectively, the full model across all functions was statistically significant (Wilks's $\lambda = .752$, $F(16, 1054.63) = 6.43$, $p < .001$), and the set of four canonical functions had an $r^2 = .248$. Functions 2 to 4 and 3 to 4 were also statistically significant, $F(9, 842.22) = 4.23$, $p < .001$, and $F(4, 694) = 3.49$, $p = .008$, respectively. Function 4 did not explain a statistically significant amount of shared variance, $F(1, 348) = 1.90$, $p = .169$. Given the size of these effects, only the first two functions are interpreted, as they represent 22.8% of shared variance, 16.2% and 6.5% respectively. Table 6 summarizes these two functions.

Function 1 demonstrates that while all four Privacy Concern variables contribute to the canonical variate, *Identity Loss* ($r_s^2 = .681$) and the *Future Life of Information* ($r_s^2 = .565$) share the largest roles. The negative canonical coefficient of *Information Control* suggests that it may be a suppressor, which is confirmed by commonality analysis. On the other side of the function, *Systemic Controls* is the primary contributor to the Privacy Behaviors canonical variate ($r_s^2 = .889$); *Basic Security* and *Social Curation*, share considerably lesser contributions ($r_s^2 = .506$ and $r_s^2 = .376$, respectively). This dimension is notable because it encompasses the two largest privacy concerns about social media use and therefore illuminates how privacy concerns are mitigated in everyday practice. Concern for *Identity Loss* and *Future Life of Information* are dealt with pragmatically and concretely at the application-level, primarily through the engagement of privacy controls, restricting the availability of profile information, and blocking unwanted contacts.

Function 2 suggests concern for *Power Loss* ($r_s^2 = .248$) correlates with the use of *Stealth Measures* ($r_s^2 = .368$). Information provided through social media can easily

Table 6
Canonical Solution for Privacy Concerns and Privacy Behaviors

		Function 1			Function 2			h ² (%)
Variable		Coef	r _s	r _s ² (%)	Coef	r _s	r _s ² (%)	
Privacy Behaviors	Basic security	0.290	0.712	50.6%	−0.965	−0.395	15.6%	66.2%
	Social curation	0.217	0.613	37.6%	0.151	0.081	0.7%	38.2%
	Stealth measures	0.025	0.459	21.0%	0.969	0.607	36.8%	57.9%
	Systemic controls	0.688	0.943	88.9%	0.159	0.118	1.4%	90.3%
	R _c ²			16.2%			6.9%	
Privacy concerns	Information control	−0.265	0.599	35.9%	0.507	0.212	4.5%	40.4%
	Future life of information	0.539	0.752	56.5%	0.309	0.396	15.7%	72.2%
	Power loss	0.210	0.654	42.7%	0.699	0.498	24.8%	67.6%
	Identity loss	0.747	0.825	68.1%	−1.203	−0.351	12.3%	80.4%

Note. Coef = standardized canonical function coefficient; r_s = structure coefficient; r_s² = squared structure coefficient; h² = communality coefficient.

be harvested by tracking and surveillance technologies, and its misuse can result in asymmetrical power relationships, especially with those in authority such as police and employers. This function highlights that the use of encryption, proxy servers and privacy plug-ins are ways in which individuals address concerns for authoritarian “misuse” of information. It should be noted that this dimension of social media privacy relates to surveillance by those in authoritarian power, and is distinct from social surveillance (Joinson, 2008) or the social monitoring of others.

Communality coefficient review demonstrates that concerns related to privacy do relate to specific behaviors. Specifically, concerns about *Identity Loss* (h² = .804), the *Future Life of Information* (h² = .731), and *Power Loss* (h² = .670) are addressed through the use of *System Controls* (h² = .914), and to a lesser extent, *Basic Security* (h² = .665) and *Stealth Measures* (h² = .540).

Discussion

As a user-centered approach, the uses and gratifications perspective provides insight to not only understand social media use, but also how social media use is influenced by privacy concerns and how its use may influence everyday privacy

activities. This study specifically identified nine uses and gratifications for social media platforms: *Affect*, *Companionship*, *Voyeur*, *Information Sharing*, *Habit*, *Entertainment*, *Communication*, *Professional Use*, and *Escape*. It extends prior work on media use by identifying *Habit* as a gratification sought (LaRose, 2010) and reinforces that, like other media forms, social media are actively employed to satisfy multiple and simultaneous needs. The breadth and diversity of the identified uses and gratifications underscores the complexity associated with social media use, but such detail provides insight into how such use might intersect with specific aspects of privacy regulation.

Concerns about privacy center on four areas. Previous research identified privacy concerns as being both social and institutional (Raynes-Goldie, 2010) and related to informational disclosure on social network sites (Young & Quan-Haase, 2009). As the two primary areas for privacy concern, *Information Control* corresponds to the social aspects of informational disclosure, while *Power Loss* relates authoritarian and institutional dimensions. *Identity Loss* and *Future Life of Information* have also been recognized in prior work, as “perceived damage” and “perceived likelihood” of harm, antecedents to concern about privacy (Dinev & Hart, 2006; Krasnova, Kolesnikova, & Günther, 2009). Importantly, this study identified the primacy of *Identity Loss* and *Future Life of Information* as ordered privacy concerns.

This study also demonstrated that privacy activities follow a logical pattern that mirror hierarchical levels of online activity: *Basic Security* are employed at the core level of Internet access; *Systemic Controls* operate at the application level, within social media platforms themselves; *Social Curation* relate to the social interaction that occur within communication processes and activities; and *Stealth Measures* relate to more sophisticated Internet protocols and technologies. Users may range in their privacy behaviors, but this work also provides evidence that users safeguard their privacy simultaneously at multiple levels.

The first research question interrogated the relationship between privacy concerns and the uses of social media and a small but significant relationship was identified. Previous research established that privacy concerns relate directly to disclosure practices on social media sites (Young & Quan-Haase, 2009) as well as the use of certain social media site features (Smock, Ellison, Lampe, & Wohn, 2011). This study, by more explicitly identifying a range of privacy concern dimensions, highlights that concerns related to *Identity Loss* and the *Future Life of Information* are most strongly associated with using social media to find out about others (*Voyeur*), and secondarily *Habit*. Though effect sizes are low ($R_c^2 = 15.6\%$ for the two interpreted functions), this study establishes a tangible link between *specific* privacy concerns and explicit uses of social media. It is of note that these uses are somewhat functional in nature, contrasting sharply with more intimate, identity-related uses such as sharing information (*Information Sharing*) and expressing emotion (*Affect*). This suggests that concerns about the use of identity information and how content will be treated in the future may lead to more instrumental forms of engagement with social media platforms. Because these results appear to contrast sharply with the

economic goals of many social media platforms, this finding may be of interest to diminish additional barriers to increased user engagement.

A much stronger association between the uses and gratifications of social media and privacy activities was demonstrated in response to RQ₂. Three approaches to social media privacy were identified, the first of which connected *Professional Use* of social media and the deployment of *Stealth Measures*. Individuals carefully construct professional identity through their social media use (Gilpin, 2010; van Dijck, 2013) and impressions are often co-constructed through friend connections and the postings made by others (Walther, Van Der Heide, Hamel, & Shulman, 2009). This makes the construction of professional identity on social media especially challenging and complex. This dimension provides evidence that users perceive that advanced privacy approaches are required to use social media for professional purposes, and suggests an opportunity for future research.

A second dimension of social media privacy is found in the use of *Social Curation* when social media is used for *Communication* or *Escape*. Relationship development from the superficial to more intimate forms is often described as a process of self-disclosure in which the tension of privacy control and the hospitality of the social context feature predominantly (Werner, Altman, & Brown, 1992). Social penetration theory (Altman & Taylor, 1983) and communication privacy management theory (Petronio, 2002) underscore the relevance of socially oriented approaches to privacy that center on disclosure in unmediated relationships. These results extend this work to mediated environments, demonstrating that similar types of boundary control processes are exercised on social media platforms and reinforcing the significance of social strategies in privacy regulation processes.

A third dimension of social media privacy identified in this study offers evidence of how the privacy paradox may continue to surface. *Habit* is related to a lack of engagement of application-level privacy management tools. This is consistent with how habitual media use is characterized generally, lacking intentionality and/or attention to the medium/message (LaRose, 2010). These results suggest that habituation intersects with privacy management in ways that introduce the potential for disconnection between privacy concerns and privacy behaviors. In turn, this prompts a continued manifestation of the privacy paradox, despite increased experience and sophistication in social media use. Future studies might further explore how the automatic nature of habitual social media use may serve to influence other forms interactivity, both with platforms themselves as well as mediated interaction with others.

Finally, examining the linkages between privacy concerns and privacy behaviors provides insight into how privacy is tangibly negotiated in the everyday. Concerns about *Information Control* and *Future Life of Information* are addressed through the engagement of application-level controls. Similarly, sophisticated measures, such as encryption and privacy plug-ins, are used in response to concerns about power and identity loss. These connections provide additional insight into how privacy is actively negotiated and accomplished on social media platforms, and how action responds from specific privacy concerns.

It is important to note that while the participants in this study were sampled from an ethnically and racially diverse undergraduate student population, the voluntary nature of student research recruitment precludes generalizability. As is often the case with surveys, reliance on self-reported data presents the potential for reporting bias. The results are salient for social media researchers and site designers alike however, as they provide a more detailed view of how privacy is viewed and accomplished.

Conclusion

In summary, this study utilizes a uses and gratifications perspective to investigate how privacy concerns and privacy behaviors intersect with underlying social media uses. Specific uses correlate to both identifiable concerns about privacy and express privacy behaviors. In addition, certain privacy concerns are associated with explicit privacy activities. These findings enhance our understanding of the multiple facets of privacy regulation that are employed in everyday use of these media and provide nuance to the understanding of the dynamic of privacy and sociality.

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Moral Foundations Theory and Moral Reasoning in Video Game Play: Using Real-Life Morality in a Game Context

Marina Krcmar and Drew P. Cingel

Although research has indicated that moral *decisions* are made during video game play, less research has examined moral *reasoning* during play. Using a think-aloud protocol, participants' decisions and reasoning were recorded during game play and coded as either strategic or moral. Players' reasoning was also coded using Moral Foundations Theory. Results indicated an almost equal percentage of strategic and moral reasoning; the salience of several individual moral foundations predicted moral reasoning during play. Video game experience was positively related to the use of moral reasoning, which can be explained by relating reasoning to rational and experiential processing during game play.

Research on moral reasoning in video game play has focused on several main findings, some of which are surprising when considered from the perspective of the everyday game player. For example, players tend to automatically perceive virtual characters in a social way, and in some cases treat them with moral respect (Farrar, Krcmar, & McGloin, 2013; Hartmann & Vorderer, 2010). Second, and perhaps less surprisingly, players actively highlight the unrealistic nature of violent games in order to enjoy the violent actions in them (Klimmt, Schmid, Nosper, Hartmann, & Vorderer, 2006). Third, players experience more guilt when the violence in games is unjustified and when they are themselves more empathic players (Hartmann, Toz, & Brandon, 2010). Fourth, players also experience greater guilt when they do not perceive play as "just a game" (Hartmann & Vorderer, 2010). Thus, enjoyment and pleasure, two somewhat obvious outcomes, coexist with guilt and empathy in game play, which are arguably more surprising outcomes. In large part, these latter outcomes may be due to the automatic nature of processing, and perhaps more specifically moral processing, inherent in video game play (see Hartmann, 2012

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for a review). As a result it seems likely that players experience moral conflict, perhaps at a less-than-conscious level during game play, and that an examination of their moral decisions and moral reasoning may offer insight into this process.

While many studies have examined moral *outcomes* associated with video game play such as guilt and in-game moral transgressions (e.g., Farrar et al., 2013; Hartmann & Vorderer, 2010), only a few studies have examined moral decision making *in* games. It is important to note that although philosophical discussions of a moral or specifically deontological nature date back centuries to ancient Greece (Rawls, 1999) and encompass a body of philosophy well beyond the scope of this study, recent empirical research examining links between moral reasoning and in-game video game behavior have focused more on individual moral beliefs as presented by Moral Foundations Theory (MFT; Haidt & Joseph, 2008).

For example, Weaver and Lewis (2012) examined the relationship between the salience of two moral foundations, harm/care and authority/respect (Haidt & Joseph, 2008), and game play. These authors recorded the game play experience and content analyzed it for moral decisions, thus ensuring that measurement occurred in real-time. However, these authors looked only at game decisions (e.g., to shoot a character or help a civilian), and did not examine players' moral reasoning—the *process* of making an ethical decision when faced with a moral dilemma (Eisenberg, 1986). Furthermore, they did not report on all the moral foundations identified by Haidt and Joseph (2008). Additionally, Joeckel, Bowman, and Dogruel (2012; 2013) also examined the relationship between the salience of moral foundations and the use of those foundations during game play. These authors, however, also looked only at the relationship between moral foundation salience and whether or not a transgression was made, and again, not at the *reasons* participants gave for either engaging in a moral transgression or not doing so. In sum, previous work has considered the link between moral foundation salience and the actual decision made during video game play, but not how moral foundation salience is related to the *reasoning* behind the ultimate decision.

Thus, although it appears that moral salience is important in understanding what kinds of decisions game players make in virtual worlds, it is unclear *how* and *why* video game players make moral decisions. Thus, the present study aims to add a complementary yet independent contribution to the extant literature on moral decision making and reasoning during video game play by having participants play a slow-paced video game (i.e., *Fallout 3*) designed to present players with moral situations that vary in content, including, but not limited to, decisions regarding loyalty, adherence to authority, purity, and aggression. Using a think-aloud protocol during game play, we were able to track participants' actual decisions and importantly, reasons for those decisions. Subsequently, reasons for decisions were coded as either moral (i.e., utilizing some real-world moral principles) or strategic (i.e., only beneficial to game outcomes). If the reasons were coded as moral, they were subsequently coded using moral foundations identified in MFT. In order to

understand the relationship between players' moral vs. strategic decisions, we first consider Huizinga's (1955) conceptualization of the magic circle.

In-Game Decisions

During video game play, players can be thought of as making two somewhat parallel kinds of decisions. On one hand, players make moral-type decisions. That is, they are faced with situations in which they may opt to morally transgress given Western culture deontological norms (e.g., shoot a civilian, steal). They may also choose to act in moral ways. For example, Weaver and Lewis (2012) and Joeckel and colleagues (2012; 2013) found support for the notion that video game play is not devoid of moral behavior and that players will engage in normatively moral behaviors. However, as noted earlier, these authors looked at game decision *outcomes*. For example, did players shoot or not? Nevertheless, these studies demonstrate that players do use morality in games, despite the fictional nature of video games.

Conversely, it is possible that game play is also guided by the experience of game play, in which winning the game is a key element of play. In fact, utilizing Huizinga's (1955) notion of the magic circle, Sutton-Smith (1997) argued that games are an arbitrary construction for the sake of enjoyment. Castranova (2005) further argued that players are protected from the outside and thus, real-world rules do not apply. Subsequent research has suggested that the relationship between the game world and the real world is porous, malleable, and changing (e.g., Hartmann & Vorderer, 2010). In fact, Consalvo (2009) has recently argued that the magic circle does not exist and that real world rules certainly do apply in video game play.

Nevertheless, if Sutton-Smith's (1997) argument is correct, and games are played in a magic circle, even if this circle is porous (that is, even if we do not adopt the extreme version of the theory), then games played within this circle would theoretically result in play that ignores the rules of life in lieu of a focus on the rules of the game (Huizinga, 1955). That is, the magic circle would provide a shield wherein the game world would exist separately from the real one. Although Huizinga clearly developed these ideas long before the advent of video game play, Sutton-Smith's use of it is appropriate and in some sense, inevitable. If video games do exist primarily in this magic circle, then game logic, and not moral logic, should prevail.

If this is the case, then decisions in the game would be based on a guiding principle that dictates game strategy or strategic reasoning. In this view, game play would be protected from the morality of the outside world (Sutton-Smith, 1997). Instead, players would make choices based on *reasons* related specifically to the game environment, to game play, and to progressing successfully through the game. For example, a player may shoot a character or even save a character in order to score points or regain health. It is not necessarily that the decisions themselves would be moral or immoral, but rather, the *reasons* for those decisions would be for the purposes of advancing through the game. We refer to these here as strategic decisions and previous research has supported the conclusion that players engage in a

mixture of both moral and strategic decision-making (Weaver & Lewis, 2012), thus indicating that both individuals' morality as well as their game experience or sense of the magic circle may impact their decision making and subsequent reasoning. However, from the perspective of moral theorizing, is it more likely that players utilize strategic reasoning or moral reasoning during game play? In order to consider this question, we first review Hartmann's (2012) recent work on moral intuitions, then introduce Haidt and Joseph's (2008) work on MFT. Whereas both of these theoretical approaches are recent takes on moral reasoning, as is their application to video game play, these theories either explicitly (Haidt & Joseph, 2008) or implicitly (Hartmann, 2012) are built on theorizing in moral philosophy (Kelly, 2006).

Moral Intuitions

Theory and research on moral reasoning has spanned multiple disciplines including philosophy, from the ancient Greeks, (e.g., Socrates: Vlastos, 1999) to more recent work in moral philosophy (e.g., Orend, 2000), anthropology (e.g., Howell, 1997), cognitive science (e.g., Danielson, 1998), and evolutionary psychology (e.g., Buller, 2005). As noted above, more recent research in the relatively narrow domain of moral reasoning in video game play has built on this research with a specific focus on the moral aspects of decision-making in games.

Specifically, recent work by Hartmann (2011; 2012) has proposed a dual-system model of media processing, with a focus on processing moral messages. Hartmann theorizes that, when processing media such as video games, individuals use two different systems that operate concomitantly during the experience. One, the intuitive system (System 1), is used when individuals need to make quick decisions, judgments, or experience emotional responses. This system can be thought of as occurring automatically. The second, the rational system (System 2), tends to be used when individuals are making sense of information, including that which is related to the plot, and the environment.

More specifically, in System 1, information processing is quick, effortless, associative, and unconscious. This system allows for an initial or "gut" response to media experiences based on sensory input (Hartmann, 2012). This assertion has been empirically supported in recent work, as Krcmar, Hartmann, and Eden (2014) found that when the rational system (System 2) is *suppressed* via a cognitive load task, video game players make more intuition-based, or System 1 decisions. They argue that this is due to the fact that System 2 is more reflective, and thus, more effortful, deliberate, and conscious. Therefore, System 2 processing generally results in conscious thoughts and reflective convictions; whereas suppression of System 2 results in more automatic and intuitive System 1 processing.

In the context of video gaming, users would generally engage both System 1 and System 2, the former because it is automatic and effortless, and the latter because it is necessary to follow a plot, make decisions, and utilize controls that have been learned (Przybylski, Ryan, & Rigby, 2009). However, when faced with an in-game decision,

what might occur? If, as Hartmann has argued, System 1 is effortless and quick, we may expect some game decisions to be made quickly such as the choice to turn right or left, or the automatic interpretation of the game graphics. It seems likely, however, that when faced with a moral dilemma, System 2 would be engaged to a greater extent. When this rational processing is engaged, it also seems likely that players would become aware of the game goals, and thus, offer more strategic reasons for their choices. Therefore, from the perspective of moral intuitions (Hartmann, 2012), we would expect players to use more strategic reasons than moral reasons during game play. However, this expectation may run counter to the expectation derived from MFT.

Moral Foundations Theory

At least some scholars argue that morality might be partly innate, a term used by Haidt and Joseph (2008) in their discussion of moral foundations. Previous work by Marcus (2004) claims that “nature bestows upon the newborn a considerably complex brain, but one that is best seen as prewired—flexible and subject to change—rather than hardwired, fixed, and immutable” (p. 12). This flexibility allows the brain the ability to change, adapt, and grow through experience. As Marcus claims, experience edits this first draft of the brain. Marcus (2004) concludes that a prewired brain does not mean it is un-malleable. Rather, innate means that characteristics of the organism, in this case the brain, that are “organized in advance of experience” (p. 40).

How might morals be organized in advance of experience? Although a thorough treatment is beyond the scope of this paper (see Haidt & Joseph, 2008 for an excellent review), Haidt and Joseph argue that certain moral intuitions exist innately via the cognitive learning mechanisms that generate them. For example, Americans are likely against a parent sleeping with an opposite-sex child beyond middle childhood, a practice that is acceptable in many other cultures (Shweder, Balle-Jensen, & Goldstein, 1995). Given the cross-cultural differences in this moral practice, it is unlikely that moral *judgment* of the behavior itself is innate. Instead, protection of children and sexuality may both have innate cognitive structures associated with them. One’s culture then acts as the editor of those innate mechanisms. Thus, these moral decisions, though culturally influenced, “are examples of moral intuitions: bits of mental structure that connect the perception of specific patterns in the social world to evaluations and emotions that are *not fully controllable or revisable by the person who experiences them*” (Haidt & Joseph, 2008, p. 16, emphasis added).

In terms of video game play, and from the perspective of an innate morality, we would expect in-game decisions, or at least the reasons for those decisions, to be moral more than strategic. That is, we would expect moral reasoning to be an overriding principal that governs game play that can override strategic decisions. Although strategic decisions occur because gamers want to win, from the perspective of MFT, we would expect a greater proportion of moral as compared to strategic reasons offered. Therefore we ask:

RQ₁: Which basic form of reasoning do players use more often: strategic or moral reasoning?

Individual Differences and Moral Reasoning

However, MFT also proposes individual differences in decision-making. Importantly, moral intuitions, or gut reactions to situations that call for a moral decision, subsequently require reasoning that occurs secondary to the original, intuition-based decision. This second level of reasoning is done for more social purposes, in order to defend and explain the original gut reaction or decision (Graham et al., 2013). Thus, the initial decision may be intuitive but importantly, reasons surrounding the initial, gut-based decision are somewhat independent of the gut reaction and therefore may be susceptible to more rational explanations.

In all, MFT identifies five basic moral concerns. They include morality regarding *harm and care*, in which case moral concerns involve things like the protection of children and rules against physically hurting others. The second, morality relating to *fairness and reciprocity*, includes moral judgments that consider property ownership, proper payment for goods and services, and provocation of actions. The third, morality relating to *in-groups* and *loyalty*, includes moral judgments that consider one's commitment or loyalty to members of one's in-group. The fourth, *respect and authority*, includes judgments about whether something violates an authority figure who demands respect. The fifth, *purity/sanctity*, includes judgments about whether something is impure or dirty in some way. It should also be noted that recently, some work has suggested a sixth foundation: liberty/oppression (Iyer, Koleva, Graham, Ditto, & Haidt, 2012). Given that more work is ongoing to ascertain the viability of this sixth foundation, we opt to only include the previously validated five foundations in the present paper.

As we have argued, it is important to understand players' *reasons* for making decisions during game play, as previous research has generally neglected an examination of such reasoning. That is, while there is reason to believe that video game players make both strategic and moral *decisions*, it seems likely that their reasons would be first guided by more rational processing and second, guided by moral salience. For those reasons guided by moral salience, it is important to understand which moral foundations are employed by video game users. Thus, we ask:

RQ₂: During game play, what are the relative proportions of the five moral foundations used in moral reasoning?

Moral Foundation Salience. Additionally, one's moral foundations or principles have been found to guide one's judgment and actions (Haidt & Joseph, 2008). By extension, principles of morality may influence decision making during video game play, even when players claim to be engaged in "just a game." It seems

likely, then, that individual differences in principles regarding the five moral foundations would guide decision-making and reasoning in fictional video games. Consistent with this notion, Joeckel et al. (2012) found that an individual's salience of a given moral foundation was related to his/her reluctance to morally transgress against that principle in a specific scenario. Therefore, it appears that moral foundations are related to moral decision-making. However, as pointed out above, moral decisions themselves are not clear indicators of the moral decision-making process. Thus, we pursue this more detailed question by considering the relationship between the salience of each moral foundation and whether those moral foundations are referenced when video game players reason through a moral decision. Given that demographics may influence the reasoning process (Haidt & Joseph, 2008), we also control for basic demographic variables. Thus, we predict:

- H₁:** Controlling for demographic variables, there will be a positive relationship between individuals' scores on each of the 5 moral foundations and the frequency with which they reference that foundation as a reason for engaging in a moral decision.

Video Game Experience. It appears likely that game experience may influence decision-making and reasoning in games as well. For example, Vieira and Krcmar (2011) found that video game players who engage in more frequent violent game play rated lower on a measure of affective sympathy and in turn, were more likely to perceive unjustified violence as acceptable. Thus, it appears that video game play itself may influence moral reasoning, especially moral reasoning regarding violence.

In terms of the present study, consider Hartmann's (2012) discussion of rational vs. experiential processing. Recall that System 2 is more effortful, conscious, and analytical. This system allows for slow and deliberate processing and requires greater cognitive effort. It is associated with more cognitively difficult tasks, or at least tasks that represent novel or difficult processing for a given individual. On the other hand, System 1 operates on associative, rather than logical, connections and processes automatically, relying on stored concepts, associations, and experiences (Hartmann, 2012).

