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Second Screening as Convergence in Brazil and the United States

**Shannon C. McGregor, Rachel R. Mourão, Ivo Neto,
Joseph D. Straubhaar, and Alan Angeluci**

Second screening is widespread worldwide, particularly in younger populations. We analyze a survey of college students in Brazil and the United States to compare second screening frequency, types, platforms, and motivations between the two countries. Despite lower Internet penetration, Brazilians second screen significantly more than Americans, a result of the country's tradition of interacting with producers of television. In both countries, those who use the interactive affordances of social media are more likely to second screen. As such, we posit this unique audience-driven act works to bridge Web-connected devices and television to create a converged atmosphere.

On the night of the finale of Brazilian soap opera *Avenida Brasil*, tweets with the second-screen adopted hashtag #oioioi peaked at over 10,000 per hour during the broadcast. The popularity of second screening in the country has not gone unnoticed: in 2013, the Brazilian Institute of Public Opinion and Statistics (IBOPE) started collecting data about Twitter conversations during popular national TV shows (IBOPE, 2013). Similarly, young people's use of second screening, a hybrid and converged media process that combines television and a second Web-connected screen, is becoming widespread in the United States (Nielsen, 2015; Pew, 2012).

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Dramatic U.S. television events, like “The Rains of Castamere” episode of HBO’s *Game of Thrones* generated more than 10,000 posts using the hashtag #redwedding during the hour the episode first aired. But is there a relationship between country of origin and patterns of second screening? How does second screening relate to other interactive features of social media, such as retweeting, liking, and hashtagging?

In this study, we adopt a particular definition of second screening focusing on using a second screen for complimentary, or related, information. “Second screeners use a digital device (i.e., smart phone or laptop) while watching television to access the Internet and social network sites in order to obtain more information about or discuss the program they are watching,” (Gil de Zúñiga, Garcia-Perdomo, & McGregor, 2015, p. 1). Because it’s tied to immediacy, second screening has been widely used by audiences during breaking news, entertainment and sporting events, political debates, and campaigns (Giglietto & Selva, 2014; Nee, 2013; Pew, 2012; Wohn & Na, 2011). This form of virtual collocation may be used to get supplemental information about or to discuss the program. Furthermore, these activities may coincide to build a sense of community centered on a program (Papacharissi & De Oliveira, 2012). Survey research organizations have begun to quantify adoption of this new media practice among the U.S. public, but the results are descriptive at best. Very few, if any, studies have analyzed second screening in the context of emerging democracies. In addition, most academic studies have focused on the output of users’ participation during certain programs, without going further to explain the process or explore the antecedents (Giglietto & Selva, 2014; Wohn & Na, 2011).

In order to understand the act more, we identify two types of second screening: interpersonal and extrapersonal. *Interpersonal* second screening involves talking about a TV show or film with those you have a direct connection with by utilizing a platform that is not open to the general public (like text or SMS). On the other hand, *extrapersonal* second screening utilizes social media, Web sites, and forums, where information can be shared with and received from those in one’s close network.

Based on surveys of youth in the United States and Brazil, this study sheds light on the future of second screening by comparing its use between two large American countries. We find that despite lower Internet penetration, Brazilians second screen significantly more than Americans, especially interpersonally. Interactive affordances of social media are inherently linked to second screening, further confirming the social nature of the activity. Audiences use second screening to collocate in a sort of virtual living room, where they create a sense of shared meaning around a program or event. The unique act of second screening bridges Web-connected devices and activities to television through the creation of a converged media atmosphere.

Convergence: The New Media Environment

Following the digitalization of media, crystallized by the emergence and evolution of the Internet, researchers view convergence as a new vein of communication research. Yet scholars have not come to a consensus on the evolving media ecosystem.

Some researchers view convergence from a more technological context, while others prefer to highlight the role that audiences play in this new environment. Questions regarding second screening and the related opportunities for content distribution and consumption make it difficult to settle on a harmonious definition for this new media atmosphere (Chyi & Chadha, 2012; Erdal, 2011; Jenkins, 2006; Quinn, 2006).

This complexity of convergence justifies the semantic chaos surrounding the concept. In *Transmedia Storytelling* (TS), Scolari (2009) uses the title term to explain a strategy that takes advantages of possibilities emerging from various platforms, which allow consumption of diverse content. In a converged media environment, marked by the influence of various elements of technological and social order, a multimodal narrative is developed and expressed in different media and languages. As Scolari explains:

TS is a particular narrative structure that expands through both different languages (verbal, iconic, etc.) and media (cinema, comics, television, video games, etc.). TS is not just an adaptation from one media to another. Different media and languages participate and contribute to the construction of the transmedia narrative world. (2009, p. 587)

For Gosciola (2011) audiovisual aspects are increasingly important in *transmedia* narratives. In the new media environment, where the Web serves as the primary medium, fewer projects use exclusively textual narratives. The pervasiveness of second screening can be seen as evidence that audiences prefer multimodal and multiplatform media experiences. As Webster and Ksiazek (2012) describe, second screening audiences receive content across different platforms. This type of consumption is not only dispersed in the medium itself, but between various media.

