The twitterization of journalism: User perceptions of news tweets

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Abstract

Using an experiment and probability sample of Chicago and Los Angeles adults ($N = 1211$), this study tested how tweet characteristics (tone, space) and participant age (younger, middle, older) affected attitudes about tweets from a local newspaper. Results indicate that non-opinionated tweets were perceived as more useful and credible than opinionated tweets, and local tweets resulted in more engagement than national tweets. Younger participants (19–36 years) reported more positive affect,

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usefulness, engagement, and credibility related to tweets than did middle/older age groups. Younger participants were generally more negative about opinionated *national* tweets and preferred opinionated *local* tweets compared with middle/older groups.

Keywords
Journalism, media effects, news, social media, Twitter

Twitter is a social networking, micro-blogging platform that allows users to create a public or private profile account, to post (tweet) short messages (tweets), to view the tweets of other users, to repost tweets of other users (retweet), and to follow profile accounts of other users. Twitter has been quickly incorporated into newsrooms of all sizes (Lysak et al., 2012; Revers, 2014), yet the impact of this new technology on journalism is evolving and is not yet well understood (Hermida, 2010). Even less well understood are the effects of news tweets (i.e. tweets from journalists about news) on users. This study is a first step in addressing this gap in research, as we examine how different aspects of news tweets (tweet tone, tweet space) that are attributed to professional journalists working for traditional news organizations influence user liking, trust, and engagement with news tweets, and how those attitudes differ based on user age group.

Twitter and journalism

Journalists from both large and small news organizations in the United States have quickly adopted Twitter since it was created in 2006 (Lysak et al., 2012; Revers, 2014). Twitter is also used by journalists globally. In a 2013 survey of journalists in 14 countries, 59 percent of the journalists surveyed reported using Twitter (Stadd, 2013). Moreover, Twitter serves as a popular news source for its users as over half of those using Twitter report they get some news on the platform (Holcomb et al., 2013).

Noting the widespread adoption of Twitter by journalists, Coddington et al. (2014) called Twitter 'the central circulatory system of information among reporters' (p. 394). Twitter is used by journalists to generate story ideas, identify sources or gain information for news stories, engage audiences or gain audience feedback, disseminate news and information, offer one's own views of an event or issue, curate content, and promote one's own or others' work (Bruns and Burgess, 2012; Cozma and Chen, 2013; Farhi, 2009; Hayes et al., 2007; Hermida, 2012; Holcomb et al., 2011; Kim et al., 2015; Lysak et al., 2012; Molyneux, 2015; Swasy, 2016; Yongwhan et al., 2016). Many of these journalistic uses of Twitter align with traditional journalism norms. At the same time, some norms are apparently being challenged as journalists incorporate Twitter into their work (Barnard, 2016; Lasorsa et al., 2012). One norm that may be challenged when journalists tweet the news is the US journalistic value of objectivity (Molyneux, 2015).

Twitter and journalistic objectivity

While challenged by some journalism academics and practitioners (e.g. Muñoz-Torres, 2012; Rosen, 2010), 'objectivity' remains a key professional norm for many US

journalists working for traditional media (newspapers, radio, television; Schudson and Anderson, 2008). The claims embedded in the ideology of journalistic objectivity are that journalists 'are impartial, neutral, objective, fair and (thus) credible' (Deuze, 2005: 447). News audiences report an overall preference for news that is accurate and unbiased (Heider et al., 2005), though recent research has found that youth perceive objective news to be less useful than news that utilizes opinion or sarcasm to identify blame or create context (Marchi, 2012).

In the modern news environment, objective news can be most directly contrasted with 'opinionated news', which is news coverage that is combined with 'explicitly expressed opinions' (Boukes et al., 2014: 355). Examples of opinionated news include television news programs hosted by some anchors (e.g. Sean Hannity, Rachel Maddow) on US cable news channels such as Fox News and MSNBC (Feldman, 2011; Stroud, 2010). Opinion is purposefully included in opinionated news to differentiate the content from other news sources in order to reach audiences and increase revenue (Boukes et al., 2014; Gentzkow and Shapiro, 2010).

Beyond purposefully opinionated news, emerging online communication technologies such as social media may also provide opportunities for, or may even encourage, deviations from objectivity (Lasorsa et al., 2012; Molyneux, 2015; Singer, 2005). That is, journalists may be more likely to offer their own opinion about events or issues via social media platforms such as Twitter than they are when writing stories for more traditional forms of media. In the case of Twitter, this possible change in the journalistic norm of objectivity may be largely related to the structural traits of the Twitter platform, which requires individual updates (tweets) to be short and also displays those tweets in a constantly updating stream (the Twitter timeline). Because the Twitter timeline is always streaming new information, posts that are new (e.g. breaking news), humorous, outrageous, surprising, or shocking are often favored. The most attention-grabbing updates may be widely shared by users and thus become 'viral'.