It seems likely that experienced game players do not require effortful processing, but instead can play automatically, drawing on their past game play experience and mental models of video game play (McGloin, Farrar, & Krcmar, 2011). This ease and automaticity in game play also allows for other automatic processes—in this case, automatic moral intuitions. That is, if, as MFT argues, moral reasoning is intuitive and automatic, moral reasons are more likely during the less effortful play of experienced gamers. Experienced players will be less cognitively burdened and thus able to rely on moral intuitions. On the other hand, less experienced players would be more conscious and aware of their play, would find it more cognitively taxing, and thus be less able to rely on moral intuitions. Therefore, it is likely that:

H₂: Controlling for demographic variables, there will be a positive relationship between the frequency of overall video game play and use of morals during game play reasoning.

Method

Participants

Participants ($N = 65$) were recruited for this research from two separate locations. In one, 30 participants were recruited from a private university in the southeast United States and the surrounding community. These participants were given a copy of the game as compensation for their participation. Additionally, 35 participants were recruited from a participant pool at a private university in the Midwest. These participants received a nominal amount of participation credit for their time. Although the sample size itself is not overly large, the nature of the methodology offered a very large amount of data because each player provided multiple instances of decision making and reasoning during game play. The median age was 20 and 64.6% were males ($n = 42$). A majority of participants listed their race/ethnicity as either White (56.9%; $n = 37$) or Asian (20.0%; $n = 13$). Independent-samples t -tests were conducted to determine whether participants differed significantly on any of the measures described below based on participation site; participants from the second site on average played fewer video games per week ($M = 1.49$, $SD = 1.84$) and per month ($M = 3.74$, $SD = 3.96$) compared to participants recruited from the first site (M (per week) = 3.03, $SD = 2.00$; M (per month) = 7.47, $SD = 3.06$). Importantly, however, t -tests indicated no significant differences ($p > .10$) in the types of moral reasoning used by participants at either site, either in the game or in actual life. Considering that the two samples only differed significantly on one variable of interest to the present study, video game experience, these two samples were combined.¹

Measures

Video Game Use. Two items were used to measure the frequency of video game play among participants. The first, "approximately how many days did you play arcade or video games (either on the computer, in the arcade, or console games such as XBOX, XBOX360, PlayStation 2, Playstation3, Wii) in the past week?" scored an average of 2.20 days ($SD = 2.06$). The second item, "Approximately how many days did you play arcade or video games (either on the computer, in the arcade, or console games such as XBOX, XBOX360, PlayStation 2, Playstation3, Wii) in the past month?" scored an average of 5.46 days ($SD = 4.01$).

Moral Foundations. Participants also completed a two-part measure of moral foundations (Graham, Haidt, & Nosek, 2009). In part one, using a 0–5 Likert-type

scale anchored by *Not at all relevant* and *Extremely relevant*, participants completed 16 items designed to measure the relevance of each of the five moral foundations as identified by Haidt and Joseph (2008): Harm/Care (e.g., "whether or not someone cared for someone weak or vulnerable"), Fairness/Reciprocity (e.g. "whether or not someone acted unfairly"), In-group (e.g. "whether or not someone did something to betray his or her group"), Authority (e.g. "whether or not someone showed a lack of respect for authority"), and Purity (e.g. "whether or not someone did something disgusting"). In part two, participants responded to 16 items designed to measure their moral judgments for each of the five moral foundations. Participants responded by using a 0–5 Likert-type scale anchored by *strongly disagree* and *strongly agree*. Sample items included "Chastity is an important and valuable virtue," "It can never be right to kill a human being," and "I am proud of my country's history." Taken together, 6 items measured each moral foundation. All of these subscales were reliable ($\alpha > .80$).

Stimulus Materials

Participants were given the game *Fallout 3*, developed by Bethesda Game Studios in 2008 as the third installment of the *Fallout* series, to play for this research study. This game was chosen because it offers players many scenarios where decisions must be made. For example, you may decide whether or not to steal someone's keys, contaminate the water, or lie to an ambiguous character. In other words, the moral situations span many kinds of behaviors. With its many choices, the game has been compared to make-your-own-adventure books.

Study Procedure

At both sites, participants were given the pretest to complete under the supervision of a member of the research team. Next, participants were given background regarding the game. Participants were given a voice recorder with headphones and a microphone and shown how to use this equipment. They were given the opportunity to practice or ask the research member any questions they might have about using the electronics. Next, they were told that during the course of normal game play, the game would pose questions about what they wanted to do next (e.g., you encounter someone and the game asks if you would like to steal his weapon, hide, or shoot him). They were told that it did not matter to the researchers what choice they made, but that it was important to record the issue they were faced with, the decision they ultimately made, and their reasons for making that particular decision. Therefore, only decisions important to the game and not incidental decisions (e.g., whether to turn right or left) were recorded.

The actual game play experience differed slightly based on the site of data collection. Participants in the first data collection were given a voice recorder,

headset, and a copy of *Fallout 3*. They were permitted to take these items with them so that they could play the game at a time and place of their choosing. After approximately 3 weeks, they were re-contacted and asked to return the headset and voice recorder. They kept the game as compensation for their participation. Due to issues with equipment malfunction and loss, the procedure was amended in the second data collection to speed up the overall process, while simultaneously cutting down on data and equipment loss. Participants in the second data collection were invited to a lab space, where they completed the same pretest measures as participants in the first data collection. Rather than being able to play the game at home, participants played the game at the lab space while using the voice recorder and headset. In this method, participants played the game for approximately 45 minutes. As noted previously, given the branching nature of the storyline, participants were able to have different experiences, even in the first 45 minutes, based on decisions that they made early in the game. A member of the lab team returned at the end of the hour session to thank the participants for their time and to answer any final questions.

Coding Procedure

Two trained research team members coded the game play transcripts. First, a trained member of the research team saved the voice data as an audio file before transcribing those files to a word document. Each decision and its reason was placed in a separate line in an excel file for coding purposes. For many players, a given decision might have several reasons and each of these was treated separately. Each reason was then coded for two different factors: moral vs. strategic and moral foundation. Next, a second coder independently assessed 20% of the decisions in order to compute reliability.

The first coding pass determined if the reason was strategic (e.g. "I got completely radiated for Moira again ... I guess we're going for the greater good here, but I'm really in it for the game money") or moral (e.g. "I helped to repair the water pipes in Megaton ... I guess because the town is kind of like home to me now"). Since some participants offered multiple reasons for their decision, it is possible that participants could offer both strategic and moral reasons for one decision. Strategic reasoning was defined as making a decision specifically so that the participant improves their character or aids their progress in the game. Players could earn rewards or points, or make strategic decisions to help them obtain their ultimate in-game goal. Moral reasons were defined as reasons that were irrelevant to progress through the game but reflected morality. These included reasons about characters, helping others, or meeting the players' own sense of what was right or wrong in the situation as if they were encountering it in real life. This strategic/moral coding was highly reliable ($\kappa > .90$). For each participant, scores were then computed. The total number of reasons was computed and the percentage of those reasons that were moral and strategic was also computed.

A second coding pass identified each reason as referencing one of the five moral foundations. After completing approximately half of the moral foundations coding, the two coders determined that when reasons were coded as strategic during the first coding pass (e.g., "I killed her because I needed to get points"), moral foundations did not seem to apply validly and reliabilities were very low. Thus, moral foundations were only coded for those reasons that had been coded as moral in the first coding pass, e.g., harm/care: "I think the main reason why I killed the overseer is because he was beating his daughter"; fairness/reciprocity: "...killing people needlessly does not seem to be the best thing to do right now..."; in-group/loyalty: "[I] told her that I was going to give it to her instead of lying to her because I don't want to screw up that relationship"; authority/respect: "I clicked the option that I am not scared of him because who would be scared of a bully, I guess. It's just another 10 year-old kid at this birthday party"; purity/sanctity: "Normally, I wouldn't sleep with a hooker." The moral foundations coding was reliable ($\kappa > .80$).

For each participant, a score for each moral foundation type (e.g., harm/care) was computed. To obtain this, an individual's total number of reasons was counted. Then, the number of reasons for each moral foundation type was counted. Lastly, the percentage of reasons that fell into each of the 5 categories was computed. Thus, each individual's total of the 5 moral foundations summed to 100%, giving them 5 separate moral foundations scores.

Results

Overall, participants reported 1,068 decisions during game play, an average of 16.43 per participant. Participants also reported 1,243 reasons for making those decisions (because some decisions involved more than one reason on the part of a given player), or an average of 19.12 reasons per participant. To answer RQ₁, which asked which type of reasoning players used more often, moral or strategic, the numbers of moral and strategic decisions were converted into percentages for each individual participant so that each individual's score totaled 100%. A paired-samples t-test indicated that participants do not differ on their moral and strategic decisions during game play, as participants used moral reasoning for an average of just over 54% of their in-game decision making, and used strategic reasoning for nearly 46% of their in-game decision making ($t = 1.35$, $df = 58$, $p = n.s.$). Therefore, strategic and moral reasoning are used about equally during game play, answering RQ₁.

To answer RQ₂, which asked about the pattern of moral foundations used during video game play, we examined the percentages for each foundation. Specifically, 37.6% of all decisions made during game play were based on the foundation of harm/care, 22.2% were based on fairness/reciprocity, 9.2% were based on in-group/loyalty, 25.7% were based on authority/respect, and 1.4% were based on purity/sanctity. Overall then, participants relied on the harm/care, fairness/reciprocity, and authority/respect foundations most heavily during video game play, providing an answer to RQ₂.

Next, to test H_1 , we used 5 separate hierarchical multiple regressions, one for each moral foundation. With video game use, gender, and age entered as control variables on step one, the moral foundation of fairness/reciprocity was significantly and positively related to the use of that category of reasoning during in game play ($R = .67$, $\Delta R^2 = .22$, $\Delta F(1, 49) = 19.19$, $p < .001$; $\beta = .52$, $p < .001$). Additionally, the foundation respect/authority was positively related to the use of that category of reasoning in game play ($R = .46$, $\Delta R^2 = .19$, $\Delta F(1, 50) = 11.78$, $p = .001$; $\beta = .44$, $p = .001$). The moral foundations of harm/care ($R = .28$, $\Delta R^2 = .02$, $\Delta F(1, 50) = 1.32$, $p = \text{n.s.}$; $\beta = .17$, $p = \text{n.s.}$), in-group/loyalty ($R = .30$, $\Delta R^2 = .05$, $\Delta F(1, 50) = 2.61$, $p = \text{n.s.}$; $\beta = .23$, $p = \text{n.s.}$), and purity/sanctity ($R = .15$, $\Delta R^2 = .01$, $\Delta F(1, 50) = .62$, $p = \text{n.s.}$; $\beta = .12$, $p = \text{n.s.}$) were not related to use of those foundations in video game play. Therefore, the moral foundations of fairness/reciprocity and authority/respect are related to the use of that foundation in video game play, while the foundations of harm/care, in-group/loyalty, and purity/sanctity are not. For a complete listing of variables and relationships, please see Table 1. Thus, H_1 was partially supported.

H_2 , which predicted a positive relationship between overall video game play and the use of moral reasons (as opposed to strategic reasons) in game play, was tested by using a hierarchical multiple regression. Gender and age were entered on step one as controls and were significant ($R = .34$, $R^2 = .12$, $F(2, 55) = 3.56$, $p = .04$). Weekly video game use was entered on the second step, and was significantly and positively related to the use of moral reasoning during video game play ($R = .43$, $\Delta R^2 = .07$, ΔF

Table 1
Hierarchical Multiple Regressions for Salience of Moral Foundations in Everyday Life and Use of Foundations in Video Game Play

Variables	Harm/ Care	Fairness/ Reciprocity	In-group/ Loyalty	Authority/ Respect	Purity/ Respect
Block 1					
Gender	-.20	.23*	-.06	-.10	.02
Age	-.06	-.27**	.24*	.11	-.01
VG use	.11	.21*	-.06	-.06	-.05
Block 2					
Sal. Harm/Care	.17				
Sal. Fair./ Recip.		.52***			
Sal. In-Group/ Loyal			.23		
Sal. Auth./ Respect				.44***	
Sal. Purity/ Sanctity					.12

Note. Reported coefficients are standardized beta weights* indicates $p < .10$ ** indicates $p < .05$ *** indicates $p < .01$

$(1, 54) = 4.52, p = .04; \beta = .29, p = .04$). Therefore, participants who report playing more video games weekly are *more* likely to use moral reasoning during video game play, providing support for H_2 .

Discussion

Overall, despite the common belief that “it’s just a game” and the conception that games occur in a magic circle separate from real world considerations (e.g., Huizinga, 1955; Sutton-Smith, 1997), results indicate that players use strategic and moral reasoning almost evenly during video game play and that more experienced game players use more moral reasoning during game play, thus supporting the idea that the magic circle is indeed porous (Castranova, 2005). These are interesting findings, especially given that strategic reasoning is often needed to advance the storyline, gain important rewards, regain health, or better one’s chances of winning while playing video games. Rather, despite the fact that moral considerations are arguably not relevant in a game world where no one is actually harmed, moral reasons were used approximately half the time among members of the present sample.

Of the decisions made, nearly half used reasoning from the foundation of harm/care, and over one quarter came from the authority/respect foundation, similar to the findings of Weaver and Lewis (2012). The present study, however, indicated that both the fairness/reciprocity and in-group/loyalty foundations were referenced rather frequently as well. Thus, the virtual world of game play encouraged many of the same reasoning processes that individuals are likely to go through in the real world. In fact, further results indicated that, consistent with MFT, the importance one placed on certain moral foundations was statistically related to use of those reasons for decisions in the admittedly fictitious world of video game play. Specifically, the fairness/reciprocity foundation and the authority/respect foundation were both related to an increased reference to reasons consistent with those principles for decisions made during game play. Thus, these results complement a growing body of results that indicate that video game players act toward game characters in a social way, and therefore, may experience moral conflict during game play (e.g., Farrar et al., 2013; Hartmann & Vorderer, 2010). This is especially likely, considering that participants referenced moral concerns while reasoning through their moral decisions. Results indicate, however, that the salience of the in-group/loyalty foundation and the purity/sanctity foundation in everyday life, and surprisingly, the emphasis on harm/care did not relate to the use of that foundation during game play.

On one hand, the null results regarding the salience of purity/sanctity and the salience of in-group/loyalty might be explained by cultural factors. Given that this sample was drawn from the United States, one possible reason for that particular finding is that cross-cultural work (Haidt & Joseph, 2008) has found that neither purity/sanctity nor in-group/loyalty are held very strongly by North American cultural groups. Thus, low levels and subsequent low variability of these foundations in the current sample made it less likely that effects would be found. However, harm/care

salience is typically important across cultures (Haidt & Joseph, 2008). In fact, many of the decisions were in fact defended by harm/care reasons during video game play. In addition, although *Fallout 3* is not a violent game *per se*, it does involve many instances where human safety is at stake. Thus, null findings may have been caused by the importance of harm/care in the game itself, rendering negligible its relationship to the individual difference variable of harm/care salience. Alternately, harm/care may be so important to most people that a ceiling effect may have occurred, rendering effects non-significant. These findings also suggest that the reasons individuals provide may operate somewhat differently than the initial decision to either make a moral decision or transgress. Specifically, Joeckel and colleagues (2012) found that the salience of individuals' moral foundations was related to the likelihood to uphold that foundation when making a decision in game play. Graham and colleagues (2013) note, however, that the initial, gut-decision and the reasoning surrounding it are at least slightly disconnected; thus, theory supports the slightly different pattern of results found between Joeckel and colleagues (2012) and the present study, suggesting differences between the moral decision and the reasoning process. Once again, this suggests the importance of considering both moral decision-making during video game play *and* the reasoning behind those decisions in research designs and measurement, as these two processes may differ somewhat from one another.

Results from this research also indicated that there was a positive relationship between overall video game play and the use of moral reasons during the play episode. This finding runs counter to the more extreme interpretation of the magic circle hypothesis (Huizinga, 1955): Rather than being separate from real world considerations, moral reasoning is present in video game play, and occurs more frequently for those who play games more often. While it could be argued that more experienced players would use more strategic reasoning, it appears from the present results that the innate nature of moral reasoning, coupled with the experiential processing of more experienced video game players, is related to reasoning during game play. This finding provides additional support for the distinction between System 1 and System 2 processing (Hartmann, 2011; 2012), and links experiential processing with moral reasoning. This is a potentially important finding from the current study: Work has suggested that playing violent video games is related to changes in later perceptions of violence (Vieira & Krcmar, 2011), for example. These results suggest that continued play might relate to System 1 processing, with implications for the use of associative, automatic moral reasoning and the effects of such game play. Thus, this finding between video game experience and moral reasoning is deserving of further research attention.

Strengths, Limitations, and Future Research

Despite initial compelling findings in this study, it suffers from several limitations worth noting. First, the sample size was small, making all generalizability issues

inherent in small samples valid concerns. The detailed nature of the analyses offered a close look at reasoning, but also influenced the size of the sample that was obtained. Second, although the think-aloud protocol may offer some insight into decision-making and reasoning, the process of talking through decisions may in itself influence the decisions. We argue that the think-aloud protocol merely reflects one's natural thought processes. However, it is possible that by asking players to think aloud, the decision-making itself was influenced. Thus, it is unclear how the validity of the data is influenced by the method.

Lastly, this study used only one video game chosen for its slow-paced, reflection-inducing action. *Fallout 3* is typical of a genre of video games where moral dilemmas offer players an opportunity to act in a variety of ways, both ethically and less so. However, other games, not known for their slow-paced, moral reflection (e.g., the Grand Theft Auto series, *Gods of War*, many first-person shooter games) also provide opportunity for making decisions that are ethical or not. Thus, although the stimulus material was limited to one game, one possibility is that moral consideration is possible in many (if not most) video games. On the other hand, it is possible that we cannot generalize to other kinds of games, such as first-person shooters, because they are, for example, faster paced. In any case, future research should examine moral foundations and moral decision-making in a variety of video game contexts in order to gain a better understanding of moral processing in video games.

Despite these limitations, we were able to examine moral reasoning in video game play through a rather unique think-aloud protocol. Whereas previous studies of video game play generally depend on retrospective accounts of various experiences (e.g., Klimmt et al., 2006) and focus on the moral decision and not the reasons for that decision (e.g., Weaver & Lewis, 2012), participants in the present study recorded their decisions and reasons in near-real time, making the findings of this study a relatively unique contribution to literature. Additionally, we found evidence for a relationship between certain real-life moral foundations and the use of those foundations in video game play. Finally, results indicated a positive relationship between previous video game experience and the use of morals during game play. This finding may be due to differences in experiential and rational processing based on previous experience. Studying these different routes of processing during game play to better understand the antecedents and outcomes of such processing is an important direction for future research in this area.

Notes

- 1 In order to ensure that there were no significant differences based on data collection site, we ran each statistical analysis for each sample. Although there were less statistically significant relationships when using site 2 data only, these relationships were in the same direction as those using site 1 data, and the significant relationships in the site 1 data were robust to the addition of site 2 data. Thus, we suspect differences are due to a power issue, and not differences in terms of data collection site.

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Networked Cultural Diffusion and Creation on YouTube: An Analysis of YouTube Memes

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Networked Cultural Diffusion and Creation on YouTube: An Analysis of YouTube Memes

Weiai Wayne Xu, Ji Young Park, Ji Young Kim, and Han Woo Park

Web 2.0-based cultural diffusion occurs not only through viral word-of-mouth communication but also through Internet memes in which cultural consumers review, resemble, and recreate old cultural components, resulting in the creation of new cultural forms. YouTube features a platform for memetic creation with a host of user-generated parodies, reviews, and mashups derived from viral videos. This study examines the cultural ecosystem of YouTube memes inspired by Korean artist Psy's viral production "Gangnam Style." The study focuses on the salience of various genres of YouTube memes and structural connections between memetic videos. According to the results, the viral video of "Gangnam Style" sparked a sizable amount of user creativity, including remixes, parodies, self-directed performances, and reviews, among others. A network analysis of connections between memetic videos shows that various memetic genres drew different levels of audience attention and actions across various stages of the 3-month-long diffusion process. In addition, the content of the traditional mass media played a key role in giving the viral video wider publicity and acknowledgement, but this role was later shared by user-generated content.

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Cultural Diffusion on Web 2.0

Like any other form of diffusion, cultural diffusion occurs through a connected social system (Rogers, 2003). This social system can be centralized around resourceful institutions such as governments and firms (Mayer & Timberlake, 2014). A government can promote its national culture to enhance the country's *soft power* (Jin, 2006; Otmazgin, 2008). The global reach of a national culture can be tied to the country's economic and political influence (Kim & Barnett, 1996). However, such a social system has been increasingly decentralized to more closely reflect a grassroots system as a result of the adoption of Web 2.0 tools. Web 2.0-based cultural diffusion depends on word-of-mouth communication and crowdsourced content creation by online communities of engaged users (Shifman, 2012). This has led scholars to examine the role of Web 2.0 in cultural diffusion (Zhang, 2011) by focusing on video-sharing sites such as YouTube (Xu, Park, & Park, 2015). The present study extends the literature by focusing on a less covered diffusion stage.

The social system on Web 2.0 platforms consists of people and objects connected by collective viewing, sharing, and commenting (Xu et al., 2015). This collective action forms a *cultural public sphere* (Burgess & Green, 2013). In addition, such activities embody various stages of Rogers's (2003) diffusion framework. More specifically, users' selective viewing and sharing reflect the *awareness* and *interest* stages, and their commenting behavior underlies the *evaluation* stage (Xu et al., 2015). Previous studies of video diffusion have revealed demographic factors and interaction patterns of users involved in these stages. For example, van Zoonen, Vis, and Mihelj (2011) found that videos of citizens' reactions to an anti-Islam viral film were heavily commented on but that only a small number of commenters interacted with one another. In addition, commenters often subscribed and talked to other users with similar political and cultural beliefs. Xu et al., (2015) showed that attitudes toward cultural offerings on YouTube can be predicted by the similarity of the commenter's cultural background to the culture represented in the video. The later *trial* stage, however, has received less research attention. This stage corresponds to the notion of Internet memes through which people experiment with new cultural forms by adding to and altering existing ones. Few studies have focused on this stage in the context of Web 2.0-based cultural diffusion. Therefore, the present study examines YouTube-based memes for cultural diffusion by focusing on the content and structure underlying memes. The study starts with an argument about the value of analyzing memes, and in particular, it maintains that Web 2.0-based cultural diffusion is facilitated not only by the viral diffusion of the original content but also by the viral creation inspired by the original content. The study develops a webometric framework by combining content and network analyses to examine the characteristics of the content and structure of memes and proposes research questions based on two aspects of memes: their content and structure.

Memes

A *meme* is an idea, behavior, style, or structure that spreads from one person to another within a given culture (Dawkins, 1976). One popular type of meme in the pre-Internet age is the derivative parody by television fans. Jenkins (1992) described these fans as “textual poachers,” who are not only passive readers but also producers who enrich original cultural products. Web 2.0 applications lower the barrier for memetic creation. In Web 2.0 environments, memes best capture the vibrant remix culture (Burgess & Green, 2013). More specially, users can edit different segments of videos and remix them to create video mashups. They can also imitate actions and styles in original videos and create derived works in the form of a parody or pastiche. Derived videos in such formats are not some direct copying and forwarding of original content, but a form of resembling and recreation based on existing memetic elements.

The memetic creation represents a broader trend in Web 2.0-based for cultural diffusion. That is, cultural consumers are empowered to contribute user-generated content to challenge the traditional sense of information control (Barzilai-Nahon, 2008; Shoemaker, 1991). They are the *gatekeepers* who select information through sharing (Meraz & Papacharissi, 2013; Shoemaker, 1991). The sharing provides a basis for virality, which deals with the dissemination of content through word-of-mouth communication (Barzilai-Nahon & Hemsley, 2013). Moreover, cultural consumers embark on the modern-day sense of networked gatekeeping, by *shaping* (giving a particular form of information), *repetition* (saying, showing, writing, and restating; making; doing; or performing again), and *manipulation* (changing information by artful or unfair means) (Barzilai-Nahon, 2008; Shoemaker, Eichholz, Kim, & Wrigley, 2001). These three behaviors constitute memetic creation.

Meme underlies the blurring of the line between content consumption and production (Bruns, 2008). Corresponding to the notion of meme are a few terms for this new participatory culture in Web 2.0. A widely used term is *produsage* (Bruns, 2008), which posits that average users not only passively consume but actively create content. In addition, the term *configurable culture* taps the same phenomenon (Sinnreich, 2010; Sinnreich, Latonero, & Gluck, 2009). The word *configurable* implies that the boundary of a cultural product is fluid such that users can edit and manipulate original content into something new to expand the old cultural boundary. Taken together, both produsage and configurable culture embody a change in the power dynamics in cultural creation.

Launched in 2005, YouTube has become the hub of user-generated videos as well as organization-produced media content. The significance of YouTube lies in both *virality* and *memes* (Shifman, 2012). Although virality gives public exposure to a cultural phenomenon, it deals only with the diffusion of one specific cultural offering. In contrast to virality, memes address the diffusion and creation of a whole host of content that can contribute to the recognition of the original culture.