Media convergence is more than just a technological shift (Jenkins, 2006). When approaching the concept of convergence, we must be fully aware of important changes not only in existing technologies, but also in industries, markets, genres, and audiences. As Jenkins (2006) points out, cooperation between media industries and individualized audiences also contributes to the converged media era. People often access information from a variety of platforms; an international survey found that almost 40 percent of online news consumers use at least one or more device to get information (RISJ, 2014).

The adoption of shared digital technologies affects both content and delivery, thereby necessitating media and broadcasting organizations to adopt new operating strategies. Thus, it's essential to view convergence from a production standpoint. For example, Erdal (2011) argues that convergence can be visualized as containing a *vertical* and a *horizontal axis*. The *vertical axis* represents the production process from start to end and is concerned with the work developed by producers. Media production must be prepared at a multimedia level as content flow is no longer platform-dependent. On the *horizontal axis* (Erdal, 2011), the different media platforms where a story can be realized, such as print, radio, Web, and mobile, can be referred to as the cross-media axis. In that sense, Canavilhas (2012) argues "we can only talk about

convergence when the final product is the result of content with unique features" (p. 9). As television continues to embrace second screeners, creating hashtag campaigns for programs and scrolling tweets across the bottom of broadcasts, convergence takes on a new form.

Typically, convergence is operationalized as something done *by* the media industry. While this history is worth exploring to help us better understand second screening as an aspect of convergence, we posit that consumers' role in second screening means convergence is performed by the industry, *but also* by audiences. In this article, we understand that convergence in its essence represents integration of various content not only by producers but also by consumers of media. Second screening is, therefore, an extension of a converged media environment, where content is delivered across multiple platforms and/or made up of a variety of media actors, including consumers. In second screening, the audience harnesses productive power and becomes integral in creating the next wave of converged media.

Second Screening

As the definition and features of convergence continue to develop and shift, second screening represents one of the newest arenas of media convergence. Second screening involves using a digital device (i.e., smartphone or laptop) while watching television to access the Internet and social media sites in order to obtain more information about or discuss the program being watched. Second screeners can build a sense of community centered on the event or program by utilizing common hashtags or keywords to connect with people beyond their physical area and networks (Papacharissi & De Oliveira, 2012).

Users who second screen may seek additional information, and some may look to interact with others and discuss the event, reaching out to those sharing a virtual living room (Gil de Zúñiga, Garcia-Perdomo, & McGregor, 2015). This computer-mediated virtual collocation merges traditional media with online networks, and broadcast companies have displayed an eagerness to capture the new markets that this bridging activity opens. Second screening, in combining "analog" media and digital media, represents another example of a hybrid media system (Chadwick, 2013).

By its very nature, second screening is a process that involves concurrent use of several media types and devices. Because of this tie to immediacy, audiences use it widely during television events that draw large turnouts like breaking news or premieres of widely followed series (Giglietto & Selva, 2014; Pew, 2012; Vaccari, Chadwick, & O'Loughlin, 2015; Wohn & Na, 2011). Of the few academic studies to take on second screening, the main focus rests on the content of posts, with many being operationalized as a measure of public opinion about the event or program to which they are tied (Anstead & O'Loughlin, 2011).

Nielsen (2015) reported on the rise of second screening for global audiences. Their report shows that more than 62 percent of people in North America used the Internet while watching TV. In Latin America, more than 60 percent of consumers reported

interacting with social media while watching TV. Fifty-one percent of Latin Americans report watching television shows so that they can join conversations on social media, as compared to 39 percent in North America. Similarly, 41 percent of Latin Americans report watching live TV more if a social media component exists, while 33 percent of North Americans report the same. These findings from Nielsen suggest that second screening may drive further TV consumption—and more so in Latin America than in the United States.

Studies have found that people report using second screening to both get information about and discuss a given program, news or otherwise (Gil de Zúñiga et al., 2015; Nielsen, 2014). Given the variety of uses people report for second screening, our interest here is in examining the uses that youth find for second screening in two countries: the United States and Brazil. This study identifies both informational and consumer motivations for second screening.