Context: The Viral Video of “Gangnam Style”

This study is based on the case of Korean artist Psy’s “Gangnam Style” (GS), which has been viewed close to 2 billion times on YouTube as of May 2014, making it one of the most watched YouTube videos.¹ The GS video contains a variety of *memetic* elements, including its horse dance, music, lyrics, and clothing, among others, making it an ideal case for studying YouTube-based memes. Broadly, the video represents the phenomenon of Korean popular culture (Kpop), which has gained global success through TV dramas, music, and movies as well as through the promotion of Korean electronics manufacturers (Yecies, Goldsmith, & Lee, 2011). Kpop has influenced not only neighboring countries in Asia, but also various countries in Latin America, whose local cultures are sharply different from Korean culture (Choi, Meza, & Park, 2014). Kpop’s vast global reach may illustrate the unique role of Web 2.0 in diffusion (Xu et al., 2015).

The Content and Structure of Memes

Despite the cultural significance of memes, scholars’ attention to the YouTube culture has been overshadowed by their interest in other popular social networking sites such as Facebook and Twitter (Thelwall, Sud, & Vis, 2012), particularly in the case of YouTube-based memes. Only a few studies have analyzed memes in the context of a digital culture. Shifman (2012) used this concept to refer to user-generated videos that resemble and recreate elements from existing viral videos. Based on this operationalization, scholars in computer science and informatics have used algorithms to identify common memetic elements in different videos (Xie, Natsev, Kender, Hill, & Smith, 2011) and predict content diffusion through video sharing (Weng, Flammini, Vespignani, & Menczer, 2012). Such efforts have led to important insights into *content* features of memetic videos. More specifically, memetic videos typically feature ordinary people, involve male characters, emphasize humor and whimsical lines, and convey simple and repetitious storylines (Shifman, 2012). In term of music-related videos, Park, Jang, Jaimes, Chung, and Myaeng (2014) revealed various categories of memetic music videos, including *cover songs*, *remix*, *acoustic*, *dance*, *parodies*, *remakes*, *reactions*, and *fresh mobs*. In a nutshell, previous studies have classified a wide range of memetic content, and consistent with this direction, this study proposes the following research question about the salience of various genres in memes inspired by the GS video:

RQ₁: What video genres are inspired by the original GS video and how salient is each genre?

Previous studies have overlooked the underlying structure of memes. In particular, the question of how a video is connected to other videos in the same genre remains unanswered. Structural connections between different content objects represent an

important part of the Web ecosystem supporting diffusion (Chung, Cho, & Park, 2014). On YouTube, various memetic videos are connected to one another to form an integrated memetic cultural ecosystem centered on the original cultural piece. The whole ecosystem of memes can be viewed as composed of multiple intertwined *objects* (e.g., pictures, videos, and text) created and disseminated by interconnected *actors* (Salah, Manovich, Salah, & Chow, 2013). Connections between actors and those between objects can be examined through the network analysis technique. Network analysis reflects a sociological approach to the examination of the structure of social relationships and interactions between human beings as well as semantic and thematic relationships between content objects (Al-Haidari & Coughlan, 2014; Danowski & Park, 2014; Wasserman & Faust, 1994). In the analysis of meme networks, individual objects are viewed as *nodes* in a network. These nodes are connected to one another by *ties*. Different from social ties based on the flow of interactions, friendships, and shared interests (Hansen, Shneiderman, & Smith, 2011), an object-object network describes connections between videos based on certain common attributes (hereafter referred to as “video networks”). That is, YouTube videos are connected when two videos are topically similar (i.e., videos A and B are connected when they have similar descriptions or keywords) or draw some attention and action from the same user (i.e., videos A and B are tied when both are commented on by the same user). Such networks require network- and nodal-level analyses. At the network level, the structure of a network is examined along its size, density, centralization, and clustering. Here a video network with a high level of density means that most videos are commented on by the same set of viewers. In addition, a high level of clustering means that videos form separate and disconnected cliques. That is, a subset of videos draws some common attention and action from the same audience group, whereas other videos do not. Overall, structural features of a network reveal how different types of videos draw audience’s evaluation. In this regard, the following research question is proposed:

RQ₂: What video genres better draw viewers’ collective attention and engagement?

Based on the aforementioned network framework at the nodal level, video objects occupying central positions in a network tend to be those containing influential content elements that interest and engage users of varying interests (Hansen et al., 2011). Central memetic videos are more influential than other videos and can serve as a model in the continuous stream of remixing and re-creation of original cultural symbols (Salah et al., 2013). Another often discussed nodal-level role is the *bridge*. More specifically, a bridge node links two otherwise disconnected groups and brokers the flow of information or influence across groups (Burt, 2001). In a video network, video objects in a bridge position connect different types, formats, and styles of videos (Hansen et al., 2011). Overall, network positions reveal the role of a video object in the ecosystem of cultural creation. In this regard, the following research question is proposed:

RQ_{3a}: Based on network positions, what videos and actors they represent are more likely to influence other videos?

Given that YouTube is a platform used by average users as well as by established media organizations, it is important to further examine the source identity of videos based on their network positions by distinguishing between individuals and organizations and between amateurs and professionals. Kleinberg (1999) and Weber and Monge (2011) pointed out three salient actors in networked content creation and diffusion: *sources*, *authorities*, and *hubs*. According to the source-authority-hub (SAH) model (Kleinberg, 1999), authorities gather and filter original sources. *Authorities* typically refer to established media organizations with topic expertise. *Hubs* are online entities that link and direct average users to certain content. This model has been applied to Web site hyperlinking in news diffusion (see Weber & Monge, 2011) and is also applicable to the present context of memetic cultural creation. In memes, a source refers to the original viral content; authorities refer to media organizations that amplify the reach of original content by acting through media outlets' traditional roles as opinion leaders and gatekeepers; and hubs refer to engaged users who not only watch original content but also create a memetic culture through remixing and resembling to serve a role as an ambassador of the original content. In this regard, the following research question is proposed:

RQ_{3b}: Based on network positions, what types of actors (sources, authority figures, or hubs) play a central role in memetic creation?

Connections underlying a meme form a communication system (Salah et al., 2013). Like any social system, it emerges, grows, matures, and eventually declines (Monge, Heiss, & Margolin, 2008): Such structural evolution is manifested in the changing quantity and variety of network connections. According to community evolution theory (Monge et al., 2008), there is frequent and unselective tie building in early stages, and this aims at establishing as many connections as possible. This stage leads to an increase in network size and the number of ties in a network (the variation stage). In later stages, tie building becomes selective and preference-based, reflecting a decrease in the quantity and variety of connections established (the selection stage). In the end, some connections are retained over time and become routinized, whereas the rest decline (the retention stage). Although not all network systems perfectly match these three stages. Those connections underlying memes undoubtedly change over time. That is, some videos, genres, and actors may become more or less salient over time. In this regard, the following research questions are addressed from a longitudinal perspective:

RQ₄: How does the salience of each video genre change over time?

RQ₅: Based on the ability to draw viewers' collective attention and engagement, how does the influence of each video genre change over time?

RQ_{6a}: Based on network positions, how does the centrality of a video change over time?

RQ_{6b}: Based on network positions, how does the role of different actors (sources, authority figures, and hubs) change over time?

Methods

Data Collection

The search query “Gangnam Style” was used to extract videos with titles, keywords, descriptions, categories, or usernames matching the keyword. These GS-related videos were the nodes in video networks to be examined. A tie in the network was established when two videos shared the same commenter. In other words, the relationship between two YouTube videos was defined in terms of the number of co-commenters. Three rounds of data collection were conducted: one in August (a month after the release of the GS video) and two additional rounds in September and October. Video clips were retrieved from YouTube API services (for a detailed description of the scholarly use of API services in social sciences, see Sams, Lim, & Park, 2011). At each data collection point, the most recent 1,000 comments were retrieved, which reflects a popular approach in YouTube studies (see Shapiro & Park, 2015). Each collected video was manually examined for its relevance to GS. After the deletion of irrelevant videos, 628 clips were retained in the sample for August; 841, for September; and 665, for October.

To address RQ₁ and RQ₄ concerning the salience of various video genres inspired by the original GS clip, two coders inductively extracted a list of video genres from selected videos (presented in Table 1). Video genres were classified based on the coding scheme in Park and colleagues (2014) for music-related videos. The present study is the first to apply this classification method to understand the topology of derived videos in cultural creation. The following five genres were considered: 1) official, 2) original, 3) remix, 4) participation, and 5) evaluation. Table 1 summarizes several interrelated sets of subtypes. More specifically, the official category referred to officially promoted videos uploaded by Psy’s official channel. Similarly, the original category included broadcast content, public performances, and music videos intended to spread GS in cyberspace. This category represented cultural promotion through the traditional mass media and offline events. In addition, the official and original categories focused mainly on cultural activities initiated by GS authors (the original GS producer or mass media outlets partnering with the GS producer). The remaining categories focused on cultural creation initiated by amateur users. More specially, the remixing category had three subtypes of *remix*, *background music*, and *lyrics* and included video clips produced by YouTube users’ copy and modification of various elements of the original GS video. The participation category was composed of *dances*, *parodies*, and *cover songs* and included dynamic

Table 1
Genre Classification for GS-Related YouTube Videos

Genre	Genre subcategory	Videos including content about
Official Original	Channel	Clips released by Psy's official channel
	Broadcasting	GS videos promoted by traditional mass media outlets on YouTube
Remixing	Concert	Clips of public live performances of GS
	Music video	The officially videotaped performance of GS
	Remix	Creating a derived version of GS by resembling and recreating elements in the original GS video
Participation	Background	Videos in which the GS song serves as unobtrusive background music
	Lyric	GS lyrics translated in different languages
	Dance	Clips of users moving rhythmically to the GS song in a quick and lively manner
	Parody	A humorous and exaggerated imitation of GS, typically following a set sequence of horse-riding steps
Evaluation	Cover	Playing the GS song by using various musical instruments
	Review	Evaluating GS (formally) through a critical lens
	Reaction	Clips of users' verbal expression of opinions on GS.

visual elements in terms of users' physical engagement and creativity. Finally, the evaluation category had the two most important subtypes: *reviews* and *reactions*. These two categories included users' spontaneous judgments and criticisms about GS. These categories were exploratory in nature, requiring further empirical verification. After the finalization of the coding procedure based on content categories, two coders majoring in media and communication science were trained to code videos. For internal reliability, the coders independently coded about 10% of the whole video sample for each month. According to the results, all categories showed sufficient internal reliability. As shown in [Table 2](#), several indicators of inter-rater reliability were assessed using *Recal2* (Freelon, 2010).

Table 2
Inter-Rater Reliability Indicators

Sample	Percentage agreement	Scott's pi	Cohen's kappa	Krippendorff's alpha	N agreement	N disagreement	N cases
August	81.17	0.75	0.75	0.76	69	16	85
September	77.38	0.73	0.73	0.73	65.00	19.00	84.00
October	73.75	0.69	0.70	0.70	59.00	21.00	80.00

To address RQ₂ and RQ₅ concerning the structure of video networks, a global video network consisting of videos in all genres, along with subnetworks, based on identified genres (e.g., a subnetwork of dance videos) was examined. As discussed, the structure of networks was examined based on size, clustering (i.e., subcomponents), and density. Density can be used as a proxy for the level of concerted, mutual, and intensive user attention and engagement. Density was measured as the actual number of ties divided by the possible number of the same commenters across videos (Wasserman & Faust, 1994). Subcomponents revealed clusters within each genre-specific subnetwork.

To address RQ_{3a}, RQ_{3b}, RQ_{6a}, and RQ_{6b}, positions in the video network were accessed by degree centrality and betweenness centrality. Degree centrality was calculated as the number of connections with others within a network (Freeman, 1979). Betweenness centrality was measured as the frequency of a node located on the shortest path connecting everyone else in the network (Freeman, 1979).

Results

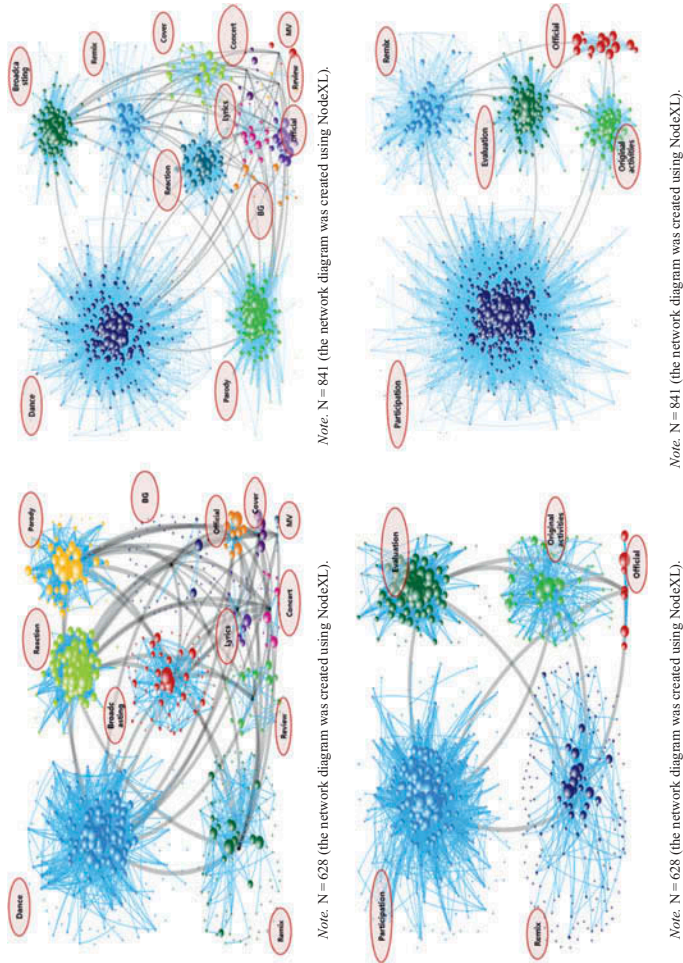
Figure 1 visualizes various video networks pertaining to each specific genre. Blue lines indicate internal ties between videos in the same genre category, and gray lines show connections between various genre categories. Node size was determined based on degree centrality. Visually, different types of GS-inspired videos were linked by mutual

To address RQ₁, Tables 3a–3c show the number of GS-inspired videos in each genre category. The most salient type included dance videos (192), generally video clips of average users moving rhythmically to the GS song in a quick and lively manner. This was followed by remix videos (104). These videos represented users' creativity in mashing up existing GS elements to create new cultural objects. The third most prominent type included reaction videos (65), in which users verbally expressed opinions on the GS video.

For RQ₄, which addressed the changed salience of each genre category over time, the prominence of dance videos remained consistent over the three-month period, but parody videos started to dominate in the second month. In addition, reaction videos gradually became less prominent, whereas broadcast videos (content produced by the traditional media) increased in their prominence. Table 4 shows the number of videos in each genre over the three-month period. The salience of evaluation-related videos (reaction and review videos) decreased over time. However, participation-related videos generally retained their prominence.

For RQ₂ and RQ₅, which addressed the level of mutual audience attention and actions from different genre of videos, the results for the number of ties in each subnetwork indicate that user-generated videos were more likely to induce comments than the original and broadcast videos. Here the top three genres based on the number of ties included dances, reactions, and parodies. The subnetwork composed of dance videos, despite being the largest subnetwork, showed a relatively low

Figure 1
Networks of GS-inspired Videos by Genre A Video Network in August for Subcategories.



Note. N = 628 (the network diagram was created using NodeXL). A video network in September for subcategories Note. N=841 (the network diagram was created using NodeXL). A video network in August for major genres Note. N = 628 (the network diagram was created using NodeXL). A video network in September for major genres Note. N = 841 (the network diagram was created using NodeXL).

Table 3a
Network Indicators by Video Genre in August

Genre	Videos	No. of the same commenters	Subcomponents	Average geodesic distance	Density
Dance	192	3796	49	2.112	0.104
Remix	104	324	45	2.676	0.03
Reaction	65	2678	4	1.278	0.644
Broadcasting	62	378	12	2.417	0.1
Parody	62	886	11	1.697	0.234
Background	60	10	56	1.2	0.003
Review	31	52	18	2.724	0.056
Lyrics	17	30	8	1.397	0.11
Concert	15	24	6	1.94	0.114
Official	9	66	1	0.963	0.917
Cover	6	20	1	1.111	0.667
Music video	5	2	4	0.5	0.1

Table 3b
Network Indicators by Video Genre in September

Genre	Videos	No. of the same commenters	Subcomponents	Average geodesic distance	Density
Dance	323	11770	17	2.113	0.113
Parody	142	6002	5	1.764	0.3
Remix	98	748	13	2.413	0.079
Broadcasting	98	3802	6	1.57	0.4
Reaction	56	1586	4	1.414	0.515
Cover	37	374	4	1.725	0.281
BG	26	36	11	2.442	0.055
Lyrics	17	156	1	1.419	0.574
Official	14	174	1	0.969	0.956
Concert	12	8	8	1.28	0.061
Review	10	14	4	1.837	0.156
MV	8	4	6	0.5	0.071

density score (0.104), indicating that only a small set of videos in this category attracted shared attention and actions from users. In addition, the dance category had more subcomponents, indicating audience attention and engagement with videos in this category were not equally distributed. Noteworthy is that the reaction

Table 3c
Network Indicators by Video Genre in October

Genre	Videos	No. of the same commenters	Subcomponents	Average geodesic distance	Density
Dance	167	3668	6	2.125	0.132
Parody	143	5688	3	1.775	0.28
Broadcasting	105	4022	5	1.656	0.368
Remix	89	1170	7	2.038	0.149
Cover	30	312	1	1.682	0.359
Reaction	23	194	2	1.595	0.383
BG	22	36	9	1.577	0.078
Concert	22	196	2	1.492	0.424
Review	20	46	6	2.09	0.121
Lyrics	19	146	5	1.236	0.427
MV	13	46	3	1.669	0.295
Official	12	128	1	0.944	0.97

Table 4
The Number of Videos Pertaining to Each Genre in August, September, and October

Genre category	August	September	October
Dance	192	323	167
Remix	104	98	89
Reaction	65	56	23
Broadcasting	62	98	105
Parody	62	142	143
Background	60	26	22
Review	31	10	20
Lyrics	17	17	19
Concert	15	12	22
Official	9	14	12
Cover	6	37	30
MV	5	8	13

category showed the highest density score (0.644), indicating a high level of mutual involvement and fewer subcomponents (only 4). However, based on 3-month data, the density of a subnetwork of reaction videos decreased over time, indicating that the commenting behavior gradually focused on a smaller set of videos. Accompanying this trend, the number of subcomponents for all top genres

Table 5a
Top 20 Videos by Degree and Betweenness Centrality in August

URL	Degree	Betweenness	Type
Bz95ahmCEGQ	278	5771.061	Broadcasting
-wKFy2c76RI	262	3907.588	Parody
b-KX6GB5oCE	261	3358.667	Broadcasting
uz6esy1YOIY	254	3202.853	Parody
nvMw6e9T85M	252	3128.221	Parody
WEIEFYcf9M4	251	2939.652	Remix
byUFg7pyBP4	249	2777.700	Parody
uYBCgV6a5kE	247	2700.788	Official
Wv9MwOUIKSU	244	2516.314	Parody
XxH71Q33-ug	238	2325.161	Official
KkGa1yojimQ	236	2313.224	Reaction
cAypCxN-QYk	232	2263.028	Dance
UMywGy5m_QQ	232	2244.395	Parody
qzxxk4tU-mi8	230	2215.816	Reaction
8CY7oB57nvY	229	1993.636	Remix
893WQWr0Nfo	228	1931.180	Reaction
kPJgk1ULX_I	226	1843.475	Remix
kAWS57Xlwoc	226	1798.360	Reaction
fo7NJdDgRN8	225	1789.383	Remix
eUSUY5ag_64	222	1716.830	Dance

decreased, implying that for those videos receiving mutual audience attention, this attention became more equally distributed.

For RQ_{3ar} , RQ_{3br} , RQ_{6ar} , and RQ_{6br} , the first of the two most central videos in August was the GS video spotlighted by CNN International (Asia). It was central in terms of both degree centrality and betweenness centrality (Table 5a). Another clip from SBS (Seoul Broadcasting Station) used the popular Korean song during the 2012 London Olympics Special and was highly connected to other videos. In September and October, user-generated videos (dance and parody videos) were dominant, and the influence of broadcast content by media organizations declined (see Tables 5b and 5c).

Discussion

Memes represent a new concept in cultural diffusion. Web 2.0-based cultural diffusion underlies two components: virality and memes. Although virality is a direct gauge of the popularity of certain cultural content, with the platform’s participatory nature, cultural diffusion has come to involve not only the dissemination of the original cultural object but also the user-initiated creation of new cultural symbols

Table 5b
Top 20 Videos by Degree and Betweenness Centrality in September

URL	Degree	Betweenness	Type
RutnTilXbBk	473	9751.869	Dance
mwjVPRcClws	469	8114.486	Parody
KIAkjRBPDDQ	462	7960.75	Dance
Wv9MwOUIKSU	446	7503.991	Dance
nSveYYTjChw	443	7405.776	Parody
1GlnlyfZdA4	443	7190.821	Parody
Bz95ahmCEGQ	437	6603.271	Broadcasting
fRMyyK-Orfs	436	6451.789	Broadcasting
Vii3Tm9ZihU	436	6095.653	Dance
byUFg7pyBP4	429	5774.065	Official
Vcjns6Di6ZE	415	5736.451	Broadcasting
cAypCxN-QYk	411	5733.877	Broadcasting
GGyLYzm28O0	408	5722.742	Reaction
7dlhhfpFBTk	407	5710.547	Parody
bDEYzMRMsVk	406	5691.883	Reaction
zyBPKe0CIYE	405	5435.162	Parody
UBWPkLCiSrM	405	5291.887	Broadcasting
zQsh8xEPIds	402	5255.842	Reaction
kAaZaK8_y6s	402	5145.438	Official
RutnTilXbBk	473	9751.869	Dance

and ideas centered on the original object. Therefore, memes underlie a new value-creation process in that they add new meanings to the original culture. An examination of memes requires scholars to look beyond a single cultural object and analyze the derived cultural ecosystem as a whole. Such a systematic perspective is supported by the use of content and network analysis methods. This study reveals the content of various memetic creations as well as their salience and influence based on structural connections in networks of memetic videos. The study first maps and visualizes a cultural ecosystem and shows the salience of its various genres of memetic videos by the frequency of their appearance. Then the study explores the connections between various parts of the ecosystem for a better understanding of how various modes of cultural creation and user participation are integrated by mutual audience attention and actions. Third, the study takes a longitudinal approach to examine the change in salience and connections during a 3-month period of cultural diffusion. The results provide some important insights.

First, the viral GS video sparked a sizable amount of user creativity manifested in different forms of user-generated content created. User-driven cultural creation was the most prominent type of GS-inspired video. The two most prominent types pointed to two forms of participation: digital creation and physical acting. The former was exemplified by remix videos, whereas the latter, by clips of viewers dancing. A

Table 5c
Top 20 Videos by Degree and Betweenness Centrality in October

URL	Degree	Betweenness	Type
mwjVPRcClws	432	6344.606	Dance
Vcjns6Di6ZE	416	5903.59	Parody
7dlhhfpFBTk	412	5442.354	Dance
RutnTilXbBk	410	4650.159	Dance
byUFg7pyBP4	410	4617.855	Parody
fr8LU3u_y5k	409	4551.899	Parody
kAaZaK8_y6s	407	4484.046	Broadcasting
fRMyyK-Orfs	400	4477.947	Broadcasting
6clAO7w6Ypl	394	4453.336	Dance
LYz5rOMZXlg	393	4433.7	Official
kAWS57Xlwoc	386	4391.814	Broadcasting
hqX-Mx4hnM	386	4142.712	Broadcasting
C6r4y927ljM	386	3849.931	Reaction
ArfRxhJUlse	384	3836.016	Parody
bDEYzMRMsVk	382	3811.894	Reaction
2T8J1X1S5PU	381	3763.829	Parody
1GlnlyfZdA4	381	3641.18	Broadcasting
tigG4j-7b4o	378	3611.744	Reaction
TmllbyLlckg	377	3565.651	Official
0yr7FW1S5e0	374	6344.606	Dance

physical cultural imitation is arguably an extension of a digital culture to some physical reality. In addition, this imitation may influence popular culture offline. From a theoretical perspective, Shoham, Arora, and Al-Busaidi (2013) introduced three types of engagement on YouTube: *passive* engagement reflected in viewing and video channel subscription, *active* engagement reflected in commenting, and *interactive* engagement illustrated by interacting with other commenters. This typology can be extended to include physical imitations as a separate form of engagement representing a higher level of participation. Noteworthy is that cultural creation (through parodies, cover songs, and dancing) may take more time to emerge than simply cultural critiques. This may be because producing cultural critiques is less likely to require technical skills and cognitive input. Overall, various types of videos identified in the study demonstrate the memetic value of the cultural remix and recreation enabled by average users. In addition, they show the constant shifting of the importance of various memetic elements.