Information seeking may be an obvious motivation for second screening—the act of seeking supplemental information about TV content demonstrates a desire for knowledge beyond what TV offers. Previous studies analyzing tweets sent out during TV programs found that people used Twitter to post and share information related to the event or program (Giglietto & Selva, 2014; Wohn & Na, 2011). Wohn and Na (2011) also found that users of Twitter who second screened during both entertainment and news programs engaged with the various interactive affordances of Twitter, like @replies, retweets, and #hashtags. Second screeners used these tools to interact with one another and participate in a socially networked discussion around a program. In fact, scholars found tweets expressing opinions and interpreting events to be prevalent in second screening situations (Giglietto & Selva, 2014; Wohn & Na, 2011).

Most academic studies on second screening have examined the output of users' participation during certain programming without going further to understand the process and its implications for media processes. Although some international survey research organizations have begun to track the upsurge in second screening and provide descriptive data of this distinct activity, we know little about what leads people to second screen. Surveys of public opinion, like the cross-national ones that comprise this study's data, allow us to compare aspects of second screening across two countries with different media histories, systems, and cultures.

The Media Industry in the United States and Brazil

Television and Internet industries have evolved in substantially different ways in the United States and Brazil, leading to quite different kinds of second screen and connected viewing interactions. Those differences include the evolution of diverse television structures; the evolution of fairly distinctive sites and modes where people tend to talk about TV; the ability of people to pay for advanced services like pay-TV or home broadband; and the costs and benefits of using mobile technology for second-screen activity.

In the United States, the major radio networks of the 1930s–40s produced analogous television networks that dominated the market until the 1970s. These gradually lost their exclusive hold on the television audience as HBO, superstations TBS and CNN, etc. drew most viewers away into the segmented or multichannel universe of cable and satellite TV (Head, Sterling, & Schofield, 1994). That universe has fragmented even further in the digital television age, as many viewers, particularly younger ones, are drawn away to Internet-based television (Lotz, 2007). This has generated split attention to television channels by potential second-screen viewers, who are more likely to use a general social network, like Twitter or Facebook, to discuss the range of their television interests, rather than gravitate to the site of a network or even an individual app to discuss what they think about the show.

In contrast, one network, TV Globo, rose to dominance in Brazil in the late 1960s and early 1970s by gaining initial resources through a joint venture with Time Life, Inc., which enabled it to attract top programming talent and recreate popular versions of key genres like the telenovela (Sinclair & Straubhaar, 2013). One aspect of this development had particularly strong implications for second screen viewing: the medium became very writer-driven early in the development of the prime-time telenovela. The main authors (equivalent to U.S. showrunners) of Globo's prime-time soap operas became household names, which led people to express interest in what they had to say, mainly on blogs, starting six to seven years ago.

Funding for competitive television programming is relatively low and highly fragmented in Brazil. As a result, a much greater share of the audience's attention has been focused on its top prime-time programming, which has led many people to interact on the network's Websites, rather than independent social media sites like Twitter (Lopes & Mungioni, 2014). As a consequence, the use of second screening is currently defined by a dominance of TV Globo, to the point where people often go directly to its sites or to the personal blogs of the main authors of its prime-time telenovelas to discuss the television shows in which they are interested.

Conversely, in the United States, most television households could afford to move to cable, satellite, and other multichannel viewing options as they became available (Baldwin & McEvoy, 1988). Similarly, U.S. audiences have moved into Internet-based television options rapidly (Lotz, 2007). In Brazil, the number of households viewing multichannel television, which is known as pay-TV, stagnated around five percent from the 1970s until the 1990s (Reis, 1999), slowly increasing in the late 1990s and early 2000s as economic conditions, particularly inflation, stabilized and improved. Pay-TV penetration seems to have increased more rapidly since the mid-2000s, arriving at the point where 44 percent of Brazil now watches at least some pay-TV (Lopes & Mungioni, 2014), as economic growth and economic aid to the poor have rapidly increased the size of the middle class (Ferreira et al., 2012). In contrast, about 74 percent of Americans have cable, satellite, or pay-TV. That had been fairly stable for years, but is slowly declining as younger Americans simply don't sign up for cable or "cut the cord"

in favor of streaming services (Kang, 2014). Conversely, in 2015, 95 percent of Brazilians report having watched TV in the last year, with 73 percent doing it on a daily basis. In 2015, Brazilians spent an average of four and a half hours in front of the television every day, an increase from the numbers of 2014. All in all, broadcast television remains the dominant medium in the country, despite Internet penetration (SECOM, 2015).

In past years, a big problem for Internet-based television and for second screen use in Brazil has been the initially low but now rapidly increasing rates of Internet penetration. In 2015, about half of the Brazilian population used the Internet, and 66 percent of Internet users accessed the Web via their mobile phone (SECOM, 2015). However, illegal downloading, streaming services, and other options are increasing Internet-based television in Brazil, at least among those with home broadband or mobile broadband. In the United States, Internet penetration is roughly 87 percent (Worldometer, 2014).