Second, different modes of cultural imitation and recreation may draw disproportional levels of audience attention and engagement. On the one hand, remix and imitation videos (dance videos) as a whole drew the largest number of participants, but audience attention and actions for this type of video were not equally distributed across individual videos. This implies that a small set of videos in the category drew

more mutual attention than others. Sporadic user responses to such videos raise the question of the influence of GS-inspired memetic videos. Although there was ample memetic production, the majority of memetic creations were weak because they failed to draw attention from *engaged viewers* who evaluated more than one memetic creation. Therefore, memes remained largely inspired and dominated by original cultural symbols and a minority of outstanding memetic creations. By contrast, reaction videos sparked a large number of cross-comments and substantial mutual attention, possibly because the content of reaction videos was controversial and thus provoked collective reactions from the audience. This pattern is not surprising in that reaction videos generally conveyed opinions. Taken together, these patterns imply that opinion-laden cultural critiques draw more concentrated audience attention than neutral cultural imitation and remixing. However, it should be noted that this high level of collective commenting by users in reaction videos could not be sustained because the influence of these videos diminished over time, as indicated by the density and total number of ties in the genre. This may be because viewers' interest in the cultural phenomenon of the GS video wore off, resulting in fewer reaction videos being produced. Accompanying reduced production, viewers' opinions on the video were not as divided as they were immediately after the release of the GS video. This implies the gradual acceptance to a new cultural trend. Also noteworthy is that there were many subcomponents in video categories underlying cultural imitation and remixing. This implies that there were various nuanced thematic differences within the same category. However, the number of subcomponents decreased, showing that these nuanced differences gradually dissipated as viewers became more accustomed to the culture shown in the GS video. Overall, the pattern illustrates that various memetic components played different roles in memetic cultural creation and that their importance and influence varied over time.

Third, in terms of the source-authority-hub distinction, the role of authority figures, namely the traditional mass media, continued to be prominent in the memetic cultural ecosystem. This is illustrated by the central position of mass media content. This central position indicates two things: mass media videos were extensively linked to other videos because they were reviewed and commented on by a group of engaged viewers involved not only in one-time consumption but in the continuous consumption and evaluation of a variety of similar content. Videos with high betweenness centrality drew engagement from a group of audience members who reviewed and commented on various types of videos. Videos by authority figures were prominent in the early stages of diffusion, whereas user-generated content grew to prominence afterward. This indicates that established media organizations facilitated the fame of the original video, sparking user creativity in later stages.

Theoretical Implications

The study seeks to incorporate the notion of meme into the trial stage in cultural diffusion. Noteworthy is that the trial of innovations nowadays takes place in a

networked system. Virality ensures the dissemination, whereas meme ensures the longevity of the innovation in that it is supported by a community of creators. As this study illustrates, meme is reflected in different layers of creative actions taken by different types of actors.

Limitations and Future Directions

This study has some limitations. First, memetic videos were connected in ways other than co-commenting. For example, videos were connected based on similar textual descriptions or other forms of metadata. In this study, this type of connection was not considered. Second, the sample size was limited by YouTube API restrictions, and data collection was limited by recent videos at the time of the data-mining procedure. In addition, the use of the specific case of GS may limit the generalizability of the results. Future research should adopt two approaches to provide a better understanding of YouTube memes. That is, future research should use not only betweenness centrality but also patterns of boundary-expanding videos (videos linked to other videos in other categories). Insights from this domain should provide a better understanding of how user-generated videos influence or are influenced by original content.

Notes

1. <http://www.reuters.com/article/2012/11/24/entertainment-us-psy-idUSBRE8AN0BT20121124>

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Acquiring a New Technology at Home: A Parent-Child Study About Youths' Influence on Digital Media Adoption in a Family

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Acquiring a New Technology at Home: A Parent-Child Study About Youths' Influence on Digital Media Adoption in a Family

Teresa Correa

This study examines to what extent children influence their parents' acquisition of new technologies in a country with diverse levels of technology penetration, such as Chile. It also investigates the factors that play a role in the influence process, including children's persuasive strategies (argumentative vs. non-argumentative) and parents' attitudes toward technology (perceived ease of use and perceived usefulness). Using a parent-child survey and dyadic analyses, the results suggest that youths influence their parents' acquisition of all technologies under study, particularly the Internet. Also, argumentative strategies have a greater influence than non-argumentative strategies. Finally, parents' perceived usefulness played a more important role than perceived ease of use in the influence process.

Youths have been called "digital natives" (Prensky, 2001). Although this term is somewhat problematic because it treats young people as a monolithic group with universal talent to manage digital media and does not account for their different skills and motivations (Correa, 2010; Correa & Jeong, 2011; Hargittai, 2010; Selwyn, 2009), it is undeniable that youths are more connected than their older counterparts (WIP-Chile, 2014; Zickuhr, 2010). In developed countries like the United States, more than 95% of teenagers and young people (18 to 33 years old) use the Internet, but this percentage decreases to 52% for people older than 65 (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013). Developing countries like Chile follow the same pattern. While 93% of young people 18 to 29 years old go online, only 14% of older generations do the same (60 years old and older) (WIP-Chile, 2014). Communication and consumer research suggests that children and adolescents increasingly play a role in their family communication processes (Nichols & Chaffee, 2002) and their parents' decision-making regarding purchases (Buijzen & Valkenburg, 2008). This influence increases when children have an interest in and are knowledgeable about the issue or product

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(Beatty & Talpade, 1994). Thus, it is reasonable to expect that youths' skills and interest in digital media, such as computers, mobiles, and the Internet, may influence their parents' adoption of these new technologies, and eventually open opportunities to include them in the digital world. In fact, families with children are more connected than those without them. Households with children have higher rates of Internet and cell phone usage, computer ownership, and broadband adoption than other household structures (Kennedy, Smith, Wells, & Wellman, 2008).

The literature suggests that social support and personal networks are relevant in helping individuals adopt digital technologies. Stewart (2007) coined the term "local experts" to identify the role played by individuals who act as brokers by transferring knowledge and providing help in diverse contexts, including workplaces, the home, and groups of friends. Bakardjieva (2005) characterized these brokers as "warm experts" to emphasize the sympathy needed in the technology transmission process. The household is a setting where personal networks and emotional bonding are likely to be present. In fact, the evidence suggests that family support is relevant for adults' digital learning processes (Chu, 2010). Furthermore, it has been found that many times children teach their parents how to use digital media. For example, sons and daughters are the third most important Internet learning source after "myself" and "a friend" (Correa, Straubhaar, Chen, & Spence, 2013). Another investigation that surveyed parents and children suggested that around 40% of the sample had been taught by their children how to use computers, the Internet in general, and SNSs (Correa, 2014).

Drawing from socialization research (e.g., Kuczynski & Navara, 2005), diffusion of innovation (Rogers, 1995), and planned behavior (Ajzen, 1991) theories, the purpose of this study is twofold: 1) to explore to what extent children influence their parents' acquisition of new technologies, namely computers, mobiles, and the Internet, and 2) to investigate the factors that play a role in the influence process, including children's persuasive strategies and parents' motivations toward technology. Because youths' potential influence on technology adoption needs more thorough examination not only in the United States but in countries with more varied levels of ICT diffusion, this investigation was conducted in Santiago, Chile's capital city.

Chilean Context

Chile has relatively high levels of technology diffusion compared to the rest of Latin America. Almost half (45.8%) of households have a computer (ITU, 2012) and 63% of the population uses the Internet (WIP-Chile, 2014). However, there are wide gaps by socioeconomic status (SES). For instance, more than 70% of higher SES people go online, 35% of lower SES people do the same (WIP-Chile, 2014). This comparatively high but diverse penetration provides a useful scenario to explore processes related to technology adoption.

Theoretical Framework

Bidirectional Socialization

Socialization research traditionally assumes a unidirectional pattern where the learning of new social roles, values, attitudes, and customs (Putney & Bengston, 2002) is guided by agents such as parents, siblings, teachers, peers, and the media (Grusec & Davidov, 2003). Current approaches, however, have focused on a more interactive and bidirectional process, in which both parents and children are involved in the practice of exerting influence (Kuczynski & Parkin, 2007; Saphir & Chaffee, 2002). Evidence suggests that children can alter the traditional top-down model of political socialization and influence their family communication pattern and their parents' acquisition of political knowledge (McDevitt & Chaffee, 2000). Consumer research has also suggested that children influence their parents' product purchases, particularly when they get involved in the decision-making process (Buijzen & Valkenburg, 2008).

One of the most prevalent situations in which the traditional unidirectional top-down family socialization may be challenged is in the acquisition of new technologies. In this situation, external agents of socialization such as peers and schools may influence youths to the extent that they may alter the traditional family socialization pattern. Youth acquire technology capital that can be transmitted to their parents.

Thus, the first research question to be investigated is the following:

RQ₁: To what extent do youths influence their parents'/guardians' acquisition of new technologies?

Technology Diffusion and Digital Inclusion

By influencing the acquisition of digital technologies in the household, youth can be regarded as agents of digital inclusion in a family. Digital inclusion focuses on multiple predictors that explain the adoption and use of digital technologies including social and cognitive factors (Hargittai, 2002; Newhagen & Bucy, 2004; van Dijk, 2005). Social factors refer to the cultural context embedded in a social group (Newhagen & Bucy, 2004). Cognitive factors refer to individual psychological resources used to access the technology (e.g., motivation).

Diffusion of innovations theory (Rogers, 1995) offers a useful perspective to analyze the social factors related to technology adoption in a family, particularly the role played by children in the process. Rogers (1995) proposes that a new idea is spread in a social system (e.g., the family) through two types of interpersonal channels: opinion leaders and change agents. Opinion leaders obtain information from different sources (e.g., mass media, peers) and then influence other people's behaviors. Compared to followers, they are more exposed to external communication, become entry points of new ideas into their social system, are reachable

through formal or informal discussions, and are more innovative. Change agents are individuals who become key links between a resource system (i.e., the change agency) and the members of the social system. They use opinion leaders to spread the information. They have to develop a need for change by making their clients aware of the needs and the new alternatives, establish rapport by developing credibility in their competence and empathy, motivate an interest in the innovation, and seek to change people's behavior.

Young people have several characteristics of these two roles for the diffusion of ICTs in their families. They have greater exposure to digital media through their school and friends and eventually serve as entry points for new ideas in their families. Parents can reach youth through face-to-face communication in informal settings (i.e., the household). Finally, youths are more innovative and technologically competent than their parents (followers). Strictly speaking, the role of change agents is satisfied by organizations that promote technological products. Nevertheless, youths can fulfill this role by persuading their parents about the need for the new technology in the household, about their competence with digital media, developing empathetic strategies (i.e., taking into account the family's and parents' needs), and encouraging an interest in the technology. Previous studies based on interviews have found that young children and teens use diverse persuasive strategies to convince their parents about the necessity of the new technology. For instance, when the home Internet connection was becoming more widespread, children developed arguments about the need and functionality of the new technology for their parents and the family (van Rompaey, Roe, & Struys, 2002).

Similarly, consumer research has also found that, according to parents and children, the most effective strategies for youths obtaining what they want are bargaining and reasoning. While bargaining involves making deals ("If you do this, I'll do that"), reasoning implies making logical arguments intended to reach an agreement (Palan & Wilkes, 1997). Both argumentative strategies take into account the perspective of the other party and seek to create an agreement between children and parents. By contrast, the least effective strategies include begging, whining, demanding, or showing anger (Palan & Wilkes, 1997). Thus, it is hypothesized that,

H₁: Youths who use more argumentative persuasive strategies will have a stronger influence on their parents' technology adoption than will those who use non-argumentative persuasive strategies.

Regarding the cognitive factors associated with digital media adoption, van Dijk (2005) proposed a model of "successive kinds of access to digital technologies." In his model, motivation influences material access (possession of the technology), which in turn predicts skills, and usage. When the process of technology appropriation is completed, and a new innovation arrives, the process starts again.

Because motivations are key predictors of digital media adoption, this study relies on a theory that places great emphasis on extrinsic motivational factors and social

influences such as the theory of planned behavior (Ajzen, 1991). This theory proposes that three different factors determine the intention to perform a behavior such as technology adoption: attitude toward the behavior, perceived behavioral control, and subjective norm. Attitudes deal with the positive or negative evaluation of the behavior and perceived behavioral control “refers to the perceived ease or difficulty of performing the behavior” (p. 188). These two factors are associated with the two most predictive variables of the technology acceptance model (Davis, 1989), which is inspired by the theory of planned behavior. Attitude toward the behavior is associated with perceived usefulness of the technology and perceived behavioral control is related to perceived ease of use of the technology. Finally, subjective norm or social influence (Fishbein & Ajzen, 1975) is defined as “the degree to which an individual perceives that important others believe he or she should use the new system” (p. 451). This factor is particularly relevant for the examination of the bottom-up influence of technology adoption because it suggests that the external influence of children may become relevant for their parents when adopting the new technology. A study on Internet acceptance among older Chinese adults (older than 50 years old) found that both perceived ease of use and perceived usefulness predicted older adults’ Internet adoption (Pan & Jordan-Marsh, 2010). It also found that social influences, which included people who are important for older adults, played a critical role in the intention to use the Internet. Thus, the second hypothesis predicts that:

H₂: Youths’ influence on parents’ technology adoption will be stronger among families whose parents perceive the new technology as more useful and easier to use.

Methodology

Participants and Procedure

To investigate the influence exerted from children to parents in digital media acquisition in a family, this project used a self-administered paper-and-pencil survey conducted in Chile among dyads of parents and children. This dyadic survey was conducted among both school-aged children and their parents or guardians about technology adoption. It was administered in three co-educational schools that included at least the last two years of middle school education (7th and 8th grades) and full secondary education (9th to 12th grades) in Santiago, Chile, in November of 2011. Following a stratified sampling method, three schools were chosen: a private-paid school located in a high-income area, a semi-private school in a middle-income area, and a foundation-owned school that targets disadvantaged populations in a low-income district. Each student answered a paper-and-pencil questionnaire during school hours and then received one extra questionnaire in an envelope to be completed by one parent/guardian. If more than one child brought a survey home,

parents had to complete the survey with that specific child in mind. The children received an incentive if they returned the parents' questionnaires. All children who attended classes at the moment of data collection responded to the survey. In total, 381 children and 251 parents completed the survey, leading to a parents' response rate of 66%. Of the completed surveys, 242 child-parent dyads were useful for the dyadic data analysis.

Dyadic Analysis

Because in this project both parents and children were surveyed, in some data analyses both parents' and students' data were used. However, various statistical examinations were based on dyadic data analyses, which implies using the parent-child dyad as unit of analysis. Because in this study the individuals belonged to only one dyad, I used a standard dyadic design. In this type of design, both persons were measured, and for some factors, both were measured on the same variables. Following standard dyadic analysis (Kenny, Kashy, & Cook, 2006), the non-independence level among distinguishable dyads such as parent-child was measured with Pearson r correlation for continuous variables. Then, for the general analyses, it was necessary to create a dyadic dataset with dyadic variables by computing the average of each member score in the variable of interest. After conducting this procedure, which corrects for non-independence of errors, the correlation and regression analyses were conducted as usual.

Description of Variables

Youths as Brokers in Technology Adoption. To explore youths' influence on their parents' adoption of digital media, parents were asked, "Many parents or guardians buy a new technology because: they notice their children need it, their children ask for it, or their children show them that it is on the market and how it works. If you think about your *children in general*, to what extent have your children influenced you to buy the following technologies where 1 is 'not at all' and 5 is 'very much'?" There was also an option "I don't have it," for which the score was 0. Because this project involved dyadic data analysis, where parents' and children's scores were averaged, parents were also asked to think about *the child who is answering the survey at school*.¹ In the youth's survey, the question's wording changed accordingly: "If you think about your parents or guardians, to what extent have you influenced them to buy the following technologies?" The technology options were: desktop computer, laptop, basic cell phone, touch cell phone, smart phone, and Internet connection.

Because parents' and children's scores were correlated and, therefore, non-independent, dyadic dependent variables were created.² Then, as explained in the analytical strategy of dyadic variables, to create the dyadic variable "influence on

desktop computer adoption," I averaged the variable "influence on desktop computer adoption" for both parents' and children's samples³ ($r = .41$, $p < .001$, $M = 2.50$, $SD = 1.23$). Then, I followed the same strategy for laptop ($r = .45$, $p < .001$, $M = 2.67$, $SD = 1.29$), basic cell phone ($r = .36$, $p < .001$, $M = 2.29$, $SD = 1.24$), touch cell phone ($r = .36$, $p < .001$, $M = 2.35$, $SD = 1.25$), smartphone ($r = .51$, $p < .001$, $M = 2.05$, $SD = 1.36$), and Internet ($r = .34$, $p < .001$, $M = 3.21$, $SD = 1.36$).

Youths' Persuasive Strategies. Based on consumer research (Palan & Wilkes, 1997), youths' persuasive strategies to influence their parents' adoption of new technologies were measured with the following question in the parents' survey: "When your children want you to buy new technology, what kind of strategies do they use to influence you in favor of the adoption of the new technology?" In the youths' survey, the question and the item's wording were changed accordingly (i.e., When you want your parents or guardians to buy a new technology...). This question was measured on a scale from 1 (*never*) to 5 (*always*). The options were: offer deals (e.g., If you buy this, I will do that; If you buy this, I will pay for part of it); give reasons for why this would be beneficial for the parents, family, or themselves; say everyone else has it; ask for it directly; beg for it; and demand it.

Because five items between the parents' and children's surveys were correlated and one approached significance⁴—which suggested non-independence between factors—the scores were averaged and dyadic variables on different persuasive strategies were created. Based on the theory, the first two argumentative strategies (offer deals and give reasons) would be more successful in influencing their parents than the last four non-argumentative strategies (say everyone else has it, ask for it directly, beg for it, and demand it). An exploratory factor analysis was performed to evaluate whether a two-factor model of persuasive strategies was present in these data as the literature suggested. A factor analysis was used, where the method of extraction was Principal Axis Factor Analysis. The results yielded 2 factors with eigenvalues greater than 1, as predicted by the literature. Rotated factor loadings were examined to assess the nature of these two retained varimax-rotated factors. Four items loaded as high in the first factor—which corresponded to non-argumentative strategies—and two items loaded as high in the second factor—which corresponded to argumentative strategies.⁵ Therefore, two dyadic scales were created. Dyadic argumentative strategies included offering deals and reasoning (Pearson $r = .42$, $M = 2.90$, $SD = .88$). Dyadic non-argumentative strategies included saying everyone else has it, begging, and demanding ($\alpha = .65$, $M = 1.98$, $SD = .71$).⁶

Parents' Motivations Toward Technology. To measure parents' perceived usefulness of technology, this study focused on the Internet. Internet is a good proxy for measuring the concept of digital media because it is a pervasive technology related not only to computers and mobile phones but also to a wide array of digital applications. The purpose of focusing on the Internet's perceived

usefulness rather than digital media's perceived usefulness is to increase the reliability of the measure. Items most commonly used in workplace contexts (Davis, 1989; Legris, Ingham, & Collette, 2003) were adapted to a more general context (Pan & Jordan-Marsh, 2010). Using a 5-point Likert scale, parents were asked about the following items: "Using the Internet increases my productivity," "Internet is useful for information acquisition, communication, and leisure," "Overall, I find the Internet very useful." These three items were averaged to create a scale of perceived usefulness ($\alpha = .77$, $M = 4.45$, $SD = .64$).⁷ To measure Internet perceived ease of use, parents were asked to rate the following items: "I find it hard to manage the Internet," "The Internet is rigid and inflexible to interact with," "Overall, I find the Internet easy to use." The first two items were reversed and then the three items were averaged to create a scale of perceived ease of use ($\alpha = .68$, $M = 4.02$, $SD = .84$).

Control Variables. Because previous research has found that age, gender, and SES are related to youths' influence on digital media learning (Correa, 2014; Correa et al., 2013), in this study they were included as control variables. Age was asked in an open-ended question and was measured as a continuous variable.⁸ Gender was dummy coded (1 = woman; 0 = man). Socioeconomic status was measured by an average of the parent's education and income. For parents, education level was determined in the following form: "What is the highest degree or level of school you have completed?" The responses included nine categories that ranged from incomplete primary school to a graduate degree. Since income tends to be measured on a monthly basis in Chile, parents were asked: "Thinking about your income and the income of everyone else who lives with you, what was your total household income in a typical month over the past 12 months?" The options were divided into 11 categories that ranged from "Less than \$100,000 pesos (less than US \$200)," to "More than \$4,000,000 pesos (More than US\$8,000)."⁹ Because education and income were measured with different categories, to create the SES variable the scores from the different questions were first standardized and then averaged.

Results

Descriptions of Samples

Of the 251 parents who completed the survey, 63% were women and 37% were men. Their ages ranged from 28 to 74 with a mean age of 44 years. On average, they had completed technical/professional education, which is similar to an American two-year college ($M = 5.51$, $SD = 2.15$), and their family income ranged between US \$1,000 and US\$1,500 on a monthly basis ($Mdn = 6.00$, $SD = 3.13$). Of the 381 students who answered the survey, 52% were women and 48% were men and their mean age was 15 years ($SD = 1.57$).

Youths' Influence on Adoption of Technology

First, percentage comparisons between parents' and children's responses revealed that both assessments on how youth influence their parents' technology acquisition were similar (see Figure 1). Percentages hovered around 30 to 40%, except from the Internet. In addition, youths' influence on technology adoption differed across technologies. Internet acquisition is where children showed the greatest influence, according to both parents' and children's responses. As Figure 1 shows, the majority of both parents and children said youth influenced "a lot" in Internet acquisition. The category for Internet was followed by categories for laptops, desktop computers, and touch cell phones. Compared to the other categories, youths had less influence on basic cell phone and smartphone adoptions.

To explore the relationship between youths' persuasive strategies, parents' motivations toward technology and youths' influence on their parents' technology acquisition, while controlling for sociodemographic variables (age, gender, and SES), a multiple regression was conducted. As Table 1 shows, three sociodemographic factors appeared as related to youths' influence on technology adoption: youth's age, gender, and SES. That is, the older the child, the greater the influence on laptop and smartphone adoption but not on desktop computers, the rest of mobiles, and Internet adoptions. Along the same line, girls were more likely than boys to influence their parents' laptop acquisition but not their mobile or Internet acquisitions. Finally, youths' from lower SES families had higher influence than youths from higher SES in acquisition of the following technologies: desktop computers, touch mobiles, and Internet connection. In summary, structural factors appeared to be more strongly associated with youths' influence on parents' computer adoption (both desktop and laptop) than with the other two technologies. And socioeconomic status was the

Figure 1
Youth Influence on Parents' Technology Adoption Percentage Comparison

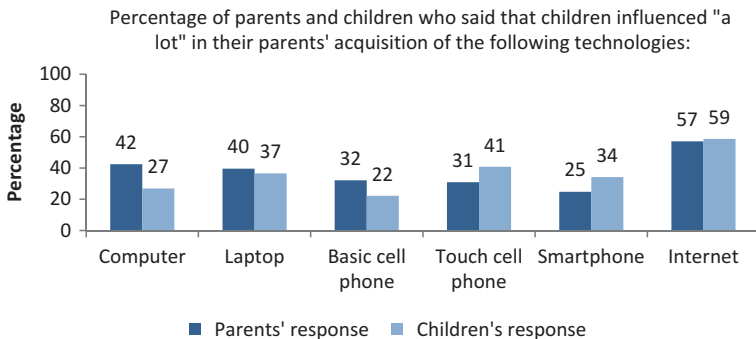


Table 1
Multiple Regression—Factors Related to Youths’ Influence on their Parents’
Technology Adoption

	Desktop computer adoption	Laptop adoption	Basic mobile adoption	Touch mobile adoption	Smartphone adoption	Internet adoption
Control variables	Beta	Beta	Beta	Beta	Beta	Beta
youths’ age	.09	.12*	.02	−.02	.16*	.07
Youths’ gender (1 = Woman)	.09	.28***	.09	.13#	.04	.07
Parent’s gender (1 = Woman)	−.03	.08	.05	−.07	.07	−.01
Socioeconomic status	−.25**	−.02	−.08	−.15*	.15#	−.22***
Youths’ persuasive strategies						
Dyadic argumentative strategies	.16*	.26***	.12#	.09	.08	.18**
Dyadic non- argumentative strategies	.03	.13*	.19*	.09	.22**	.09
Parent’s motivations						
Internet perceived ease of use	−.07	−.08	.07	.14#	.06	−.07
Internet perceived usefulness	.16*	.07	.14*	−.01	.10	.21***
R ²	12%*	21%***	11%**	6%	15%**	13%***
N=	183	185	191	179	140	196

Note. #p≤.10, * p≤.05, **p≤.01, ***p≤.001 (one-tailed tests)

strongest and most consistent predictor; that is, youths’ influence on technology adoption was more likely to occur among families from lower SES.

For youths’ influence on adoption of technology, two types of persuasive strategies were potentially associated with influence on technology adoption: argumentative strategies and non-argumentative strategies. In the case of argumentative strategies, youths would take into account their family’s or parents’ perspectives by reasoning or bargaining. In the case of non-argumentative strategies, youths just beg, demand,

or whine. The first hypothesis predicted that youths who use more argumentative persuasive strategies will have a stronger influence on their parents' technology adoption than will those who use non-argumentative persuasive strategies.

The regression analyses showed that the relationship of argumentative strategies was stronger than non-argumentative strategies in computer (both desktop and laptop) and Internet adoptions, while non-argumentative strategies appeared as more strongly associated with mobile adoption than its counterpart (see Table 1). For influence on desktop computer adoption, the relationship with non-argumentative strategies was non-significant while for laptop adoption, the relationship was significant but the magnitude was much lower than with argumentative strategies. Finally, for influence on Internet adoption, the association with non-argumentative strategies was non-significant. In sum, hypothesis 1 was supported for computer and Internet adoptions but not for mobile adoption.

To explore parents' motivations regarding technology adoption, two variables were investigated: parents' perceived ease of use and perceived usefulness of the Internet. The regression analyses showed no relationship between parents' perceived ease of use of the Internet and youths' influence on technology adoption. However, perceived usefulness was positively related to desktop computer, basic cell phone, and Internet adoption. In other words, these results suggest that the more useful the Internet is perceived to be among parents, the more influence youths will exert over their parents to acquire a computer, a basic cell phone and Internet a connection. Although the relationship with smartphone adoption was non-significant, it resulted in the expected positive direction. In brief, H2 was partially supported for perceived usefulness but not for perceived ease of use.

Discussion and Conclusion

Children showing their parents the new technological gadget on the market, and children trying to convince their parents to acquire the new device—these are scenes we see in our everyday lives. Thus, this study focused on the bottom-up technology transmission process, and investigated how youths influence their parents' digital media adoption. In particular, this research explored to what extent the phenomenon of youths' influence on parents' technology acquisition occurs. It investigated the factors that may intervene in the process—strategies employed by youth (i.e., youths' persuasive strategies) and motivations of the parents (i.e., parents' perceived ease of use and perceived usefulness of the Internet).

Because it is appropriate to investigate processes of technology transmission in contexts with wide-ranging levels of technology diffusion, where it is possible to find people who are in the lower and higher ends of technology adoption, this project was conducted in Chile. In a developing country like Chile, ICT diffusion within families represents an opportunity for otherwise digitally excluded people to get access to information, social contacts, job opportunities, and entertainment. Therefore, it was relevant to examine the factors related to technology acquisition

within families, so that policy makers may better understand to what extent and where school-focused digital inclusion policies may spill over to students' families.

The analyses of the results revealed that there is an influence on technology acquisition at some level for all of the technologies examined in this study, although no more than 40% of people said that children had influenced "a lot" regarding their parents' acquisition of technology, for the adoption of an Internet connection, more than half of the people said that youths had great influence (see [Figure 1](#)). One possible explanation for this difference is the generational divide in digital media usage. Many adults view technologies as a tool for work or obtaining information. However, children view technology as a communication or social tool, where the Internet was an inherent component. For young people, the computer without the Internet is "useless."

Although in this research project, structural factors such as SES, age, and gender were used as control variables, it is relevant to discuss the role played by family socioeconomic status in youths' influence on their parents' technology adoption. Youths' influence was stronger among lower socioeconomic status families than among higher SES families in half of the technologies under study (desktop computers, touch mobiles, and Internet connections). Just as what happened among low-income immigrant families, where children acted as culture and language brokers between the family and the new situation (Katz, 2010), youths from lower-income families were more likely to receive input about technology from their school and friends and then this input about technology would spill over with their families. This result was in line with studies on youths' influence on digital media learning (Correa, 2014; Correa et al., 2013) and recent qualitative accounts that have found that children or grandchildren from lower-income families were the ones buying technological devices or helping older generations learn how to use them (Katz, 2010; Rojas et al., 2012; Tripp & Herr-Stephenson, 2009). Currently, family socialization is considered a more bidirectional, interactive process. Therefore, youth's external agents of socialization such as peers and schools may open up opportunities for youth to alter traditional family socialization patterns.

The role played by gender in the bottom-up technology transmission is not as clear-cut as the role played by socioeconomic status. Because people have been socialized with the idea that technology is a male domain (e.g., Cooper, 2006), one could have expected that boys were going to be more likely than girls to influence their parents' adoption of technology. However, the results showed that girls had a greater influence than boys on the adoption of laptops. Future research should further explore this finding. Finally, the role played by youths' age in the influence they exert on their parents' acquisition of technologies was positive and significant for laptop and smartphone adoptions but not as important as expected. In these cases older children had greater influence. It was expected that older children use more sophisticated persuasive strategies and have more seniority, experience, and skills, so they have a greater influence on their parents' adoption of technology (Buijzen & Valkenburg, 2008). Although there was some evidence that influence increased with age, it was not very strong, probably because children who are 12 years old and

above may be sophisticated enough to be able to influence their parents' adoption of technology. Because the literature indicates that as children grow older they become more aware of other people's perspectives and they develop more successful persuasive strategies (Palan & Wilkes, 1997; Valkenburg & Cantor, 2001), probably this study would have found a more obvious difference if younger kids were included in the sample (e.g., elementary students).

The survey results revealed a strong association between youths' persuasive strategies and their influence on parents' adoption of technology. Theoretically, to influence and change people's behavior, it is important to persuade followers by developing empathetic strategies that take into account their needs and perspectives (Rogers, 1995). Consumer research found that the most effective strategies involve bargaining (i.e., offering deals) and reasoning, which in this study were called argumentative strategies. The least effective strategies included begging, whining, and demanding, which were called non-argumentative strategies (Palan & Wilkes, 1997). Based on previous literature (e.g., Palan & Wilkes, 1997), this study made a contribution by creating a survey scale that measured argumentative persuasive strategies and non-argumentative persuasive strategies. As expected, argumentative strategies appeared as stronger than non-argumentative strategies, except with regard to their influence on adoption of mobiles. It is possible that the adoption of mobiles implies less economic investment than does the acquisition of computer and/or Internet connection, which requires a regular payment commitment. Therefore, parents could be persuaded more easily.

Finally, this study investigated two psychological variables that had demonstrated to be powerful predictors of technology adoption: perceived usefulness and perceived ease of use. It was hypothesized that youths' influence was going to be greater among families whose parents perceived that the technology was useful and easy to use. This hypothesis was partially supported only for perceived usefulness. The more useful the Internet was perceived to be, the greater the influence children exerted on their parents' desktop computer, basic mobile, and Internet acquisition. Perceived usefulness was measured with items adapted from research on technology acceptance (Davis, 1989; Legris et al., 2003; Pan & Jordan-Marsh, 2010). Usefulness was measured as "increase in productivity," "useful for information acquisition, communication, and leisure," and "useful in general." Although the purpose was to create a scale, given the family-context of this study, future investigations should add other items such as "educational purposes." Regarding perceived ease of use, this variable did not predict youths' influence on technology acquisition. It is possible that precisely because parents considered the technology to be harder to use, they were more likely to rely on their children's advice to acquire the new devices.

The analyses and conclusions of this study were bolstered by a more novel research method in communication: the usage of dyadic data. This study made a methodological contribution by not only surveying parent-child dyads but also by conducting dyadic analyses, which combined both the parent's and child's assessments. Methodologically, the dyadic analysis of the survey allowed for the reduction

of measurement error. By surveying both the parent and the child on the same questions, two observations were conducted for key variables, which reduced the measurement errors that can occur when relying on one informant only. Theoretically, this study also contributed to the field by merging and adapting different theories and models to explore the bottom-up technology transmission process. Also, based on these theoretical frameworks, it created new theoretical constructs with their respective scales, such as youths' argumentative and non-argumentative persuasive strategies. As described in the methods section, the construct validity of these scales was demonstrated by conducting factor analyses, which identified common items to measure one construct, and reliability coefficients, which measured the internal consistency of the items (Cohen & Swerdlik, 2010). In addition, the scales showed adequate levels of criterion-related validity—the degree to which the scale was related to some criterion measure—because they were correlated with other factors in the hypothesized direction (Cohen & Swerdlik, 2010). The development of new concepts and their respective operationalization through items and scales constitutes the building block of theory advancement because these constructs can be compared and related to one another, which eventually leads to the proposition of hypotheses and the development of theoretical models (Shoemaker, Tankard, & Lasorsa, 2003).

Despite relying on dyadic data, this research study used cross-sectional data collection to answer questions about an influence or transmission process, which implies changes over time. Panel data, rather than cross-sectional designs, are the ideal method to elucidate cause-effect relationships and changes over time. Because it was not feasible to collect panel data, this study relied on dyadic self-reporting about technology transmission. Although self-reporting is a limitation of survey research because it measures the perceived behavior rather than the actual behavior, in this study the employment of dyadic data provided a more accurate measure because it consisted of two observations to investigate one variable or concept.

In addition, despite the non-probabilistic nature of the sample, it was relevant for this study, because the main purpose was to establish relationships among variables rather than to investigate to what extent this process is present in the general population. Still, the study followed a stratified sampling method by selecting schools that differed in their socioeconomic status. Also, one class per cohort was randomly chosen and extra efforts were made to obtain cooperation from both male and female parents.

Future studies should try to infer causal relationships by using more appropriate techniques. Besides panel data, another possibility would be to employ a quasi-experimental design. A future study could choose a digital media literacy program as an intervention for studying the influence youths exert over their parents' adoption of new technologies. Future studies should also include questions about family context, such as number of siblings or family size. Finally, quantitative measurements should be complemented with participant observations both in the program and in household settings, so as to explore how this influence process is negotiated between family members.

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Endnotes

1. The Pearson r correlations between parents' responses about the influence on digital media acquisition exerted by all their children and the specific child who answered the survey at school were very strong. They ranged from .75 to .86.
2. Despite the significant correlation between parents' and children's responses, the level of disagreement may vary among dyads. To explore this possibility, I calculated the absolute difference between parents' and children's responses on their perceived influence on technology adoption. The analyses revealed that about one third of the dyads (percentages ranged from 27.1% to 44.8% with a mean of 34.3%) did not have differences in their responses (the absolute difference was 0). It also showed that at least three fourths of the sample (75%) had at most 2 out of 5 points of difference in their responses. Finally, to test whether there were factors that might explain the disagreements; I conducted multiple regressions with sociodemographic variables as predictors and the magnitude of difference as dependent variable. The regressions showed that neither the total models nor the predictors were significant, suggesting that the absolute differences between parents' and children's responses was randomly distributed among groups.
3. The score 0 was recoded as missing value.
4. Pearson r correlations run from .09, $p \leq .10$ (ask for it directly) to .33, $p \leq .001$ (offer deals).
5. On the first factor "Beg for it" loaded .65; "Say everyone else has it" .65; "Ask for it directly" .45; "Demand it" .44. On the second factor, "offer deals" loaded .79 and "give reasons" .51.
6. Because the item "ask for it directly" lowered the Cronbach's alpha to .62, it was excluded from the non-argumentative strategies scale. Despite eliminating the item, the reliability coefficient is still lower than the usual standard for attitudinal scales of .70, which suggests a somewhat reduced internal consistency. However, the scale showed adequate levels of construct-validity with a Principal Axis Factor Analysis. Finally, although this slightly decreased internal consistency may affect measurement accuracy, the relationship between these scales and other variables behaved in the expected direction, showing adequate criterion-related validity (Cohen & Swerdlik, 2010).
7. Because the distribution of the variable perceived usefulness was negatively skewed, those who scored 2 standard deviations from the mean (scores below 2.67) were recoded as having a score of 2.67. They represented 2.5% of the sample (6 cases). As a result, the perceived usefulness index runs from 2.67 to 5.
8. To reduce the number of missing cases and increase the power of the statistical analyses, in the parents' survey, 10 cases where the age was missing it was replaced by the mean age of 44. In the students' sample, five missing ages were replaced by the mean age of 15. In both samples, the median ages were also 44 and 15, respectively.
9. Thirty-three cases where income was missing and eight cases where education was missing were recoded and missing values were replaced by the median and mean, respectively. In both cases this value was 6.0.

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Do Users Experience Real Sociability Through Social TV? Analyzing Parasocial Behavior in Relation to Social TV

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Do Users Experience Real Sociability Through Social TV? Analyzing Parasocial Behavior in Relation to Social TV

Dong-Hee Shin

The purpose of this study is to explore the ways in which users build parasocial relationships via social TV, and the implications for sociability and usability in future media. Focusing on parasocial behavior, this study examines how sociability and usability influence the attitudes and intentions of social TV (STV) users. The findings from experiments and a user survey indicate mediating and moderating roles of parasociability in the effect of performance on intention. The results showed that STV viewing and interaction were positively associated with parasocial experience. Parasocial relationships and interaction, in turn, were positively associated with the viewers' perception of usability and sociability, and intentions. This study reveals the links among an emerging media experience, social TV, and users' interaction with mediated realities.

Social TV (STV) refers to the television-supporting and surrounding media that promote communication and social interaction related to program content. STV can incorporate voice communication, text chat, presence and context awareness, TV recommendations, ratings, or video-conferencing—allowing users to interact with TV content either directly on screen or through the use of ancillary devices. Social features enhance the viewing experience by helping viewers find relevant content and socialize with others while watching programs. People communicate with friends in real time (through chatting, instant messaging, tweeting) as well as asynchronously (by commenting and posting).

While it is growing quickly for consumers, a key limitation of STV is that it provides only limited usability and consequently, narrow or shallow sociability (Shin, 2013). One factor that has slowed the adoption of STV is the limited social interaction it provides. Because social interactions are limited, users may not fully experience the social features that STV supposedly provides. Given current

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developments, sociability through STV can be best understood as a form of parasocial interaction (PSI). Often called pseudo-interaction, imaginary social relationship, and pseudo-friendship, PSI creates users who are not mere passive viewers, but involved, active parts of the process. Previous research has shown that parasocial relationships are positively associated with the perception and viewing experience of viewers (Hartmann & Goldhoorn, 2011). It is worth examining how sociability works in STVs and why and how parasocial behavior develops.

In researching these topics, it may be useful to examine them in relation to other existing factors. Per Shin and Kim's (2015) argument, sociability is a compounding factor that needs to be seen with other factors such as usability and socio-usability. Usability mainly relates to the ways in which viewers use STV as a TV utility. At the same time, by sharing content, creating and sending messages, and communicating with others, users express sociability through STV. While usability and sociability are both crucial for the success of STV as a social platform and TV utility, a key challenge for the STV industry involves finding new ways to facilitate social interaction and engage users in a mediated environment. Parasociability fits nicely between these two factors because parasocial behavior is something pseudo or quasi; it is therefore highly probable that parasocial behavior can be influenced by utility functions and social features.

This study examines the user experience of STVs: proposing a research model that incorporates sociability and usability, and explores how parasocial experience can affect the interaction behavior of STV users. Our results showed that STV viewing and interactions were positively associated with parasocial relationships, which, in turn, were positively associated with viewer perceptions of usability and sociability, and with viewer intention. It can be inferred that people expect STV to provide a parasocial experience, and that parasociability is a driving factor in STV adoption. This argument is particularly interesting in light of evidence that similar STV-linked media, including smart TV, curved TV, and ultra-high definition TV, have experienced low acceptance and low diffusion (Shin, Hwang, & Choo, 2013). These advanced versions of TV have been specifically developed to offer new user experiences, including full presence and social presence. Low acceptance and slow diffusion imply that such experiences have not been delivered, raising the question of which determinants drive user intention and which factors are the key to delivering an advanced TV user experience. Such results shed light on the ways in which users build parasocial relationships with others via STV and social media, suggesting important implications for future developments in TV sociability and usability.

Our findings will be of interest to both academics and industry specialists. From a theoretical perspective, this study suggests a model for identifying antecedents of the user intention to access STV's parasociability. The new model illustrates the role of parasocial behavior in relation to usability and sociability, and examines how these two dimensions are affected by parasociability, which shapes attitudes and intention. The results also show that users expect forms of sociability and usability that differ from real and complete reciprocal interaction. This suggests the need to reconceptualize sociability in future media.

From a practical standpoint, these findings can be used as an industry guide to forging effective strategies to attract STV consumers. The TV industry is struggling to design STV services that are usable, sociable, enjoyable and—most importantly—user-centered. Parasocial behavior can reveal a mechanism for developing strong ties with users through media, revealing new ways to create the experience of an intimate relationship through improved sociability and usability.

Literature Review

Parasocial Experience

Since its introduction by Horton and Wohl (1956), PSI theory has been used to describe the one-sided relationships that can develop between a media user and the media being consumed. Horton and Wohl (1956) argue that both performer and spectator play roles in the experience of PSI, and that these roles are multifunctional. They further argue that a persona deliberately takes on the role of vicarious inter-actant in order to foster a parasocial relationship (PSR) with the audience.

In traditional TV, parasocial relationships were created mainly in response to television personas (Rubin & Step, 2000). With the rise of social media, such relationships also began to develop between individuals and their social media users. The nature and intimacy of parasocial relationships has also matured. STV allows viewers to share in the intimate, personal lives of television personas, while celebrities openly share their opinions and activities through various social media outlets linked via STV. In addition, the Internet offers users unlimited access to media; increased Internet dependency may lead to an increase in parasocial interactions. While parasocial relationships remain one-sided or quasi, they have transformed via STV into more interactive environments, allowing users to communicate with media personas, and increasing the intimacy and strength of the parasocial relationship. Despite the one-sided nature of parasocial relationships, numerous similarities exist between these relationships and more traditional social relationships. Social media studies show that parasocial relationships provide an experience of friendship, and are influenced by social interactions (Chung & Cho, 2014). Furthermore, viewers experience a connection with the media user and express feelings of warmth, appreciation, longing, support, and loyalty towards him or her.

As STV has never been analyzed in this context, this paper explores the PSI behaviors characteristic of STV users, and how these relate to viewing behavior. While PSI theory has previously been used to explore the process by which individuals form attachments to media personas, this study uses PSI theory to explain the behavior of users of social TV-based content.

In past research studies, the boundaries between PSI and PSR have been blurred (Schramm & Hartmann, 2008). It is worthwhile to apply these concepts in

conjunction with STV sociability and usability. As PSI is bound to the interpersonal processes between persona and user that take place during media exposure, usability, and sociability affect PSI. In addition, as PSR indicates the cross-situational relationship between a user and a persona, PSR can be seen as an antecedent of usability and sociality.

Sociability and Usability

Social interaction in a technology-mediated environment involves users interacting with the technology (i.e., usability) and with each other via the technology (i.e., sociability). Although usability is primarily concerned with how intuitive and effortless it is for individuals to learn to use and interact with a product, various definitions and approaches have been proposed. While sociability is closely related to usability and can even be considered a new genre of usability, it also differs significantly from usability. Whereas usability is primarily concerned with how users interact with technologies, sociability concerns the ways in which members of a community use supporting technology to interact with each other. Thus usability focuses on interactions that cross the human-computer interface, while sociability focuses on human-human interactions supported by technology (Jones & Preece, 2006). Applying these two concepts to STV, usability can be interpreted as the way in which users use STV as a TV utility. Creating and sending messages, and communicating with other users are also examples of STV sociability.

While growing numbers of researchers have studied the factors that influence social interaction (e.g., Koh, Kim, Butler, & Bock, 2007), few studies have examined the precise role of sociability in relation to parasocial behavior, its relationship with usability, or the way in which these two factors influence other factors or behavioral intention. This structural relationship will be important as STV evolves as a platform for various services and activities.

The Behavior of STV Users

According to Ajzen's Theory of Planned Behavior (TPB) (Ajzen, 1991), an attitude about behavior is defined as an individual's positive or negative feelings about performing that behavior. The TPB has been widely used in user research to predict and explain attitude formation and to predict behaviors. Given the wide applicability of the TPB in emerging technologies, the general causalities found in TPB are expected to apply also to STV. In particular, the relationship between attitude and intention in interactive TV and Smart TV has been confirmed (Shin & Kim, 2015). The relation of attitude and intention can be a starting point understanding user behavior of STV.

H₁: Attitude toward STVs is positively related to intention.

Perceived Sociability (PS)

In the context of STV, the concept of sociability refers to TV system features that support a state of being interactively sociable, where viewers find it pleasant to interact with each other through the TV-enabled space. Cooperative, friendly behavior can be strengthened through STV and expressed through words that engender commitment, excitement, and optimism. Sociability is particularly important in STV-related interactions because viewers need to feel comfortable in order to interact with and enjoy a technology-enabled environment. It seems reasonable to assume that generating more sociability will improve the parasocial feelings and behavior of users. Per the Hartmann and Goldhoorn (2011) findings, users tend to show more parasocial behavior in a high level sociable environment.

H₂: PS positively influences the parasocial experience of STVs.

Perceived Usability

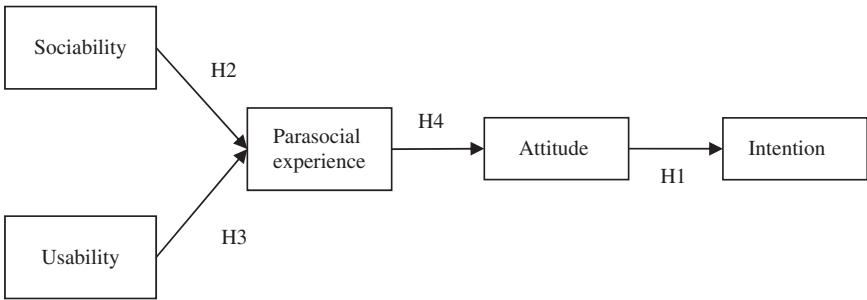
It is clear that perceived usability is a very important part of STV, which offers many utility services and can influence viewing behavior. In fact, usability has been found a key factor in IPTV, Interactive TV, and Smart TV (Shin & Kim, 2015). Based on the Smart TV user studies, Shin and colleagues (2013) argue that usability is critically important in achieving satisfaction. Geerts and Grooff (2009) also confirm the importance of this concept in their attempt to identify the key dimensions of technology. Individuals who perceive the system that enables STV as easy to use are more likely to search for and contribute to knowledge within the social community. While usability has rarely been examined in relation to parasociability, it can be aptly hypothesized in connection to parasocial experience. Viewers who find it easy to watch programs, seek information, and use ancillary services will certainly improve and increase their experience of parasociability.

H₃: Usability positively influences the parasocial experience of STVs.

Parasocial Experience: An Illusion of Intimacy With Mediated People

The parasocial experience of users is influenced by various factors and leads to several consequences (Schramm & Hartmann, 2008). From the beginning, parasocial experience has been specifically researched in relation to TV celebrity and superstars. In examining the causes and consequences of parasocial experience, Hartmann and Goldhoorn (2011) found that stronger parasocial experiences resulted in a higher commitment to social norms and a greater enjoyment of the exposure situation. While numerous researchers have arrived at similar results, the connection between parasocial experience and usability and sociability has remained

Figure 1
The Proposed Research Model



unresolved. The present study addresses this gap, arguing that a parasocial experience is in some way related to usability and sociability, which then influence attitude. As a type of sociability, parasociability can be influenced somehow by usability because features that make an environment more usable allow more parasocial behaviors to be expressed. This study proposes user-perceived parasociability as a primary evaluative dimension for STV. Based on the view that attitude is an evaluative outcome (Wu, 2005), this study proposes that evaluations of parasociability conducted using STV are the direct antecedents of attitude (Figure 1).

H₄: The higher a user's perception of parasocial experience via STVs, the more positive that user's attitude toward STVs will be.

Methods

To test our hypotheses, participants viewed a brief visual display via STV, and then completed a questionnaire. Using an experimental procedure very similar to that used by Dibble, Hartmann, and Rosaen (2016), participants viewed a 3-minute video clip via STV. For the study, actual STV was used that was advanced from Samsung smart TV. In choosing the clip, we searched the Web to find popular videos by checking the average number of episodes viewed. The clip was specifically designed to assess the users' levels of friendship, mutual awareness, attention, and adjustment with a TV performer. The clip came from a popular Korean reality singing talent show. In the show, viewers engage with the show and other viewers, using social media outlets to comment and respond. Viewers also participate in the show by voting for contestants using text messages and social media messages. In our experiment, participants were asked to watch the clip. After watching it, participants completed a survey, consisting of basic demographic questions, previous social experience, sociability, usability, attitude, intention, and parasocial interaction.

This experiment was conducted online. Participants were treated in accordance with IRB guidelines and policies on appropriate treatment of human subjects (Figure 2).

Participants were recruited by a marketing firm specializing in survey development, data collection, experiment design, and surveying. This was necessary to ensure reliable and valid data for parasocial analysis. The firm had extensive data on STV (panel, longitudinal, & cross-sectional time-series data) and had experience measuring user experiences. Initially, 1,201 potential respondents were personally contacted with the request to participate in the study. An additional 101 users were approached via a STV community site. Respondents were paid \$5 (credit or coupon) per hour for their participation. Of all contacted respondents, 702 started the study and 670 respondents completed it (Response rate: 53.8%; Completion rate: 95.4%). Among these, 12 were dropped due to reliability issue (Error rate: 1.8%). Due to the detailed instructions provided to respondents, the completion and error rates were low. A total of 658 responses were finally selected and used (Social group = 329; Utility group = 329). From this original data set, we excluded 15 cases for failing to complete the survey and 4 due to technical problems with viewing and/or interacting with the video. The normal length of time to complete the survey was about 1 hour (25 minutes for introduction, 3 minutes for viewing, and 30 minutes for questionnaire). The number of respondents in the two groups was deliberately reduced further to equalize the samples. Gender ratio of the sample was also equalized to remove gender effect (320 male and 320 female).