Social media penetration is also rapidly increasing in Brazil, which has broadened the potential for second screen use. In 2013, Facebook had a total of 76 million users, approximately 40 percent of Brazilians, an increase of over 100 percent compared to 2012. Twitter is notably less popular than Facebook with about 46 million active users, and a lower level of increase in users: 30 percent compared to 2012. In the beginning of 2015, 92 percent of Brazilian Internet users were connected to a social network, primarily Facebook (83%) and WhatsApp (58%). Twitter was used by less than 5 percent of online respondents (SECOM, 2015). A more recent study revealed that up to 93 percent of the Internet users in the country are on WhatsApp (IBOPE Inteligencia, 2015). The same report shows an increase on the use of Twitter (14%). Currently, Brazilians spend more time on social media than all other Latin American countries combined, and they are responsible for 10 percent of the time the world spends on social media, second only to the United States. In the United States, roughly the same amount of online users reported using Facebook (72%), but only 29 percent reported using an instant messaging app, including WhatsApp. In the United States, 23 percent of online adults use Twitter, roughly five times more than the Brazilian average (Pew, 2014).

Although there has been a tendency for Brazilian fans to interact with authors' blogs and official show Web sites, second screen use is increasing the most on Facebook and Twitter. Lopes and Mungioli (2014) note that "during the last broadcasting week of telenovela *Amor à vida*, the hashtag #amoravida had nearly 151,000 mentions on Twitter, and the Internet campaign #BeijaFelixeNiko, in favor of a gay kiss between characters Félix and Niko, amassed 57,000 hits on Twitter by January 31, 2014—the telenovela's last broadcasting day" (p. 145). However, Facebook overshadowed the Twitter commentary: "...by the end of 2013, over two and a half million fans of the telenovela daily Félix posts on their Facebook news feeds" (Lopes & Mungioli, 2014).

Research Questions and Hypotheses

This study analyzes survey data from youth in Brazil and the United States to further understand what activities or attributes lead young people to participate in second screening. Overall, we are guided by the following research questions:

- RQ₁: How do U.S. and Brazilian youth differ in ...
- the frequency with which they second screen?
 - the platforms they use to second screen?
 - the types of second screening they do?
 - the motivations for second screening?

In this article, we argue that the rampant increase in the use of social media by Brazilians, combined with the country's historical tradition of interacting with soap opera writers and the ever-increasing importance of broadcast television consumption, has created an ideal environment for the increase of second screening. Conversely, the diffuse nature of U.S. television consumption, fostered by the proliferation of cable channels and streaming services, could limit the spread of second screening among North American youth. As such, we test the following hypotheses:

H₁: Brazilian youth are more likely to second screen than U.S. youth

H₂: Brazilian youth are more likely to second screen on WhatsApp than U.S. youth

H₃: U.S. youth are more likely to second screen on Twitter than Brazilian youth

Finally, in order to assess whether second screening is truly part of a converged media environment, we examine the association between second screening and the interactive affordances of social media:

RQ₂: How do interactive affordances of Twitter relate to second screening in a) Brazil, and b) the United States?

RQ₃: How do Facebook activities relate to second screening in a) Brazil, and b) the United States?

Methods

This study uses data from two online surveys conducted with college students from the United States and Brazil between December of 2013 and May of 2014. The questionnaires were prepared in English, translated to Portuguese, and pre-tested in December

2013 in Bauru, Brazil. Based on that pre-test, a number of changes were made in the translation, as well as some questions clarified in both English and Portuguese.

The survey in English was distributed to students from undergraduate courses in the Radio, Television and Film Department at the University of Texas–Austin. The survey in Portuguese was also applied with undergraduate students from three different institutions in São Paulo State: Universidade de São Paulo (USP), in the city of São Paulo; Universidade Municipal de São Caetano do Sul (USCS) in the city of São Caetano do Sul, located in the “ABC” metropolitan region in Greater São Paulo; and at Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP) in the town of Bauru, in the countryside of the State of São Paulo, 4 hours from the capital. The combination of the three schools represents the upper middle class, middle class, and emerging regional middle class of Brazil’s largest and most economically dynamic area. The total achieved sample had 5 percent of its respondents from USP, 19 percent from USCS and 76 percent from UNESP.

In total, 633 participants responded, and 199 cases were deleted for incomplete or invalid data on the main dependent variable. The response rate for the U.S. survey was 96 percent¹; in the Brazilian survey, it was 51 percent. The total number of respondents was 214 American students and 397 Brazilian students.