Figure 2
Example of the Video Shown to Viewers in the Experiment



Table 1
Methods

Population	Response	Completion	Analysis	Final
1201 (general public)	702	670	658 329	640 320
			social	male
101 (special interest community)			329	320
			utility	female
	53.8% response rate	95.4% completion rate	1.8% error rate	18 cases drop
Time Taken questionnaire	1 hour	30 minutes experiment	30 minutes	
Collection Period	1 st round:	June–Dec. 2014	2 nd round: Jan.–May 2015	
Mode	Online experiment proctored by third party firm			

Two separate sets of survey questionnaires were developed; one emphasized the social aspect of TV and the other emphasized the utility aspect of TV. The questionnaires were composed of 15 statements on five factors (three statements each factor). The initial survey included 25 measurements, but they were further reduced, as the respondents experienced fatigue. The final measurements were carefully selected from previous literature and modified in accordance with the STV context. In a pretest, completing the questionnaire normally took 25 minutes. The respondents could ask questions regarding the statements on the questionnaire.

To avoid confusion, the questionnaires were administered to two different groups of respondents, one survey for those who engaged primarily in social interaction and the other survey for those who engaged mainly in program viewing. Before the survey, respondents were divided into two categories that reflected their STV using and viewing behaviors. To minimize the disadvantages of self-reported data, we ensured that participants avoided socially desirable answers.

Data collection was conducted between June 2014 and May 2015. The first round of data collection was completed between June to December 2014. The second round was performed to collect additional data on parasociability and parasocial behavior from January to May 2015. The two data sets were then merged (Table 1).

Measurement Development

Each variable was measured in relation to three items, apart from sociability. Hartmann and Goldhoorn's (2011) parasocial process scale was used to rate

parasocial experience. As the items in the survey were adapted from previously validated work, the content validity for the two constructs was established through a literature review.

Validity and Reliability

Thirty current and prospective users of STV and other similar services participated in two pre-tests separated by an interval of 1 month. After eliminating measured items that failed in either the retest or the alpha test, Cronbach’s alpha was applied to identify poor item-to-total-correlation elements. The alpha values ranged between 0.859 and 0.914, suggesting an acceptable construct reliability. In addition, the construct validity of the instrument was confirmed through Principal Components Analysis. After three items of the original item survey were removed, all item loadings were greater than 0.5, with no cross-loading above 0.4 (Shin, 2015). Similarly, discriminant validity was confirmed as the correlation between items in any two constructs and was found to be lower than the square root of the average variance shared by items within a construct.

The study design particularly emphasized external validity. First, it ensured that a sample was drawn from a general population through a random selection method. Second, it ensured that, once selected, as many respondents as possible participated in the study, keeping the dropout rate low. Third, it used the theory of proximal similarity to describe how the contexts in this study significantly differed from others.

Results

Data Characteristics

Results of the reliability testing (shown in Table 2) provide Cronbach’s alpha coefficients—all exceeded 0.81 and were deemed satisfactory for scores obtained on all six measures. A factor correlation was conducted on the scale level to avoid the

Table 2
Means, SD, and Reliability Estimates

Variable	Mean	SD	# of items	Cronbach’s alpha
Parasocial	5.36	4.32	3	0.873
Usability	5.63	4.56	3	0.834
Sociability	4.97	4.53	3	0.842
Attitude	4.56	6.42	3	0.895
Intention	3.94	6.23	3	0.829

Table 3
Factor Correlations Matrix

Variable	Para	Usability	Sociability	AT	IT
Para	1.00				
Usability	0.58**	1.00			
Sociability	0.69**	0.63**	1.00		
AT	0.42**	0.58*	0.54**	1.00	
IT	0.38*	0.52**	0.42*	0.37*	1.00

Note. **:Correlation is significant at the 0.01 level; *: at the 0.5 level (two-tailed).

Table 4
Goodness of Fit Indices of the Model

Fit statistics	Sociability model	Utility model	Recommended value
Chi-square/df	164.21, df=327 p=0.44	164.21, df=327 p=0.44	—
Normed Chi-Square	2.04	3.11	<5
AVE	0.81	0.90	> 0.50
p-value	0.000	0.000	< 0.05
Goodness of Fit Index (GFI)	0.92	0.94	>0.9
Adjusted Goodness of Fit Index (AGFI)	0.91	0.90	> 0.9
Root Mean Square Error Approximation (RMSEA)	0.068	0.079	> 0.06
Standardized RMR	0.012	0.032	≤ 0.05
TLI (Tucker-Lewis Index)	0.89	0.91	Approaches 1
Usability→Intention	Strengthened	0.2213 1.999	0.3912 3.431

potential collinearity encountered on the item level. Factor correlation coefficients among variables were constructed using the Pearson correlation. Table 3 provides the factor correlation for the six constructions. All variables were highly correlated either at the 0.01 level ($p < 0.01$, two-tailed) or 0.5 level ($p < 0.50$, two-tailed). An internal consistency reliability testing for scales was examined, using SPSS.

Measurement Invariance

Prior to assessing the structural model, the measurement model was tested and measurement invariance examined. As Phang, Kankanhalli, and Sabherwal (2009)

have argued, it is important to establish measurement invariance prior to comparing responses from two groups, when surveys have been administered to two groups of respondents. To test measurement invariance, this study followed Phang and colleagues' (2009) confirmatory factor analyses of the models for sociability and utility, which provide a rigorous assessment of the fit between collected data and the theoretical factor structure. Partial Least Square (PLS) was used to test the measurement and structural models because it allows both reflective and formative constructs to be modeled.

The Model Fit and Path Analysis

A series of fit indices were calculated to determine whether the data fit the model. The overall fit of the model was satisfactory, with all the relevant goodness of fit indices greater than 0.90. Chi-square statistics revealed non-significance in the models, indicating that they fit the data adequately. The GFI is 0.96, the AGFI 0.92, and the TLI 0.90. There is no evidence of misfits, with the RMSEA showing a very satisfactory level of 0.068.

After establishing measurement invariance and satisfactory fit indices, the proposed hypotheses were tested. To test the hypotheses involving the differences between the sociability and utility groups, corresponding path coefficients in the modes of the two groups were compared using the procedure indicated by Phang and colleagues (2009). A significant *t*-value (calculated below) indicates a significant between-group difference for this particular path. From the results of the *t*-test, it can be inferred that sociability and usability play different roles in STV.

The hypothesized model accounted for 58% of the variance in the construct of intention. In other words, 58% of intention in STV use can be explained by the model, which can be of relatively high value. While high *R*-squared values are not always good, *R*-squared values provide an intuitive assessment of how well the model fits a particular set of observations. The squared multiple correlations explain an ample portion of each variable ($R^2 = 0.384, 0.392, 0.410$). All of the path coefficients between the variables were significant ($p < 0.05$ or $p < 0.01$). The factor loading analysis revealed that sociability had the highest standardized path coefficients at 0.59 and 0.54 (parasocial experience), followed by usability at 0.50 and 0.49. This concurs with past research findings (Gao, Dai, Fan, & Kang, 2010; Kreijns, Kirschner, Jochems, & Buuren, 2007).

All hypotheses were supported implying a critical role of parasociability. These results also reveal contrasting patterns between the sociability and utility groups. Respondents from the sociability group viewed PS and hedonic performance as significantly more important, while respondents from the utility group viewed usability and utilitarian performance as significantly more important. Sociability was found to be a great antecedent of parasocial experience. Likewise, usability was found to be a profound antecedent of parasociability. Attitude was found to be a significant determinant of intention in both groups (although at $*p < 0.05$). In the sociability

group model, approximately 58% of the variance in STV intention could be explained by variables in the model ($R^2 = 0.581$). In the utility group model, about 52% of the variance could be explained by variables in the model ($R^2 = 0.522$). The R^2 of all endogenous constructs in the model exceeded 20%.

However, this model underplays the role of attitude, as compared with previous studies that emphasized attitude. This implies that, while the attitude of STV users may have been positively influenced by PSI and PSR, a positive attitude does not automatically lead to intention. While users might intellectually appreciate the smart interactive features of STV, they may not really consider using or adopting them until, for example, they find a way of using these features to become genuinely more social, going beyond a mere exchange of messages. They may need to personally experience a positive STV experience and have access to the relevant program. It may thus be inferred that there is a gap between attitude and intention in STV. Parasociability may succeed in bridging the gap between attitude and intention. It is possible to mediate the relationship between attitude and intention through TPB-based parasociability. As this role has important implications for both theory and practice, further tests are necessary to uncover possible underlying effects.

Discussion

Overall, the findings show that STV's usable and sociable functions promote a perception that its content is real and approachable, helping to break down the wall between content and users. The findings also reveal the relationship between parasocial behaviors and other factors.

Findings From the Research Model

This study aimed to explore and explain the development of individual behavioral intentions by empirically testing the STV model in relation to parasocial experience. Overall, our findings represent an extension of previous analyses of user factors by clarifying the roles of sociability and usability as antecedents of parasocial behaviors such as PSI and PSR. In particular, it is notable that the findings highlight the difference between sociability and usability and their effects on parasocial experience. While a few previous studies have researched the two factors together (e.g., Heerink, Kroese, Evers, & Wielinga, 2008), this study is the first to empirically test the antecedent roles of the two factors in relation to parasociability in the STV context. This could be an important step toward reconceptualizing the notion of sociability, which has been treated as an extrinsic variable (routinely measured in terms of modality and frequency), indicating how interactively and often users communicate with each other, and through what exchange mechanism. The intrinsic dimension of sociability is also worth exploring, namely, how users feel as a result of social interaction, as well as which cognitive effects result from social activity.

Researchers have tended to view sociability only in relation to extrinsic perspectives (Preece, 2001), involving frequency and interaction modality. However, sociability is experienced by users as an internal dimension and should therefore be measured through user perception, experience, and value. Parasocial behavior represents an important instance of user experience and value becoming highly relevant to the adoption and continuation of usage.

PS demonstrates a much stronger impact on intention than previous studies have indicated (Kreijns, Kirschner, Jochems, & Buuren 2004; Lazar & Preece, 2002; Preece, 2001; Shin, 2013). The unusually high impact of PS suggests that STV users are more influenced by interactive features in deciding whether to choose STV over conventional TV or other advanced TV services. This suggests that STV is perceived not only as a TV device to provide entertainment but also as a multi-tasking social platform that enables users to accomplish various educational, informational, and commercial purposes. Through the platform, users may acquire a parasocial feeling that affects actual sociability. In parallel with parasociability, sociability also becomes more complex, integrating all functions and features. We thus need to redefine how people socialize, parasocialize, engage, and interact across every STV application. This point is well suited to reflect the performance value of the model. In addition to the highly significant PS result, parasocial experience also has a much stronger impact on attitudes than previous studies have shown (when compared to the magnitude of path coefficients and the level of significance). It may therefore be inferred that some sort of effect is shared by both PS and parasocial behavior. Together with interactivity and performance, it may well prove that TV sociability, as well as parasociability, increases the user values of utility and usability.

Interesting findings can also be derived from the relatively weak impact of attitude on intention, which is open to various interpretations. Further tests will be needed to uncover possible underlying effects.

Special Effects Achieved by Parasociability. Previous studies have shown the moderating effects of variables in various media contexts (Shin & Kim, 2015). Although these studies have shown that social interactions are important, few studies have analyzed the mediating or moderating influence of parasociability within the context of STV. Thus, given the proven importance of sociability, it is worthwhile to examine the underlying roles played by parasociability; user perception of parasocial experience may vary greatly depending on user context. The roles of parasociability are examined to assess their mediating and moderating effects. In particular, we investigated the effectiveness of parasociability in mediating between usability and intention, as well as studying the role of parasociability in moderating the relationship between attitude and intention. Rather than distinguishing between our two groups of participants, these effects were examined by using an aggregate sample of the usability and sociability groups.

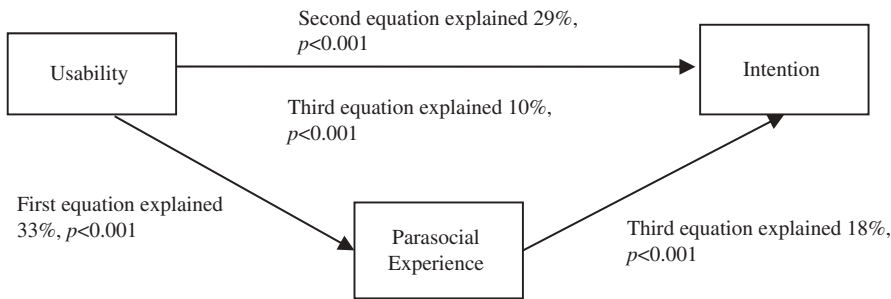
The Mediating Role of Parasociability. This study used Baron and Kenny's (1986) procedure to test mediating effects. First, the single order relationships

among the variables were confirmed through statistically significant Pearson correlations in the expected direction. As predicted, usability and intention were correlated ($r = 0.56$), usability and sociability were correlated ($r = 0.55$), and sociability and intention were correlated ($r = 0.59$). Next, three regression analyses were performed, following the method recommended by Baron and Kenny (1986) and depicted in Figure 3. The first equation regressed sociability on usability ($F(1,97).45.90, p < .001$). Usability explained 32% of the variance in sociability. The second equation regressed wellbeing on usability ($F(1,97).41.84, p < .001$). Usability explained 30% of the variance in intention. The third equation regressed intention on both usability and sociability. This final equation met the two requirements for a mediator effect: a) the hypothesized mediator, sociability, was a significant predictor ($t.4.69, p < .001$) and explained 19% of the variance in intention; b) the variance in intention explained by usability was reduced from 30% in the second equation to 9% in the third equation. Thus, the reduced direct association between perceived usability and intention when sociability was included in the model supported the hypothesis that sociability was at least one of the mediators in the relationship between usability and intention. Thus, parasociability is proven a full mediator between usability and intention.

The significant mediating roles played by parasociability imply that STV users want to confirm performance before making the decision to adopt. It has generally been supposed that a higher positive attitude leads to stronger intention (Venkatesh & Morris, 2000). In the STV context, however, the potential intention of STV users can be different from their actual intention. While users may have a positive attitude, they may also have limited intentions. Although users may wish to experience a new dimension through STV (for example, a new level of sociability), this inference is consistent with the significant effects of parasociability in the model. Its mediating effects significantly support the importance of user sociability to STV. The importance of PS in this study is key to understanding the concept of actual sociability to STV. In previous research, sociability has referred to the concept of social interaction or exchange (Gao et al., 2010; Phang et al., 2009; Smith & Sivo, 2012). In the STV context, interactivity refers to more than just mechanical chat or exchange. Along with parasociability, it may refer to users who become fully immersed in their experience by viewing content, commenting on it, and then actively contributing to it. Users may have the illusionary experience that they are engaged in reciprocal relationships with personas. In STV, interactivity can take the form of parasocial interaction, where new forms of content or services are generated.

The Moderating Role of Parasociability. A two-step cluster analysis using SPSS was performed to identify segments of the sociability constructs. The cluster solution led to a group of 338 highly sociable users and 320 less sociable users. These two clusters served as a grouping variable for a multiple group analysis. Hypotheses about the moderating effects of user variables were tested

Figure 3
The Results of the Mediation Test



by comparing the path coefficients between the two groups produced for each moderator using t -value. In the case of t -value over 1.96 (over 95% confidence), the conclusion was that a coefficient has a moderating effect. The results of the moderating test show that parasociability plays a significant moderating role across all paths in the model. It can be inferred from the moderation that the higher the parasociability, the more likely users are to intend to use STV as their attitudes become more positive.

Modified Model

Given the strong effects of usability/sociability on parasociability, it is worthwhile to divide parasociability into PSI and PSR. PSI can be linked to usability whereas PSR can be connected to sociability. In order to interact with other users via STV, usable features are needed. To be able to form relations, sociable functions should be provided. Of course PSI can be also influenced by sociability and at the same time PSR can be affected by usability as well. The former can be main effects that usability and sociability primarily influence PSI and PSR respectively. The latter can be sub effects that usability and sociability also can influence them though minor level.

A modified model is proposed by including these main and sub effects by sociability and usability. The results show rather different magnitudes of the effects from the initial model, while maintaining the fundamental relationships between the variables. By establishing the main and sub effect, the initial effects were significantly improved. The inclusion of the missing relations normalized the relationship among PSI, PSR, and attitude. In the modified model, R^2 was improved and from 0.41 to 0.50 (attitude). R^2 for PSI and PSR show 0.410 and 0.398 respectively, which can be reasonably high value. In addition, the rest of path coefficients of each path were increased either slightly or greatly.

The Interaction Between Sociability and Usability

This study provided a unique analysis of sociability and usability, and explored the ways in which parasocial experience can affect the consumption behavior of STV users. The results showed that STV viewing and interaction were positively associated with parasocial behaviors. Such behaviors, in turn, were positively associated with the viewers' perception of usability and sociability, and with intention. The results also indicated that socio-usability played an important role in forming PSI/PSR, and in enhancing attitudes toward STV. This study revealed the links between an emerging media experience, communication technology, and users' interaction with the mediated world.

The contribution made by this study is both theoretical and practical. In regard to theoretical advancement, this study contributes to a new understanding of the various effects of sociability on STV users' attitudes and intentions. Just as previous studies have consistently shown the importance of usability in technology adoption, so this study confirms the importance of usability and demonstrates that usability can be greatly influenced by sociability. Although the issues of sociability and usability have emerged as key factors in STV development, to date the research on this issue has been quite sparse, especially from the perspective of actual user experience. These findings also contribute to research on parasocial experience in several ways. Little experimental research has been done on the factors underlying parasocial experience. Our current study complements the few experimental studies that have been conducted in this area to date.

The present findings also suggest that the causes and consequences of parasocial experience correspond to those suggested in previous conceptualizations of parasocial experience. In this study, users reported stronger parasocial experiences when the STV function was more sociable and usable. This finding resonates with previous research, which identified the positive social perceptions of users as an important determinant of PSI (Hartmann & Goldhoorn, 2011). In addition, users with a stronger ability to make use of various features tended to report stronger parasocial experiences in this study. This result complements a previous finding by Chung and Cho (2014), who showed that users' usability skills intensified parasocial behavior.

Our findings promote understanding of the mediating and moderating effects of parasociability on the intention of users to experience STV for various purposes. One intriguing and heuristic contribution made by this study is the identification of a causal relationship among sociability, usability, and performance. Although sociability is an embedded concept in social media and interactive technologies, the concept has been under-researched, particularly in relation to usability (Preece, 2001; Shin, 2013). Although the two concepts are closely related (in practice, often overlapping), it is important to provide a detailed explanation of how they are related and the particular roles they play. This study has made a modest, but heuristic contribution to that body of knowledge by relating them to both PSI and PSR.

Apart from the role of PS, other roles are not clear in the STV context. Given the unique nature of STV interaction mechanisms, the relationship with parasociability and other factors should be clarified. Based on our findings about parasociability, this study reconceptualizes and redefines sociability within the STV context. Previously, sociability was measured as if it were merely the capacity to interact with systems and technologies. In the STV context, the current notion of sociability should be expanded to incorporate new STV features. For example, STV users are often motivated by a desire to connect with other users through constant communication. Given the ubiquity of advanced technologies, people have the social expectation of being almost always connected and instantly reachable via technology. STV provides such connectedness through parasociability. STV sociability should therefore be understood not only as an exchange of responses and feedback, but also as a feeling of connectedness enabled by continuous interaction.

From our findings, it can be inferred that users adopt and use STV in order to experience PSI and to form PSR in place of full, reciprocal interactions. Users feel satisfied with parasocial engagement when they clearly understand the parameters of mediated reality that STV provides. People are smart enough to differentiate between actual and mediated realities. They may want to experience parasociability in a mediated reality while understanding and accepting that mediated reality is different from actual reality. In other words, users do not expect a full or completely authentic presence, or real, reciprocal interaction from television. In many cases, they enjoy experiencing the different dimensions of experience provided by parasociability.

From this point of view, the specific design features and characteristics of STV services can be used to give clear and meaningful form to social interactions. For example, STV viewers may wish to post comments on social networking sites while watching TV programs. This sort of continuous interaction loop may increase users' sense of connectedness. Future studies should further investigate the complex interrelationships between sociability, connectedness, presence, and other related factors in order to clarify these intricate relationships. In particular, given its key role, PS should be extensively investigated to determine its impact on usability and flow in the STV context. As sociability can occur at many different levels and degrees of engagement, it is important to differentiate between them.

The mediating roles that have been identified prove that sociability enhances and facilitates other factors, in addition to user intentions. Our results imply that STV with advanced social features has a greater influence on performance, increasing its influence on the user's intention to adopt STV. This positive feedback loop has a profound impact on usability, which in turn influences acceptance. Such results imply that the sociability of STV underpins the overall process of adoption and continuing usage. This model brings sociability into focus, showing that parasociability is a key factor that directly and indirectly affects other factors to a significant degree. While such findings support previous research on sociability, this study clarifies the applicability of sociability in emerging STV areas by identifying parasocial behavior. Previous research findings on sociability have demonstrated (only to a limited extent) that users' subjective perceptions of sociability play an important

role in determining their behavioral intentions and actual behavior (Lazar & Preece, 2002; Phang et al., 2009; Preece, 2001; Shin, 2013). These previous studies have failed to address the specific relationship between sociability and parasociable experience, or the possible underlying impact of sociability on other motivational variables. By filling in this gap, this paper finds that parasociability has significant effects on usability; it further clarifies how different variables are formed and mediated. It can be inferred that enhanced feelings of sociability will result in a more positive perception of usefulness and enjoyment through the use of the system and its content.

Practical implications for the STV industry include the potential for new STV strategies and business models. Marketers wishing to build relationships in social media environments should attempt to be open in their messages to users, while also responding in a personal and timely manner. This creates the feeling of PSI, which strengthens the relationship, building loyalty, and increasing people's willingness to share information.

Our findings pinpoint a need for STV to provide viewers with user experience-based content, as well as truly sociable services. It is more important to promote parasocial experience than to strive to create a completely plausible version of reality. STV's most valuable contribution is its ability to provide seamless sociability and intrinsic enjoyment. As people increasingly turn to STV for various services they formerly derived from other sources, their expectations for those services will change. Changing expectations will undoubtedly have an impact on the development of future TV as a multimedia tool for games, commerce, and entertainment.

Interaction between users is what distinguishes STV from other media in which interactions occur between users and the screen. The social interface is surrounded by different kinds and degrees of sociability, and different dimension of social practices, the collective user activities that bring STV up to the next level of diffusion. Because social media are evolving rapidly, developers must accommodate change by regularly revisiting sociability and usability decisions. This is a challenge for many in the social media industry who are not used to working toward a drastically moving target.

Conclusion

Parasocial experiences are popular within online communities via STV, and this is due to the increased sense of connected feeling with the personas through increased usability and the perception of parasocial interactions as having a high sociability. PSI and PSR are essential to STV viewers, enabling them to draw support from relationships and interactions. Individuals involved in parasocial relationships often thank their favorite personas for helping them to get through tough times. Some viewers believe that these personas have helped them to significantly shape their own identities. Parasocial relationships can provide valuable support, and new social media techniques make it possible for these relationships to expand the social networks of individuals.

While parasocial behavior is not a new concept, it has not yet been explored in relation to STV users. Given the unique role of STV in developing user sociability through improved usability, it is critical to develop a concept to explain how users within an online community can use STV to influence the interaction behavior of other users. It is hoped that the theory of parasociability presented in this study will provide an initial direction for researchers interested in further understanding the behavior of STV users.

Needless to say, the sampling, experiment, survey, and conceptualization in this study have some limitations. We hope that future studies will involve a more holistic study with a larger population, in order to obtain more generalizable results.

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Who You Know in Hollywood: A Network Analysis of Television Writers

Patricia F. Phalen, Thomas B. Ksiazek, and Jacob B. Garber

"It's who you know, not what you know," is a familiar phrase—often repeated by professionals in Hollywood. The present study focuses on "who knows who" among Hollywood television writers. Using network analysis, this exploratory study identifies the degree of centralization and types of connections found in this elite writers' network. Results show a great deal of collaboration in the network, and while male writers are more connected overall in Hollywood, women are more likely to be brokers—a structurally advantageous position. The authors provide explanations for collaboration patterns, especially with regard to gender differences in network roles, and propose avenues for further research.

Introduction

Television writers, unlike their feature film counterparts, have a great deal of decision-making authority over the final product (Newcomb & Alley, 1982, Phalen & Osellame, 2012). They create prime time entertainment; their ideas, experiences, and decisions determine the types of characters we see and the kinds of stories millions of people watch every day. As Marc and Thompson (1992, p. 4) put it, "The work of TV producers has come to dominate the American imagination and, increasingly, the world's imagination of America." Consequently, analysis of the institutions and processes of television production, or the program content of this influential medium, requires understanding writers and how they work.

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This study contributes to this understanding by identifying central figures in the network of prime time writers, mapping the characteristics of writers' networks, and posing questions for further research based on these findings. After reviewing the literature on writing for television, we explain our research questions, methodology, and results. We end with a discussion of this study's implications and proposed avenues for further research.

Literature Review

Academic studies of television writing come mostly from the fields of media industry studies and sociology. Phalen and Osellame (2012) found that the social realities of reputational effects, and the experience of the group writing process, dominate the professional culture of television writing. Their study documents, in the words of writers themselves, the importance of social networks in getting and keeping jobs. The research further suggests that lack of access to these networks often results from prejudice based on gender, race, and age.