Second-Screening Variables

Second Screening Frequency. Second screening frequency was measured by a 5-point Likert-type scale, ranging from 1 = *Never* and 5 = *Almost Always*. For each platform, respondents were asked “when viewing a film or television program, do you use any of the following devices or services to communicate with others ABOUT the program you’re watching?”

“Text messaging” (range = 1 to 5, $M = 2.91$, $SD = 1.33$)

“Email” (range = 1 to 5, $M = 1.67$, $SD = 1.06$)

“Facebook” (range = 1 to 5, $M = 2.72$, $SD = 1.37$)

“Twitter” (range = 1 to 5, $M = 2.05$, $SD = 1.38$)

“Instant messenger” (such as WhatsApp) (range = 1 to 5, $M = 2.29$, $SD = 1.52$)

“Personal website/blog” (range = 1 to 5, $M = 1.47$, $SD = 0.94$)

“Fan forums or other online forum” (range = 1 to 5, $M = 1.43$, $SD = 0.96$)

Second Screening Types. Depending on the device used, second screening was divided into interpersonal and extrapersonal. *Interpersonal* second screening involves talking about a TV show or film with another person who is already part of the respondent’s network in a platform that is not accessible to the general public, such as through text messaging and email. Instant messaging, such as WhatsApp, was also included in this category. An index with the items measuring second screening via text, email, and instant messaging apps was created (3 items, $\alpha = .67$, range = 1 to 5, $M = 2.29$, $SD = 0.95$). Conversely, *extrapersonal* second screening refers to the activity when performed in social media, Web sites, and

forums, where respondents can share and receive information about a program with people they don't necessarily know (4 items, $\alpha = .71$, range = 1 to 5, $M = 1.91$, $SD = 0.84$). Although social media privacy settings can restrict access to certain users' content, information posted on Facebook, Twitter, blogs, and forums has the potential to reach many more people than information shared through interpersonal communication platforms.

Second Screening Motivation. To measure second screening motivation, respondents were asked, "As you watch a movie or TV show, do you use a mobile device to do any of the following?" (1 to 5 scale, 1 = *Never*, 5 = *Almost always*)

"... get more information about the film or TV program" (range = 1 to 5, $M = 3.30$, $SD = 1.19$)

"... get more about the stars of the movie or TV show" (range = 1 to 5, $M = 3.21$, $SD = 1.19$)

"... get more information about something advertised during the movie or TV program" (range = 1 to 5, $M = 2.51$, $SD = 1.20$)

"... buy something that was advertised in the movie or TV show" (range = 1 to 5, $M = 1.79$, $SD = 1.00$)

Other Interactive Activities

Previous findings suggest that the interactive affordances of social media, such as retweeting and mentioning other users, are associated with each other (Lawrence, Molyneux, Coddington, & Holton, 2014). Based on such findings, we test whether second screening is correlated with other interactive activities on each platform.

Facebook. Respondents were asked about the frequency with which they do other interactive activities on Facebook using a 7-point scale where 1 = "never," 2 = "once every few months," 3 = "a few times a month," 4 = "a few times a week," 5 = "about once a day," 6 = "a few times a day," 7 = "a few times an hour."

"... update your status" (range = 1 to 7, $M = 3.46$, $SD = 1.49$)

"... share web links, news stories, blog posts, and notes" (range = 1 to 7, $M = 3.86$, $SD = 1.49$)

"... 'like' or comment on other Facebook page, such as people's status, wall, links, pages of groups, events, organizations, or companies" (2 items, $\alpha = 0.81$, range = 1 to 7, $M = 4.93$, $SD = 1.40$)

"... click the 'Like' or 'Share' button on a non-Facebook website to share it on Facebook" (range = 1 to 7, $M = 3.32$, $SD = 1.72$)

"... play social game" (e.g. Farmville, Mafia Wars, etc.) (range = 1 to 7, $M = 2.36$, $SD = 1.62$)

"... share your location using Facebook places" (range = 1 to 7, $M = 2.15$, $SD = 1.29$)

Twitter. On Twitter, respondents were asked about the frequency with which they retweet and follow a hashtag using a 7-point scale where 1 = *never* and 7 = *a few times an hour*.

“... retweet” (range = 1 to 7, $M = 3.59$, $SD = 2.02$)

“... follow a hashtag” (i.e., follow an interest, topic, or live event through its associated hashtag) (range = 1 to 7, $M = 2.78$, $SD = 1.69$)

Demographics

This study uses three key demographic variables: age ($M = 20.86$, $SD = 4.42$), gender (female = 59.4%), and race (white = 46.5%). In addition, *own perceived social class* was included as a proxy for socio-economic status.

Own Perceived Social Class. This item was measured with a single question that inquired: “would you say that your household growing up was. . . 1 = “lower class,” 2 = “lower middle class,” 3 = “middle class,” 4 = “upper middle class,” 5 = “upper class” (range = 1 to 5, $M = 3.03$, $SD = 0.88$).

Statistical Analysis

In order to answer the first set of research questions (RQ_{1a-d}) and hypotheses (H₁₋₃), this study employed a series of *t*-tests to compare the frequency at which respondents second screened, as well as the characteristics of second screening in the United States and Brazil. Then, zero-order Pearson’s correlations were performed to ascertain the ways in which all variables of interest related to each other on both Facebook and Twitter. These correlations allow us to examine the relationships between interactive affordances of Twitter and Facebook with second screening (RQ₂₋₃).

Results

RQ_{1a} aims to identify the differences of second screening frequency by devices between youth in Brazil and the United States. As Table 1 illustrates, a statistically significant difference was found between Brazilians ($M = 2.19$, $SD = 0.81$) and Americans ($M = 2.01$, $SD = 0.81$) when it comes to total frequency of second screening, $t(428) = -2.37$, $p < .05$. As suspected, Brazilians are significantly more likely to second screen; therefore, H₁ is supported.

RQ_{1b} explored the differences between platform choice among Brazilians and Americans. Brazilians also had a significantly higher frequency of second-screening on Facebook ($M = 3.07$, $SD = 1.35$) than Americans ($M = 2.35$, $SD = 1.28$), $t(428) = -5.85$, $p < .001$. Similarly, second screening using an instant messenger, such as WhatsApp, was significantly more frequent in Brazil ($M = 3.07$, $SD = 1.56$) than in

Table 1
Second-Screening Platforms, Types and Purposes by Country

	M/SD		t(df)	Cohen's d ¹
	Brazil	United States		
Second-Screening Devices				
Text (SMS)	2.54/1.29	3.28/1.27	5.98 (428)***	.58
Email	1.58/.93	1.75/1.18	1.65 (428)	.16
Facebook	3.09/1.35	2.35/1.28	-5.85 (428)***	.56
Twitter	1.98/1.40	2.13/1.36	1.09 (428)	.10
Whatsapp	3.07/1.56	1.50/.99	-12.47 (428)***	1.20
Blog	1.48/.93	1.45/.96	-.26 (428)	.03
Forum	1.41/.91	1.45/1	.45 (428)	.04
Total	2.19/.81	2.01/.81	-2.37 (428)*	.22
Second-Screening Type				
Interpersonal	2.39/.99	2.17/.89	-2.47 (428)*	.23
Extrapersonal	1.99/.83	1.84/.86	-1.78 (428)	.17
Second-Screening Purpose				
Information about the Program	3.30/1.29	3.31/1.09	.08 (426)	.01
Information about the Stars	3.12/1.29	3.29/1.07	1.55 (426)	.14
Information about Advertising	2.49/1.27	2.54/1.13	.48 (426)	.04
Purchase Something that was Advertised	1.61/.89	1.96/1.07	3.62 (426)***	.36

Note. (N = 430), *p < .05 **p < .01 ***p < .001

¹According to Cohen (1977), .2 is a small effect, .5 is a moderate effect and .8 is a large effect size.

the United States ($M = 1.50$, $SD = 0.99$), $t(428) = -12.47$, $p < .001$ (H_2 is supported). On the other hand, Americans second screen using text messages ($M = 3.28$, $SD = 1.27$) more than their Brazilian counterparts ($M = 2.54$, $SD = 1.29$), $t(428) = 5.98$, $p < .001$. Americans did second screen more on Twitter than Brazilians, but the difference was not statistically significant (H_3 is rejected). Effects size using Cohen's d revealed that the effects were moderate for Twitter and Facebook and very strong for WhatsApp.

RQ_{1c} examined the differences between Brazilians and Americans when it comes to *interpersonal* and *extrapersonal* second screening types. There is a statistically significant difference between the two countries when it comes to *interpersonal* second screening, with Brazilians ($M = 2.39$, $SD = 0.99$) doing it more frequently than Americans ($M = 2.17$, $SD = 0.89$), $t(428) = -2.47$, $p < .05$ (Cohen's d = .23). No statistically significant difference between the two countries was found regarding

extrapersonal second screening, indicating that this type of second screening is more evenly dispersed.

RQ_{1d} refers to the motivations for second screening. Those in the United States ($M = 1.96$, $SD = 1.07$) were found to purchase something that was advertised more than Brazilians ($M = 1.61$, $SD = 0.89$) and the difference was statistically significant, $t(426) = 3.62$, $p < .05$. The two countries had no significant differences when it comes to second screening to seek more information about the television program, information about the stars, or information about a product that was advertised.