Bielby and Bielby (1996) also observe that the highly structured market for television writers relies heavily on gaining access to the social network (p. 163). They argue that "women's marginal location within networks of decision makers, and the high levels of ambiguity, risk, and uncertainty surrounding employment decisions, social similarity, and gender stereotypes are likely to have a strong impact on employment decisions" (p. 249). The same authors (Bielby & Bielby, 2002) found that women and older writers face discrimination in television and feature film. Stempel's (1996) history of American television writing also suggests hiring bias against women and minorities.

Caldwell (2008) emphasizes the importance of studying the professional cultures of media workers. He observes that film and television are influenced not only by macroeconomic processes, but also by the micro-social level as local cultures and communities in their own right. The more we know about these communities, the better we will understand the creative products of these culture industries (p. 201). And, as Bielby (2010) argues, "understanding the social organization and dynamics of the creative worlds in which cultural production takes place is crucial to achieving a more nuanced and empirically informed approach to the study of global cultural production" (p. 590). A key dimension of the social organization and dynamics of writing for television is the configuration of the writers' network.

In addition to academic studies, literature about the television writing process includes two additional categories: "how-to" books and articles containing script samples, descriptions of the writing process and career advice for those new to the field; and transcripts of interviews with well-known writers. How-to publications, especially those that include overviews of the writing profession, invariably emphasize the importance of tapping into the network of writers by cultivating contacts in the industry. Pamela Douglas (2015), for example, provides a comprehensive description and analysis of the craft, including quotes

and anecdotes from successful television writers. She emphasizes professional networking as the way to find and land writing jobs on TV series, summarizing this advice as, “Producers hire who they know” (p. 198). She stresses the importance of building networks of trust and staying in touch with people over time. Smith’s (1999) discussion of writing as a business explains that getting hired as a writer might be based entirely on personal connections within the industry, sometimes requiring no formal education (p. 175). These publications also provide insight into the day-to-day work of TV writers, especially the social realities of the workplace (e.g., Blum, 1995; Epstein, 2006; Kelsey, 1995; Pearlman & Finer, 2004).

Transcripts of interviews with writers and stories about their career experiences provide valuable insight into the realities of professional success . . . and failure (e.g., Froug, 1991; Meyers, 2010; Prigge, 2005; Wild, 1999). When writers discuss their career paths, they often reference a friend or acquaintance that helped them find (and keep) their jobs. Prigge (2005) found, for example, that all seven writers he interviewed agreed that who you know is more important than what you know when it comes to getting a job as a television writer. Showrunners give a great deal of weight to recommendations when they hire a writing staff because, while evaluating an applicant’s writing ability is fairly straightforward, it is very difficult to know whether a writer is able to work with others under stressful circumstances. This kind of information is gleaned from people the showrunner trusts—in other words, people within his/her network of contacts (Phalen & Osellame, 2012).

Although both the academic and trade literature about television writing is rife with arguments about the importance of social networks, little research has been done on the specific configuration and ongoing effects of personal networks in the television industry. However, relevant empirical precedents do exist in research on the film industry. Cattani and Ferriani (2008), for example, studied the professional networks of filmmakers, concluding that individuals who occupy the intermediate positions between core and periphery in a network are in favorable positions to innovate. Perretti and Negro (2007) studied the characteristics of team membership in filmmaking, and found that genre innovation occurred when teams included newcomers. Yet other research (e.g., Wakabayashi, Yamashita, & Yamada, 2009) has found a lack of integration, where filmmakers display a tendency to collaborate with small, stable, and homogenous teams.

The goal of the present study is to address the gap in our understanding of the configuration and role of professional writers’ networks in the television industry.

Research Questions

The importance of professional relationship networks in the market for television writers, and the differential experiences of men and women within these networks, suggested the following exploratory research questions:

RQ₁: Who are the central figures in the Hollywood TV writing profession?

RQ₂: Is the network of writers highly centralized or more balanced?

RQ₃: Is there a difference between men and women in the influence they have in the network of television writers?

Our expectation was that the writers' network would be highly centralized with a few very powerful showrunners in a well-connected network. Writers like J. J. Abrams, Stephen Bochco, and Dick Wolf have created several highly successful programs—in fact, successful showrunners often have more than one show on the air at the same time. Their proven ability to create and run hit series makes them highly valued by studios and networks. It stands to reason that they would occupy a privileged position in the network.

Further, we expected the most powerful writers would be men, and far fewer women would be centrally located in the network. Based on previous research (e.g., Bielby & Bielby, 1996; Bielby & Bielby, 2002; Phalen & Osellame, 2012; Stempel, 1996) showing that women face more obstacles to advancement than do their male counterparts, we also expected women to appear more often on the periphery, possibly even in subgroups—small clusters of writers mostly or completely disconnected from the main network.

Methodology

In order to evaluate the network of writers in television drama, we created an extensive database linking writers with the programs they worked on. This information came from two commercial industry databases: Studio System by Gracenote and IMDBPro. Studio System is the standard data source used by the industry, so it was the primary resource used to compile the database. IMDBPro served as a backup to check for accuracy.

Our network database includes all regularly scheduled drama series that ran on broadcast or cable television during the 2005–2012 broadcast years, and all writers who worked on these series. Studio System identifies programs by the broad categories of “drama” and “comedy” as well as sub-genres such as sci-fi, crime, and mystery. Our analysis includes all the series they designate as dramas. In cases where programs are listed as both drama and comedy, we made judgment calls based on content. So, for example, we included *West Wing* and *The Newsroom* in our analysis of dramas, even though they are listed in Studio System as “drama and comedy.”

Some series had their full run within this time period; others began earlier or ended later but aired at least one season within these 7 years. This time frame was chosen for three reasons. First, the goal was to get a sense of the writers' network as it exists today—a “first look” at relationship patterns. Future analyses will include older programs as well. Second, the time frame ensures that programs still in their original

run are part of the database. And third, the approach yields a mix of “full run” and “partial run” series,¹ which means there is enough movement of writers between programs to capture connections built over time.

For each drama, the network database includes all writers credited on the series. Because titles are sometimes ambiguous in television, we used decision rules to avoid crediting non-writing producers in the database as writers:

- Showrunner, Supervising Producer, Consulting Producer, Writer, Creator, Script Editor, Story by, Story Editor, “Screenplay by” and “Teleplay by” are always credited as writers.
- Executive Producer, Co-executive Producer, Producer, Co-Producer, Script Producer and Series Producer are counted as writers if Studio System identifies them as writers in other capacities (e.g., if a Co-Producer on Program A is identified as a writer in his or her profile s/he is credited as a writer on Program A. If a Co-Producer is not identified as a writer in the profile, s/he is not credited in the network database as a writer on Program A).

Each writer is also identified in the database by gender to allow comparisons of networking patterns.

Network Analysis

Collaboration patterns were explored through a network analysis of all writers on the 380 prime time drama series in the dataset. The nodes in the network represent individual writers ($N = 2,432$) and the connections represent the number of times each pair of writers worked together on a series. The analysis was conducted with the UCINET (Borgatti, Everett, & Freeman, 2002) statistical package for network analysis and the visualizations were created with the complementary NetDraw software (Borgatti, 2002). For each writer we calculated a degree score, a common network measure of the number of connections per actor. Writers with high degree scores have collaborated more often with other writers—this is a measure of how prolific a writer is, as well as how influential s/he is in the network. For example, J. J. Abrams has a degree score of 137, meaning that he has collaborated with 137 other writers in the network.

Centrality measures offer a parsimonious way to capture the degree of collaboration for each writer in the network. The initial analysis included three common centrality measures: degree centrality, closeness centrality, and betweenness centrality. After careful consideration, we chose to use closeness and betweenness centrality in the final analysis because each accounts for both direct and indirect connections. “Direct” ties capture pairs of writers that have worked together on a series. “Indirect” ties would account for instances where writers A and C haven’t worked together, but they have both worked with writer B. We would say that writers A and C have an “indirect” connection through writer B. As Hanneman and Riddle (2005) suggest:

Degree centrality measures might be criticized because they only take into account the immediate ties that an actor has, or the ties of the actor's neighbors, rather than indirect ties to all others. One actor might be tied to a large number of others, but those others might be rather disconnected from the network as a whole. In a case like this, the actor could be quite central, but only in a local neighborhood. Closeness centrality approaches emphasize the distance of an actor to all others in the network by focusing on the distance from each actor to all others. (Chapter 10, Closeness Centrality section, para. 1–2)

In other words, closeness centrality is a more comprehensive measure because it takes into account indirect contacts to all other writers in the network. In fact, the centrality of an actor changes—often dramatically—when we look at closeness centrality vs. degree centrality. For example, the five most influential writers when we consider only first order connections are Jonas Pate, Bryan Burk, J. J. Abrams, Bruce Miller, and Marc Guggenheim. But when we consider indirect ties as well, the most influential writers are Ian Beiderman, Treena Hancock, Melissa Byer, Rob Wright, and Marc Guggenheim. Only one person shows up on both lists.

In addition to closeness centrality, we explored “brokerage,” or “betweenness centrality.” A broker is influential because s/he sits in a structurally advantageous position, where s/he can connect others in the network. In the hypothetical example above, writer B would be considered a broker between writers A and C. Hanneman and Riddle (2005) explain betweenness centrality:

betweenness centrality views an actor as being in a favored position to the extent that the actor falls on the geodesic [shortest] paths between other pairs of actors in the network. That is, the more people depend on me to make connections with other people, the more power I have. If, however, two actors are connected by more than one geodesic path, and I am not on all of them, I lose some power. (Chapter 10, Betweenness: Freeman's approach section, para. 1)

This means that when a writer is connected to another writer only through the one person who can broker the contact, that broker has power in the network. The five drama writers with the highest betweenness centrality scores are: Melissa Byer, Treena Hancock, Barbara Nance, Sheila Lawrence, and Gabrielle Stanton.

Findings

The full television writers' network, using a spring-embedded layout algorithm,² is shown in Figure 1. Black triangles are female writers; gray squares are males. The size of the nodes indicates the number of shows they've worked on. Nodes are located spatially based on their connections to other nodes, which means that two writers who have worked together will be closer to one another than two writers with no shared writing credits. The more a writer collaborates, the more centrally s/he will

be located. In order to reduce the clutter in this already-dense visualization, we chose to show only the nodes and connections, without writers' names. However, our observations in this section and the next will refer to writers by name when appropriate.

Contrary to our prediction for RQ₁, the television writers' network is not highly centralized; there is a great deal of collaboration in this network. This visual interpretation is supported by a relatively low centralization score³ of 0.63% (on a scale of 0–100%), which suggests a more equal distribution of collaboration patterns as opposed to just a handful of highly central actors with the rest on the periphery. Figure 1 is consistent with this interpretation, where the vast majority of writers exist in the densely connected center of the visualization. While the majority of those in the center are men, many women also occupy central positions. In fact, 2 of the top 3 writers, based on closeness centrality, are women: Treena Hancock and Melissa Byer.

As noted earlier, high degree scores indicate that a writer is prolific—s/he has worked on a number of programs, and is therefore connected to many other writers. It is interesting to note that the ranking on degree centrality yields a different “top 10” list than the ranking on closeness centrality. J. J. Abrams, for example, is one of the most prolific writers, but when indirect ties are included in the analysis, he barely makes the top 20 writers. One possible explanation for this is that Abrams hires the same writers on different shows, and/or he works with writers who are not part of the Hollywood network. As a consequence, he doesn't have the same number of indirect ties as his colleagues.

The network centralization score of 0.63%, while indicating that relationship patterns are more balanced than centralized, does not mean that there are no writers on the periphery of the main network.⁴ As Figure 1 illustrates, there are several subgroups that are loosely tied to the main network. There are several reasons a subgroup might be relatively unconnected. For example, a subgroup might have older connections that don't appear on this graph because our analysis is limited to 7 broadcast years. Additionally, while it is difficult for writers to move from one genre to another, some have made this change successfully; a subgroup might represent writers who have moved from comedy to drama and, as a consequence, have contacts in a different network. The subgroup could also work for a new production company that hired writers outside of the Hollywood mainstream. And, members of the subgroup might have worked on too few shows to develop an extensive set of contacts.

We expected to find more women than men on the periphery of this network because female writers face more obstacles to advancement. However, this was not the case. Writers in the subgroups are just as likely to be men as women. Whether (and how) these writers are able to transition from subgroups to the main network is a subject for future study.

To answer RQ₃, we compared the closeness centrality and betweenness centrality scores for men and women. Table 1 shows the results of a t-test of these scores.

Table 1
T-test Results Comparing Centrality Between Female and Male Writers (n = 2432)

	Female		Male		T
	M	SD	M	SD	
Normalized Closeness Centrality	0.49	0.10	0.51	0.06	−3.01**
Normalized Betweenness Centrality	0.09	0.21	0.07	0.15	2.37*

* $p < .05$, ** $p < .01$
Note. Means are based on real values for ease of interpretation, while t statistics are calculated with log-transformed values to address skewed distributions.

Normalized closeness is a metric that measures centrality in terms of the distance of each writer from all other writers. In essence, this measure accounts for the prestige of a writer’s connections—if s/he is connected to other central figures, s/he is closer to all others in the network. On this measure, there is a significant difference between male and female writers. Men are more likely to have contacts of a higher prestige.

“Betweenness” is a metric that indicates the extent to which a writer falls on the geodesic (shortest) paths between other pairs of actors—the extent to which a writer is in a position to broker connections. Normalized betweenness expresses this metric as a percentage of maximum possible betweenness. While men are more likely to be centrally located in the network overall (Normalized closeness centrality: $t = -3.01$, $p < .01$), women are more likely to be in a position to broker connections in the network (Normalized betweenness centrality: $t = 2.37$, $p < .05$). In fact, as we discussed earlier, writers with the top five scores on “betweenness” are women.

Discussion

This analysis reveals important characteristics of the elite Hollywood network of television writers, and suggests several questions for further research. The high degree of collaboration among writers in the network suggests that reputations are easily made, and lost. In this sense, the phrase “you’ll never work in this town again” is a real threat in terms of writers’ careers. Potential employers are likely to hear about bad work, bad attitudes, and bad behavior on the part of writers before they even meet.

While not particularly surprising that men are more central in the network than women, a lack of diversity does have consequences for the production of television drama. However, the evidence that women can exercise power through the ability to broker contacts is significant. While past research finds discrimination and hiring bias against female writers (e.g., Bielby & Bielby, 1996; 2002; Stempel, 1996), this study suggests that some women in Hollywood have the opportunity to counteract

these systematic tendencies by leveraging their structurally advantageous position as brokers. In his widely cited study “The strength of weak ties,” Granovetter (1973) showed that indirect (weak) ties can be just as important as direct ties in an individual’s network. For instance, he found weak ties were often more important in finding a new job because these connections introduce individuals to new contacts that would otherwise be outside their immediate network (strong ties). This pattern is consistently found in “small world” networks and is widely recognized in the “six degrees of separation” phenomenon (Watts & Strogatz, 1998). It also offers an empirical explanation for the common practice of “networking” to find a job, and suggests—from the perspective of brokerage—that female writers do hold powerful positions in the network of Hollywood TV writers.

Research has shown that minorities are conspicuously absent in the writers’ rooms of Hollywood (Phalen & Osellame, 2012). At the present time our database does not contain information on race or ethnicity; as we add this information we will address questions related to minority writers. For example, do writers of different ethnicities network in different ways? Are minority writers present in the central positions of the writers’ network? And how strong are the ties among minority writers themselves?

Another avenue for further research is the comparison of different networks of writers. As noted earlier, writers generally choose either comedy or drama; very few move from one genre to the other. It is possible that the comedy writers’ network exhibits different centralization and brokerage patterns than the drama network. Do comedy writers network in the same way as their counterparts in drama? Are women more or less likely to be central figures in the comedy network? Are the collaboration patterns in comedy similar to those we found in drama?

Longitudinal analysis will allow us to look at changes in relationship patterns and, importantly, to identify events in the television industry that have affected writers’ networks. For example, when cable television became a viable competitor to broadcast television in prime time, did established writers move from broadcast to cable? Did new writers enter the network—and what happened to them once they did? Are streaming services like Netflix and Amazon hiring experienced television writers for their original series, or are they drawing from outside the TV writers’ network (e.g., hiring feature film writers)? Do changes in the networking patterns of writers coincide with technological or other changes in the television industry?

Finally, while this exploratory analysis provides broad insights into the overall structure of the TV writers’ network, interviews and ethnographic work would contribute depth to our understanding of these collaboration patterns. Taking the present findings as a starting point, researchers could explore individual interpretations regarding collaboration in Hollywood. For instance, how do women experience the networking process? Do the brokerage findings actually play out in the day-to-day experiences of female writers?

The network characteristics we identified in this study of drama writers—the dominance of male writers as central figures, the highly collaborative nature of the television writing profession, the influence of female writers as brokers in the network and the presence of peripheral subgroups—add to our knowledge of the

structure behind the production of television programs. Our findings also raise the questions for further research that we outlined in this section. "Who You Know in Hollywood" demonstrates that network analysis is a very promising line of research on television production.

Notes

1. "Original run" means the first time a series runs on television; "full run" means the series is over; "partial" run means the series is ongoing.
2. The spatial placement of the nodes in Figure 1 is based on a spring-embedded layout procedure. The distance between two nodes is determined by a combination of the geodesic distance (i.e., shortest path) between those nodes, node repulsion, and similarity in tie strength. In simpler terms, the procedure treats the links as springs that enact a force upon a given node based on the tie strength between that node and all those to which it is connected. Thus, stronger ties will pull nodes together, while still accounting for the strength of ties to all other nodes.
3. Network centralization is a measure of the variability or inequality in the degree scores of all nodes in a given network (Monge & Contractor, 2003). It provides a macro-level indicator of the relative heterogeneity of the network, in terms of the linking architecture. Network centralization indicates the extent to which a few nodes exhibit disproportionately high degree scores. A high centralization score represents a high level of inequality in the degree scores, while a low score signifies greater equality. Thus, a high score suggests that a small number of writers are central in the network, with the rest on the periphery. A low centralization score, as was found in this study, suggests a relatively even distribution of degree scores across the entire network.
4. UCINET offers a core-periphery analysis, which seeks to determine whether the network is a good fit for a core-periphery structure. We ran this on our network, but the network was not a good fit for the strict core-periphery model. This does not mean that there isn't a core of more densely connected writers (i.e., the central ones); it just means that they are not completely disconnected from the rest of the network.

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One Click, Many Meanings: Interpreting Paralinguistic Digital Affordances in Social Media

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One Click, Many Meanings: Interpreting Paralinguistic Digital Affordances in Social Media

Rebecca A. Hayes, Caleb T. Carr, and Donghee Yvette Wohn

In this study we conceptualize cues in social media that require a single click (e.g., Likes, Favorites) as paralinguistic digital affordances (PDAs). Why do people use PDAs and how do they interpret them when they are the recipient? Through focus groups (N = 25) and interviews (N = 26) we address these research questions within a uses and gratifications framework. Using adaptive structuration theory as a lens for analysis, we examine both faithful and ironic uses of PDAs, finding they contribute more than phatic communication and may indicate just as much about the relationship between sender and receiver as they do content.

Introduction

One of the most common affordances of social media is the ability to Like,¹ Favorite, +1, or Upvote. As individuals and organizations upload billions of content items to social media daily (Tam, 2012), other users utilize these one-click tools to signal a response. But what do these lightweight signals *mean*, to both the users sending and receiving these cues? This question is particularly interesting as a frequent occurrence in social media is for a user to utilize the same cue for posts of vastly different valences. For example, a Facebook user may Like one status update extolling a microbrew, only to immediately Like a different post announcing a cancer diagnosis. Thus, a single click may be sent and interpreted in a variety of ways.

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This research sought to understand the communicative functions users give to these simple tools, untangling the complex meaning users may ascribe to communicating via a single click, and additionally how the idiosyncrasies of individual social media may affect that meaning. We first conceptualize these tools as paralinguistic digital affordances (PDAs), explicating them as representative of phatic communication in their design but possibly not in their usage. Then, guided by uses and gratifications (Katz, Blumler, & Gurevitch, 1973), we report the results of qualitative research utilizing interviews and focus groups, conducted to examine the meanings both the sender and receiver ascribe to these tools. Responses were analyzed through the theoretical lens of adaptive structuration theory (AST; DeSanctis & Poole, 1994), and results suggest the diversity of nomenclature for these one-click means of interactions is paralleled by the meanings to which social media users ascribe their use and receipt.

Literature Review

Communication in Social Media

Social media are “internet-based, disentrained, and persistent channels of mass personal communication facilitating perceptions of interactions among users, deriving value primarily from user-generated content” (Carr & Hayes, 2015, p. 7). Approximately 70% of global Internet users (and 74% of users within the United States) actively use social media (Pew Research Internet Project, 2014), with the most trafficked platforms being the social network sites (SNSs) Facebook, Twitter, QZone, and Google+; and the professional networking site LinkedIn (Statista, 2014).

Social media afford multiple means of communication, enabling interactions among users through self-presentation and exchanges that are concurrently mass (i.e., one-to-many messages) and interpersonal (i.e., one-to-one messages) messages (Walther, Tong, DeAndrea, Carr, & Van Der Heide, 2011). Communication within social media can include substantive and meaningful exchanges among close relational ties, such as messages within social support groups (Wright, 2002) or private messages among close friends and family (Gilbert & Karahalios, 2009). Social media additionally afford lightweight communication among weak and latent relational ties (Ellison, Steinfield, & Lampe, 2007), as users can passively observe friends or craft small messages to others. In all, social media platforms often enable multiple tools for user interaction, ranging from complex multichannel messages to paralinguistic cues.

Paralinguistic Digital Affordances in Social Media. Technical tools of social media that enable user activity (Smock, Ellison, Lampe, & Wohn, 2011) have changed over time, but one tool that has remained relatively constant is the ability to engage in lightweight acts of communication such as the Like (Instagram, Facebook), Favorite (Twitter), +1 (Google+), or Upvote (Reddit and Imgur). We conceptualize these features as *paralinguistic digital affordances* (PDAs): cues in social media that

facilitate communication and interaction without specific language associated with their messages. Engaging in PDAs represents one of the most common behaviors on social media, and their use is included in many measures of social network use; however, the meaning and motivations behind users' behavior remain unexplored.

Phatic Communication in Social Media. Phatic communication is, "language used in free, aimless, social intercourse" (Malinowski, 1972, p.142) that displays sociability, but is comprised of limited, or no, real information. It is a "minimalist communicative practice" (Coupland, Coupland, & Robinson, 1992, p. 210) that is increasingly becoming a part of online media culture due to a lack of focus on exchanging substantive content (Miller, 2008). Small talk, such as "How are you," exemplifies phatic communication in face-to-face contexts, as the purpose of the question is less about wanting to know the other person's state and more about opening up the possibility for further communication (Coupland et al., 1992).

While early work on phatic communication focused on language, more recent work includes nonverbal behaviors, in tandem with the development of technologies designed for phatic purposes. Phatic technologies are those that are primarily used to establish, develop, and maintain human relationships (Wang, Tucker, & Rihll, 2011) rather than convey specific information. In this respect, PDAs were intended by social media designers to serve phatic purposes (Langley, 2014).

Though the designers of these tools intended phatic uses for these PDAs, their usage and meanings may have developed beyond the scope of their original intent. From a social construction of technology (SCOT; Pinch & Bijker, 1987) perspective, meanings and uses of new technology are not shaped exclusively by their engineers, but by the social norms that develop around use and by users. For example, the designers of Foursquare, a location-based social network service, originally intended for check-ins to be a part of a competitive game; but Frith (2014) found that check-ins had many meanings for users, served a very functional purpose in social coordination, and few users actually thought of them as part of a game. Consequently, the actual motivations for use and meaning on receiving of PDAs among users could be different from the creators' intentions.

Value of Communication in Social Media. Carr and Hayes (2015) posited that a social medium's users decide its value, reiterating Shirky's (2010) contention that the innate rewards of providing and interacting with site content contributes to the popularity and utility of social media. Both the technical and social infrastructures of various media may afford different cues, interactions, relational contexts, and perceived values to its users. Papacharissi (2009) noted users of Facebook, LinkedIn, and ASmallWorld utilized each service differently for self-presentation, interaction, and goal attainment given the affordances of each service; and Carr (2011) found individuals interpret identical messages differently dependent on the context of the social network site in which the message is observed.

Given the value of a social medium and its affordances to users seem to be idiosyncratic by site, the meaning and motivations behind use of a technological affordance may, too, be idiosyncratic, as users may utilize similar affordances to

achieve different goals or communicate different intended meaning across various services. Therefore, to understand whether and how similar affordances (i.e., phatic cues) may be used for distinct communicative purposes within different social media, we ask the guiding question:

RQ₁: Does the meaning of a PDA differ by social media platform?

Theoretical Foundations

Uses and Gratifications. Uses and gratifications (U&G) is a psychological communication perspective that posits that audience members are active and goal-oriented media consumers who select media channels and messages to satisfy different needs (Katz et al., 1973; Rubin, 1994). It assumes users are aware of their interests and motives and have individual expectations of media that aid in their media choice and needs gratification.