Results show that there are some significant correlations between demographics, interactive activities, and second screening on Twitter (see Table 2). The correlations indicate that those who are younger ($r = -.226$, $p < .001$) and American ($r = -.312$, $p < .001$) are significantly more likely to second screen on Twitter. Our results for RQ₂ (How do interactive affordances of Twitter relate to second screening?) show that interactive activities, such as retweeting ($r = .749$, $p < .001$) and following a hashtag ($r = .765$, $p < .001$), are also significantly correlated to second screening on Twitter.

In terms of using Facebook (RQ₃—How do Facebook activities relate to second screening?), results show correlations between demographics, interactive activities, and second screening on the platform (see Table 3). Females ($r = .15$, $p < .01$), those of lower classes ($r = -.10$, $p < .05$), and Brazilians ($r = .27$, $p < .001$) are more likely to second screen on Facebook. All interactive activities were significantly associated with second screening, including updating one's status ($r = .33$, $p < .001$), sharing links ($r = .33$, $p < .001$), liking Facebook pages ($r = .30$, $p < .001$), liking other Web sites ($r = .35$, $p < .001$), playing games ($r = .18$, $p < .001$), and sharing one's location ($r = .15$, $p < .01$).

Discussion

This study adds to convergence research by analyzing and comparing youth second-screening behaviors in two countries. Through this multi-faceted view, we are able to pinpoint key differences between Brazilian and American use of second screening, as well as find commonality in certain online behaviors linked to the activity. Our findings also suggest that second screening is an audience-driven convergence activity in which the public, social media, and television blend into one media atmosphere. While second screeners are still physically present in a traditional sense, yielding power to program providers, more and more second screening gives the audience some agency in the viewing experience.

Results reveal that, despite lower Internet penetration, Brazilian youth second screen more than Americans. We offer two explanations for this finding: the history of interaction with television in Brazil and the type of second screening favored by Brazilians. First, there is a rich tradition of interaction between telenovelas and audiences in Brazil. Beginning in the late 2000s, the popularity of telenovela authors led them to blogging, which in turn laid the foundation for connective viewing interactions (Vassallo de Lopes, 2013). Audiences turned to the blogs for more

Table 2
Correlations Between Demographics, Interactive Uses, and Second Screening on Twitter

	1	2	3	4	5	6	7	8
1. Retweet	1							
2. Hashtag	.690***	1						
3. Gender (female)	0.035	0.01	1					
4. Age	-.201***	-.195***	-0.176***	1				
5. Race (white)	-0.047	-0.074	0.052	0.027	1			
6. Class	-0.043	-0.028	0.003	-0.042	.142**	1		
7. Country (Brazil)	-.298***	-.327***	0.083	.175***	-.162***	-.213***	1	
8. Second Screening	.749***	.765***	0.032	-.226***	-0.04	-0.057	-.312***	1

Note. *p<.05 **p<.01 ***p<.001

Table 3
Correlations Between Demographics, Interactive Uses, and Second Screening on Facebook

	1	2	3	4	5	6	7	8	9	10	11	12
1. Update Status	1											
2. Share Links	.65***	1										
3. Like a Facebook Page	.36***	.50***	1									
4. Like Other Websites	.42***	.52***	.40***	1								
5. Play a Game	.29***	.25***	.18***	.25***	1							
6. Share Location	.42***	.27***	.14**	.29***	.44***	1						
7. Gender (female)	-0.08	-0.01	.11*	0.08	-0.00	0.03	1					
8. Age	0.03	0.02	-0.09	0.03	-0.02	-0.08	-.18***	1				
9. Race (white)	-0.05	-0.04	0.02	-0.03	-0.02	-0.06	0.05	0.03	1			
10. Class	-.19***	-.15**	-0.07	-.16**	-0.09	0.01	0.00	-0.04	.14**	1		
11. Country (Brazil)	.11*	.20***	.21***	.19***	-0.07	-.30***	0.08	.18***	-.16***	-.21***	1	
12. Second Screening	.33***	.33***	.30***	.35***	.18***	.15**	.15**	-0.07	0.06	-.10*	.27***	1

Note. *p < .05 **p < .01 ***p < .001

information and to discuss the program, and this early interactivity was driven by the same motivations that lead to second screening. In contrast to U.S. networks, Brazilian networks like TV Globo worked early on to encourage audience interaction, and the significant levels of Brazilians engaging in second screening may stem from this budding form of the activity. In fact, while we find that young Brazilians do more second screening across social media, our instrument didn't capture blog-based second screening, which accounts for another large share of the Brazilian second screening audience (Lopes & Munglioli, 2014).

Another explanation for the variance in rates of youth second screening may come from the type of second screening Brazilians engage in more often. To further understand the nuances of this virtual collocation, this study identifies two types of second screening. *Interpersonal* second screening involves using private technologies like messaging apps, text, or email to second screen with people you already know while *extrapersonal* second screening refers to using social media sites like Facebook or Twitter, where one is likely to encounter individuals outside one's personal network. Our findings suggest that Brazilians engage in significantly more *interpersonal* second screening than those in the United States. This finding may be viewed both culturally and technologically. Possible cultural explanations include a likely higher overall interpersonal sociability among Brazilians, as reported by U.S. anthropologists (Kottak, 1994). Technologically, the country's lower rate of Internet penetration may mean more reliance on technologies like texting (IBOPE in Lopes & Munglioli, 2014; Passarelli & Angeluci, 2014). Similarly, costs are a consideration and apps like WhatsApp are particularly popular because of their low cost in Brazil (Bank, 2012; Muggah & Thompson, 2016). In either explanation, we find that second screening in Brazil may serve to further reinforce existing relationships through discussion of television programs. On the other hand, our findings here do not pinpoint what type of programs people are watching when they second screen. It's possible that the inclination towards interpersonal second screening shifts during breaking news or political events, when a wider discussion network might be preferable. We believe the interpersonal/extrapersonal typology better differentiates between uses of second screening, representing the open or closed nature of various second screen communication methods. This concept may be particularly useful to scholars who also attempt cross-national comparisons, as communication methods and social media tools vary across countries. Future studies could also use this typology to examine what types of programs prompt interpersonal or extrapersonal second screening.

Across both countries, we find that individuals who take advantage of the interactive affordances of social media are more likely to engage in second screening. As virtual collocation around television programs continues to evolve, we find evidence that it is another way to make use of social media interactivities like sharing, commenting, or using hashtags. One of the important implications of second screening is that it links activities within social media and the Web to an outside medium: the television. With the rise of Internet-based television and on-demand viewing, the television industry worldwide is struggling to adapt, particularly in places like Brazil,

where broadcast television remained dominant for longer than in the United States. Second screening may enhance the viability of television by tying it to the fastest growing communication channels—social media (Lopes & Mungiolli, 2014). Watching TV can be a primarily solitary activity, but second screening brings people into a super-sized virtual living room, where they converge to create a sense of shared meaning around a program or event. By demonstrating that second screening relates to other interactive affordances of social media, our study roots second screening as an interactive use of social media, which enhances television use to form a unique audience-driven, interactive and converged media environment.

While our findings reveal some differences across platform choice for second screeners in Brazil and the United States, perhaps the most puzzling case, in terms of research, is WhatsApp. Our results show that Brazilians use the instant-messaging app significantly more than Americans. Again, there is a potential technological explanation to this finding—while unlimited or cheap texting plans are widely available in the United States, Brazilian cell carriers charge steeper prices for SMS use (Bank, 2012). Yet, what do we make of WhatsApp? On the one hand, it's primarily used for conversations between people already in one's network – similar to texting. But on the other hand, it is social (the app pulls in one's Facebook friends and allows the creation of large groups) and Web-connected, yet there is no public feed and hence little chance of interacting with those outside one's network, much less the media. As former Brazilian communication minister Thomas Traumann said, "It's the greatest challenge [in this line of research] because it is a completely new thing. It's not like Facebook, or like Twitter. [The one who gets the message] does not know where that information is coming from: Where did it come from? Who sent first?" (SECOM, 2015). While we included its use as *interpersonal* second screening here, WhatsApp really falls into an ambiguous middle ground of social media communication in terms of typology because of its mixed affordances. Future studies examining this unique communication tool are warranted. Newer social apps, like Snapchat, also bear the potential to be used for second screening, and these developments are ripe for research. In the case of both Snapchat and Whatsapp, the communication content is not available for research. In these cases, the survey design used here may help scholars overcome the limitation posed by content analysis to assess how people use private messaging apps.

While this study reveals cross-cultural differences between how youth in the United States and Brazil second screen, because of our convenience sample, our findings are not widely generalizable. Future studies should assess cross-national comparisons of second screening with larger and more representative samples to further probe the findings we present here. Furthermore, the *interpersonal/extrapersonal* framework that we introduce avails a deeper and more nuanced understanding of second screening. Future research should further test these concepts with more generalizable samples, as well as under different circumstances like entertainment and politics.

Our findings suggest that second screening is related to other interactive activities within social media. We posit that second screening is an extension of interactivity and that this unique act works to bridge Web-connected devices and activities to

television to create a converged atmosphere. Unlike traditional convergence, this activity emerges from audiences, rather than from media producers. While television networks and social media companies have been quick to try to capitalize on and control the second screening experience, by its very nature, second screening remains under audience control.

Note

1. The high response rate was achieved by offering students extra credit for completing the survey.

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