While U&G has been criticized for its vague conceptual framework, lack of explanatory power, overuse of the active audiences' assumptions, and for being too individualistic (Alhabash & McAlister, 2015; Rayburn, 1996), the approach has seen extensive application in social media research (e.g., Smock et al., 2011; Wohn & Lee, 2013) and is appropriate to investigate why media consumers use a technology and its affordances (Papacharissi & Mendelson, 2010). Smock et al. (2011) argued that social media tools are utilized in different ways to meet the differing needs of users and as such, to truly understand the motivations for use of social media, researchers should be focusing on specific features in the toolkit of affordances a social medium provides. However, their research was conducted just before Facebook introduced the Like in 2009; thus the motivations behind its use, and similar PDA features on other social media, remain unknown. It is especially important to examine the uses and gratifications of PDAs across multiple platforms as most prior research on social media motivations focus on one platform or one specific feature (e.g., Chung & Yoo, 2008; Lai & Yang, *in press*). We are thus interested in identifying the reasons people use PDAs, using U&G as a framework to understand that behavior:

RQ₂: What motivations drive use of a PDA?

While research employing the U&G approach has mainly examined the gratifications individuals seek when engaging in a particular media-related behavior, the framework does not cover the gratifications of the person who is the target of that behavior. Though more recent studies examine interactivity (Yoo, 2011), most extant U&G research focuses on the initiator of the behavior (Sundar & Limperos, 2013) rather than the receiver. This has not posed a problem in traditional media research because, unlike social media, the media channels being studied did not offer interactivity. Thus, in the context of PDAs, it may be equally important to examine the gratifications associated with the receiver end of the dyad:

RQ₃: What gratifications are associated with receiving a PDA?

Adaptive Structuration Theory. DeSanctis and Poole (1994) proposed adaptive structuration theory (AST) to consider the mutual influence of technology and social processes, noting the recursive relationship of the technology (and its use or lack of use) and the social processes involving the technology. AST acknowledges groups can appropriate the spirit of a technology in one of two ways: faithfully or ironically. In *faithful* appropriation, the group (both in structure and in social processes) follows the spirit of the technology, using it as intended by the developer(s). In *ironic* appropriation, the group uses a technology in a way that violates its intended spirit. AST has been effectively utilized to explore uses (both intended and novel) of communicative tools, even as lightweight as a phone's ringer. Donner (2008) looked at Rwandan teens' use of predetermined patterns of unanswered rings and hang-ups to signal friends and family members without incurring the phone charges.

Many sites enabling PDAs explicate their intended purpose and most of these explications center around the expression of positive emotion toward a post. Facebook (2014) defines their Like feature as, "an easy way to let people know that you enjoy [a post] without leaving a comment" and Twitter (2014) espouses their Favorite as a way to, "let the original poster know that you liked their Tweet." Reddit (2014) explicates an Upvote as, "If you think something contributes to conversation, upvote it." PDAs are faithfully adopted when users literally enjoy the content and seek to display positive socioemotional attributions directly toward the post. It is therefore notable that faithful appropriation of PDAs acknowledges attributions about the content without inferring attributions about the poster, the context of the post, or the cultural or societal meanings that may be related to but beyond the scope of the post.

However, users could ascribe additional meaning to PDAs beyond their faithful structures and adopt PDAs ironically as a means of ascribing meaning beyond the post's content, potentially including to indicate meaning toward the poster, the context, or even signal the PDA provider's own identity. Perhaps a Like does not mean that one literally felt affinity toward the content, nor does Favoriting a post indicate the post is preferred over others, and users instead have adopted their own meaning and use of these tools specific to the media, their social connections, and their communicative goals. Thus, a research question is posed to understand how individuals *actually* use and ascribe meanings to these PDAs through the lens of AST:

RQ₄: What are the a) faithful and b) ironic motivations of PDAs by the sender?

Yet, PDAs are not discrete, objective messages: They are decoded as well as encoded. Thus, in addition to the motivations for generating PDAs, there may be faithful and ironic interpretations of those receiving and perceiving PDAs. While a receiver may interpret a PDA faithfully as the sender displaying positive socioemotional attributions toward her or his posted message, so too may a receiver ironically decode and interpret the meaning of the PDA. Thus, we want to understand how receivers ascribe meaning to PDAs:

RQ₅: What are a) faithful and b) ironic interpretations of PDAs by the receiver?

Method

We employed a qualitative approach, as it “frees the investigator from the burden of forcing *a priori* standards on an audience” (McLeod, Bybee, & Durall, 1982, p. 3). A qualitative method is particularly useful in the context of the current study because certain motivations, especially those that are “ironic” in nature, would be difficult to construct *a priori*. To answer these exploratory research questions, this study employed both focus groups and semi-structured interviews to overcome limitations associated with each method and sampling bias.

Focus Groups

Social media are inherently interactive; therefore it was vital to employ a methodology that allowed interaction between users to explore their experiences with social media use. Focus groups facilitate insights about attitudes and perceptions by observing and recording interactions between respondents (Krueger, 2009), which can generate insights not possible in an individual setting as participants’ responses build on each other. Focus groups are particularly valuable for exploring uses of new technology (Lindlof & Taylor, 2010), and allow researchers to fully explore the customs of social media use in social, natural context.

Participants. Focus group participants ($N = 25$) were recruited from undergraduate classes at a mid-sized Midwestern university in exchange for extra credit. Two focus groups lasting approximately 60 minutes were conducted, consisting of 12 and 13 participants. Participants’ ages ranged from 19 to 22 ($M = 21$), 20 were female, and were of diverse ethnicities.

Procedure. Focus groups were held in a campus setting and were audio recorded. A short questionnaire inquiring about demographics and social platforms used and preferred was administered before discussion began. Topics ranged from personal uses and interpretations of social media affordances to how participants thought their friends interpret social media affordances.

Semi-structured Interviews

Though focus groups are useful in observing how people dynamically engage and interact, they are limited by their inability to probe further into the thoughts of each participant. Moreover, social dynamics of the group can prevent individuals who perceive themselves to have a minority opinion from expressing themselves.

Therefore, we conducted separate semi-structured interviews to address the shortcomings of focus groups while maintaining a similar structure in terms of the question protocol.

Participants. Interview respondents ($N = 26$) were recruited in urban locations in the greater New York City area through convenience sampling. Because the focus group participants were college students with social science majors, we oversampled engineering and science-related majors and non-students. Respondents ages ranged from 19 to 41 ($M = 25$), were evenly split by gender, and were of diverse ethnicities.

Procedure. Interviews about 30 minutes in length were held in a campus setting and were audio recorded for later transcription. Research assistants conducted interviews using a script based on the focus group protocol, modified to work in a one-on-one setting.

Results

Across the focus groups and interviews, participants identified using several social media platforms. All participants had and used Facebook and Twitter accounts, reflecting the two dominant platforms subsequently discussed. While interview respondents focused on these two platforms, focus groups additionally addressed Instagram, Snapchat, Tumblr, Reddit, and Google+ in descending order.

PDAs Across Platforms

RQ₁ inquired whether the meaning of a PDA differed by platform. One of the first questions asked participants to describe whether Likes, Favorites, and Upvotes meant the same thing to them. The majority of respondents indicated the meaning of these cues were not synonymous.

A common theme was the relative devaluation of Facebook Likes, which were perceived as more common. Participants repeatedly noted that when scrolling through their feeds, their PDA behavior on Facebook is more reactionary than on other platforms, based somewhat on the poster rather than the posted content. "Oh, my friend posted a photo. Like" (Sally², 21). On Facebook, the act of aimlessly providing Likes in reaction to seeing their Friends, rather than actually processing the content, seemed to manifest itself in participants' expectations for a threshold level of Likes a post needed to receive to be "good." Participants questioned the value of a post not achieving that threshold level of Likes, and sometimes deleted an unsuccessful post.

This was not the case on Twitter: "Lots of posts go by with no Favorites. It isn't weird" (Olivia, 22), and "Once you tweet it, it's gone" (Josie, 19). On Twitter, the

content had to be “good” to get Favorited, though what “good” meant seemed to vary, with criteria including content perceived as funny, thought provoking, or ironic. “I actually read what is being posted on Twitter versus just scrolling through and seeing what’s going on” (Lizzie, 22).

Liking on Instagram was a more selective behavior. Women in the focus groups said their friends paid attention to how many Instagram PDAs they received and from whom. Though few participants had experience with Reddit, one male participant noted that Upvotes were a form of social currency—the more Upvotes you accumulated, the higher your “internet karma”—and indicated his subsequent posts would be taken more seriously as a result. It was clear different meanings were attributed to PDAs sent and received across social media platforms, differences most manifest in a threshold level of PDAs, varying by both users and platform, for users to be confident in the quality of posted content.

Motivations for PDA Use

RQ₂ probed the motivations behind use of PDAs. Four motivations for senders’ use of PDAs were identified: literal interpretation, acknowledgement of viewing, social support and grooming, and utilitarian purposes.

Literal Interpretation. Some participants interpreted PDAs literally as an evaluation of the content to which they were responding. Participants liked Facebook content they actually liked: “If it’s something that makes me laugh, I’ll Like it. Or if it’s a meme that says something that actually makes sense, I’ll Like it” (Denzel, 41). Certain types of content seemed to lend themselves to literal Likes, including celebrity news, pets, humor, and new product releases. Those who interpreted the Like literally refused to provide the PDA if they disliked the content. Andy (22), a fan of basketball player LeBron James, said that he Liked photos of the athlete but avoided Liking posts that criticized James.

On Reddit, the Upvote was interpreted literally as to the extent the user sought to promote the content up to the front page of Reddit through the site’s voting mechanism. Likewise, as an explicated use of Favorites is to save broadcast content for later reference, many focus group participants noted this use on Twitter, especially for professional tips and knowledge shared by sources within their chosen industry.

Acknowledgement of Viewing. Particularly when discussing Facebook and Instagram, a few participants suggested PDAs were a way to acknowledge they had seen a post. Participants described Liking as “a subtle recognition,” “affirmation of someone’s post,” and “OK, will do” when there was a request of them. A few participants similarly reported Favoriting on Twitter as a way to signal they had seen the post. Some participants noted Liking or Favoriting purely to prevent people from asking them questions such as, “Did you see the

photo I posted?" when they knew their Friends were tracking who had Liked a post.

Social Support/Grooming. Participants also noted that they utilized PDAs as a form of social support. "[Facebook Likes are] like saying, 'Hey! Good job!' It's a sign of general communication and acceptance that we're on the same page," said Carolyn (23). Several participants talked about how significant life events or achievements, such as weight loss, always warrant using PDAs to show their support, saying, as Jake (22) explained, "That's awesome!" Some talked about how they felt when something they posted didn't get enough attention, and as a result would Like their close friends' content profusely so this didn't happen to them.

This social support also had an aspect of social grooming, as participants would respond to others' content through PDAs because they felt obliged to do so as a part of relationship maintenance. Several participants discussed that they had to "Like back" or reciprocate to preserve the relationship. The concept of "Like Whores" emerged in one focus group following one participant's disclosure that, "I have a friend who is so insecure, she won't leave the house without checking her outfit with whoever's online; and I know it is important to her, so I roll my eyes and Like that Instagram photo" (Kelly, 21). A few participants also said they utilized PDAs if they wanted to develop a better relationship with the other person. Using PDAs for social grooming was more prevalent on Facebook than on other social media.

Utilitarian Purposes. A few participants used PDAs as a means of keeping a record of particular content. In these cases, the participant did not view the PDA as being *sent* to the content poster, but rather as a personal archival tool. Only some social media, however, supported this behavior. Twitter, Tumblr, and Instagram have an easy function of allowing users to see PDAed content. "With Liking on Tumblr, you can go back to the things that you Like. On Facebook, there really isn't any kind of function that lets you do that with content that you Like, and if there is, it's not very easy" (David, 22). Twitter's Favorite button was particularly used as an archival tool, with users noting that it was interesting to revisit old favorites. "I use Twitter for a lot of industry stuff, and when I find a good article or something, I'll Favorite to save it for later" (Quinn, 20).

Gratifications of Receiving PDAs

RQ₃ probed the gratifications of receiving PDAs. Three main gratifications of receiving PDAs emerged: emotional, status, and social gratifications.

Emotional Gratification. Participants reported feeling happy when they received a PDA and unhappy when they did not. Kyle, 22, said he would "feel sad" if no one Liked his photos on Instagram. Several participants discussed how receiving a Like

on certain types of content made them feel better: "It feels pretty good. I've like struggled with weight loss and stuff, and like body image issues. So definitely, I get more excited than I should when I get Likes, on a picture" (Emma, 21). Another form of emotional gratification was a feeling of self-worth. Sophia (39) said she feels emotional gratification when people Like content that she feels has high informational value because she "helped someone out." However, emotional gratification could erode over time. Linda (31) noted that when she was first on Instagram, receiving Likes would make her feel special; but now that she has been using it for a couple of years Likes no longer have this effect.

Status Gratification. Receiving PDAs was also associated with boosts in social status. Participants discussed how people brag about how much feedback their content draws. "The Likes are sort of like a status. People are just like, 'I have five million Likes or thousands of Likes'" (Alan, 20). A few participants said this status boost was more prominent if it was unexpected or if they did not frequently get PDAs on their own content. "It makes me feel like, 'Oh somebody paid attention to me! Someone's actually interested in what I'm sharing!' And it's ... it's a nice feeling, it's a nice little ego boost for like, 3 seconds" (Tanya, 22). Because the PDAs on Reddit are explicitly tied with the systems internal ranking and hierarchy, users seemed to accept there would be status gratification as one's content was Upvoted.

However, some participants did not perceive status gratification positively, describing it as a trait seen in others but not themselves. "Some people may take it too seriously, like if getting Likes is the thing to do and it makes you cool if you get an excessive amount of Likes. It can be like an ego boost for some individuals who have self-esteem issues, which to me is pointless, especially when you have thousands of followers that you don't even know" (Joe, 24).

Social Gratification. The final theme identified was the development or enhancement of interpersonal relationships via PDAs. Several participants discussed how using PDAs, especially via Twitter, helped form or maintain relationships outside of social media. They described receiving PDAs as reminders of the other person and their relationship. "Liking makes me more aware of the friendship because it's sort of a reminder of them every time I see that they liked something" (Brianna, 25). Similarly, George (31) said that PDAs, though nothing like meeting in person, served as an easy way of maintaining relationships. Others mentioned they had found "Twitter friends" who they didn't know in real life, but knew based on their personalities and content via Twitter, and interacted with on a semi-regular basis. "There's this girl in California, I think, who tweets a show I watch, and I Favorited some of her stuff, and she followed me. We tweet back and forth now during the show" (Olivia, 22).

Beyond fostering online relationships, the exchange of casual PDAs sometimes led to unexpected relationships offline. Elizabeth (27) related an offline relationship developed from the initial exchange of Facebook Likes:

My fiancé now was just a stranger on Facebook but we had mutual friends. We used to Like each other's posts all the time because we were both going through a similar situation and we would relate to it. Eventually we started to talk through messages on Facebook and that lead to exchanging phone numbers which actually lead to a date and now three years later were engaged. How crazy is that?

Several respondents noted PDAs are likewise means of fostering new professional connections, such as by sending or receiving Favorites to Tweets to content and hashtags indicating information salient to their profession.

Faithful and Ironic Uses

RQ₄ and RQ₅ sought to investigate the faithful and ironic meanings encoded and decoded by senders and receivers of PDAs, respectively. The analyses of RQ₂ and RQ₃ suggest both faithful and ironic adoption of PDAs as cues both sent and received.

Faithful Appropriation. Users acknowledged faithful appropriations of PDAs, most evident in the literal interpretations of PDAs, utilizing the cues for their denotative purposes: addressing properties of posted content. Discussing how they learned the social norms of different social media sites, participants mentioned they took some cues from what features were called to learn their meaning, suggesting that users initially adopted the site creators' intended meanings. On Facebook, a Like "... doesn't mean much beyond I've appreciated it, it was funny or whatever" (Jake, 22); and on Twitter, "Since I see tweets from so many different people, I have to really like something to Favorite it, it has to be worth me actually reading it" (Melody, 20).

In discussing what to do when content is sad or disturbing (e.g., an obituary), participants noted the phrasing of a post was important and at most times of grief, commenting might be more appropriate than a PDA. For example, "RIP Grandma," would necessitate commenting, while a PDA may be utilized for, "My grandma passed away last night, the conclusion of a life filled with love," since the PDA would validate the sentiment, not the event. These responses indicate PDAs are both sent and received faithfully, specifically when the cue is used to address properties of the posted content.

Ironic Appropriation. Though faithful appropriations were acknowledged, ironic appropriations of PDAs emerged as a frequent use and gratification for senders and receivers, respectively. The most prevalent ironic appropriation across social media platforms was the use of PDAs for social motives toward the message poster, rather than the content itself. Sarah, 22, said, "When someone tweets at me and there isn't really anything for me to do, I'll just Favorite it." In addition, the discussion of "Like

Whores" indicated some people would just Like their friends' content to avoid the inevitable offline, "Did you see my post?!" or, "Why didn't you like that?!"

Other ironic adoptions included social support and reciprocity. For example, Jake, 22, commented, "Both Twitter and Facebook are great to commiserate with people—someone else is having a bad day, and they post about and you Like it because you feel them." Reciprocity was addressed by Josh (22) who said, "We all have that one person who favorites everything we post. I kinda' feel obligated to do the same, and I at least Favorite some of their stuff I don't think I would otherwise." The use of PDAs as social support or validation reveals that the ironic appropriations of PDAs may be more widespread and salient to social media users than the faithful appropriations of PDAs.

Discussion

PDAs: Phatic Cues and More

Our results, mostly from young adults, provide a broad picture of the uses and gratifications of paralinguistic digital affordances, and how they enable phatic communication within the social media environment. Participants actively discussed using PDAs as phatic cues, particularly on Facebook where Liking was often articulated as a nearly aimless, automated communicative action, regardless of the sender's content and without specific meaning attributed to either transmission or receipt of a Like. Yet PDAs are more than phatic cues, serving both meaningful communicative and banal utilitarian purposes, including acknowledgements, interpersonal and social networking mechanisms, and archival and retrieval tools.

Uses and Gratifications

Across all platforms, users noted both intentional and reactionary motivations for their use and interpretation of PDAs. Social motivations and desire for status were consistent with categories found in previous U&G research of social network sites (Lai & Yang, *in press*; Smock et al., 2011) and new media in general (Sundar & Limperos, 2013), particularly the use of an online tool as a means of human interactivity (Chung & Yoo, 2008; Yoo, 2011). Previous research has also focused on the sociability enabled by interactive media (e.g., Yoo, 2011), which was apparent in the present data as users utilized PDAs interactively to acknowledge content or send phatic feedback. However, the qualitative method also uncovered a new use not yet addressed in U&G studies: utilitarian motivations. Participants reported Favoriting and Liking content in Twitter and Instagram, respectively, to later retrieve content, suggesting a practical, information-oriented use.

Some participants indicated their use of PDAs was much less considered, often clicking the Like or Favorite function out of habit without considering the content.

This non-conscious, almost mindless behavior supports LaRose's (2010) theory that much of media use is habitual. Ritualistic or habitual use can suggest a less active audience (Ruggiero, 2000), as users engage less with the medium and its content, doing so only peripherally and without cognitive effort into processing mediated messages. Participants paradoxically reported engaging in such habitual PDA behaviors without consideration of the content, but subsequently ascribing meaning to the PDA they received that may well have been habitually clicked by a friend.

Taken together, an important finding of this research is that, reflective of the SCOT (Pinch & Bijker, 1987), the normative uses and gratifications of PDAs are distinct for those sending and receiving PDAs. When discussing receiving PDAs, participants did not reflect on or seek to divine a PDA sender's intent, instead receiving gratification from the PDA independently of the sender's encoded meaning. In other words, even though participants acknowledged sometimes haphazardly Liking and Upvoting content, when discussing receiving PDA and the meaning of the cue they did not consider someone clicking the button on their post could have likewise clicked out of boredom, instead ascribing meaning to the phatic cue. Future work addressing PDAs should therefore consider the perspectives of the sender and receiver, and the unique uses and gratification of each.

Adaptive Structuration of PDAs

Another original finding of this research is the faithful and ironic adoption of PDAs as system and communicative features within various social media platforms, extending our findings beyond their mere use. As what may be a use and/or gratification within one social medium may not hold for another social medium, AST can serve as an effective lens to understand how individuals are using PDAs without constraining analysis to a particular phatic cue or medium. At least in some ways, users are conforming to the infrastructure and explicated affordances of social media tools, using features as intended, to faithfully indicate they "like" a post or denote some content as their "favorite" amongst other posts. But perhaps more interesting and novel from these focus groups are users' ironic uses of PDA.

Results reveal several ironic appropriations of PDAs, extending beyond the tools' explicated and intended uses. Though some PDAs were used as intrapersonal tools (e.g., Favoriting a tweet to enable retrieval), most participants acknowledged PDAs as interpersonal tools, enabling interaction without expending time or cognitive resources to construct more complex messages, and reinforcing prior findings of the benefit of social media for lightweight maintenance of weak and latent ties (Ellison et al., 2007) and provision of social support (Guo, Li, & Ito, 2014). Though dependent on the phraseology of a post, PDAs may be used to signal social support, affirm, maintain, or develop interpersonal ties, or to demonstrate solidarity with an individual or espoused cause. This social support function reaffirms one of the most ironic uses of PDAs, whereby an individual may utilize the cue to communicate support toward a poster that was a direct contradiction to the faithful appropriation of the PDA with regard to the

message content. For example, Liking a friend's post about failing a test does not faithfully indicate a sender's fondness for their friend's failure, but rather is both sent and interpreted as a message of support following an undesirable performance.

An additional ironic appropriation of PDAs appears to be their use as interactive tools. Participants revealed a more complex use of PDAs as means of providing feedback to message senders, utilizing PDAs to interact with others nonverbally. Several participants noted the reciprocal nature of PDAs, suggesting some content was Liked/Favorited/+1ed not due to the nature of the content, but rather because of the social norm and expectation of reciprocity. As the poster had previously Liked/Favorited/+1ed the participant's content, the individual felt obligated to occasionally provide a reciprocal phatic cue to the poster, potentially as a means of actively maintaining reciprocal levels of disclosure and interaction as expected by social penetration theory (Altman & Taylor, 1973). The social demonstration not only enables users to acknowledge a user's social media content, but does so in a way that the PDA is visible to others, thus serving as a means of interacting mass personally with the content, the poster, and a broader audience.

These findings have both theoretical and practical implications. Theoretically, they expand many conceptualizations of messages when considering that giving single, uniform phatic cue like a PDA can convey several messages depending on the social medium, relationship between interactants, social context, content being PDAd, and likely combinations thereof. Thus, theory—particularly regarding communication in social media—may need to be developed to take into account both the explicated cue and the ironic interpretations of senders and receivers as they encode and decode the same signal differently based on complex interactions of communicative and relational sources. Practically, developers may need not worry so much about the particular verbiage of their tool's PDA given that users often expand its use beyond its initial semantic intention; but developers should simultaneously consider that PDAs may represent a substantive amount of communication within a social medium both quantitatively (given the billions of PDAs used each year) and qualitatively (given the myriad of meanings each PDA may carry).

Limitations and Future Research

Several limitations in the present work are worth noting, as they bound the findings and afford opportunities for future study. First, results are not intended to be representative or generalizable; and rather serve to identify the variety of uses and gratifications of PDA use. Future work can build from the identified uses to develop and empirically assess the frequency, antecedents, and effects of PDA use across broader demographic samples and research methods.

Related, future work should more carefully probe the differences in use across individual social media tools. Our data did not enable comparisons based on the nature of the social medium or type of content posted to which the PDA is used. Others (e.g., Napoli, 2011) have noted the nature of interactivity may be, in part, a

product of the channel more than the individuals using the tool, and it may be that a PDA on a channel for predominantly social or interpersonal interaction (e.g., Facebook, Instagram) is qualitatively different than a PDA on a corporate or organizationally-focused social medium (e.g., LinkedIn, IBM's Beehive). Likewise, data from this study imply differences may exist in the use and meaning of PDAs based on content, for example whether the initial post was text or photograph; but are not sufficient to draw conclusions. Future studies should further explore the nature of the medium, the interactivity therein, and the initial posts that elicit PDAs and their individual and interactive effects on the use and meaning of PDAs as phatic cues.

Conclusion

The social norms and vernacular of social media may be increasingly complicated, as users Like posts they do not actually like, Favorite banal tweets from celebrities to feel connected, and +1 inconsequential content. The meaning behind these simple features—all representing paralinguistic digital affordances—can be, but is not always, complex and rich, even if activated by a single click within their respective social medium. Though there were common uses and gratifications of PDAs across social media, most meanings of PDAs were idiosyncratic to each social medium (e.g., Facebook Likes were used and interpreted differently than Twitter Favorites), often guided by social norms, and frequently were a stronger message about the PDA sender rather than the social media content. Though just a click, PDAs may have many meanings, reflecting the diversity of social media platforms; and may be entire complex messages providing intrapersonal and interpersonal meaning to social media users, depending on system, social, and structural factors. Just as a thumbs-up can seek to hitch a ride or indicate approval, so too can it convey different meaning online depending on the social context in which it is raised.

Notes

1. We differentiate the PDAs of various social media platforms (e.g., Like, Favorite) and their corresponding practices from the colloquial terms (e.g., liking, favorite) by capitalizing the former. Terminology reported is consistent with the data collection date of October, 2014.
2. All participants have been given pseudonyms, consistent with their gender, to maintain anonymity.

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