Even when tweets are not particularly attention-grabbing, the social nature of the Twitter network creates a more personal online space (Chen, 2011; Marwick and boyd, 2011), and the general tone on Twitter is more conversational than that found in traditional news formats (Schmidt, 2013). As journalists increasingly use Twitter as part of their professional and personal lives, they may be incorporating these Twitter norms (e.g. favoring attention-getting posts, creating more personal content) into their operating journalistic norms. Describing this evolving process, Coddington et al. (2014) explain that on Twitter:

> Journalists are becoming more open to sharing personal information and opinions, using features of Twitter such as retweets to negotiate objectivity norms while dabbling in a blend of fact-centered reporting mixed with emotion, humor, 'lifecasting', and their own and others' opinions. (p. 395)

The move away from objectivity as journalists embrace social media is documented in content analyses of journalists' tweets that have found journalists often tweet their opinions (Coddington et al., 2014; Lasorsa et al., 2012; Lawrence et al., 2014; Vis, 2013).

For example, in a study of political reporters' use of Twitter, Revers (2014) found that journalists used wit, irony, and snark in their tweets and that many reporters used hashtags as mechanisms of commentary on Twitter. Also, in an analysis of eight popular journalists on Twitter, Molyneux (2015) found that these journalists' retweets often contained opinion and humor. Expressing personal opinions on social media is not without risk for journalists. Several journalists have even been fired, reprimanded, or 'reassigned' as a result of opinions they have tweeted or posted on social networks (Farhi, 2014). Overall then, Twitter may be a new type of news platform that includes an amalgam of fact, opinion, and emotion emanating from journalists and non-journalists (Hermida, 2013). The effect of the shift to more opinionated news on users has not yet been examined. In this study, we take an initial step in exploring the effect of these evolving norms on user perceptions of news tweets.

Twitter and news space

Another issue that may influence how users perceive news tweets concerns the 'space' of tweeted news. In content analyses of news, space is understood as the level at which news is depicted as occurring (Chyi and McCombs, 2004; Houston et al., 2012). These depictions may have implications for audience understanding and attributions. For example, news that focuses on an individual actor may result in consumers attributing the issues and events reported in a news story to individual actions and decisions, and thus be applicable only to those individuals involved (Iyengar, 1991). Conversely, news that focuses on a national level may be interpreted as being relevant to all citizens in a country. When considering the production of news and the work of journalists, a primary space distinction deserving exploration is between local and national news. News sources can be differentiated as being primarily national or local, and the news content produced by journalists can also primarily address national or local issues.

While national news sources typically have larger circulations and audiences and are often held in particular esteem (Friel and Falk, 2004), one of the primary beliefs in US journalism is 'that newspapers are most true, pure, real, and authentic when they honor their responsibility to "the local"' (Pauly and Eckert, 2002: 310). Newspapers have historically functioned to 'create and sustain Americans' sense of local community' (Pauly and Eckert, 2002: 313) and local media have historically functioned as local 'boosters' that promote various aspects of a town or city in order to gain attention and thus strengthen the local economy (Schudson, 2001). Local issues are also of particular interest to news audiences. In a study of attention to news issues between 1989 and 2002, many of the most popular news issues were local, including people and events in the local community, crime, and local government (Bennett et al., 2004). Local news organizations are also trusted more by individuals than are national news organizations (Pew Research Center, 2011). In terms of media effects, because local events and issues can affect the local media agenda, agenda-setting effects may be different at the local level when an issue is covered by both local and national news (Hester and Gibson, 2007). Therefore, the 'local' is often important in the traditional media landscape.

Social networking technologies such as Twitter may alter the dynamics of space and place, in that these technologies allow for the construction of communities that are based

less on geography and more on shared interests. Research supports the notion that technology may displace the importance of location in online social connections, as geographic proximity was found not to be a major factor in determining who individuals communicate with on Twitter (Leetaru et al., 2013). Also, when tweeting, individuals may consider multiple audiences (friends, family, colleagues, people not known in real life, those located nearby, those far away, etc.), a phenomenon that Marwick and boyd (2011) label 'context collapse'. At the same time, amid this mixing of spaces and places on social media, the *personal* nature of the Twitter network might create a situation in which local news and local journalists are particularly important. In addition, as local newspapers cease to operate or reduce the size of their newsrooms, it may be that online journalism functions as the main source for local news (Semuels, 2014), thus raising the stakes for local news tweets. Moreover, the online space is increasingly becoming the location for *hyperlocal* news (Metzgar et al., 2011), which is news about the smallest and closest geographic space. Overall then, in spite of the potential for the online environment to disrupt space, we propose that in routine news situations, local news may be of particular interest in the social media (and particularly the Twitter) environment.

The current study

The literature on Twitter is rapidly expanding. In addition to the scholarship described above, recent research in this area has examined topics such as Twitter's content (e.g. Hawthorne et al., 2013; Humphreys et al., 2013), the structure of Twitter networks (e.g. Himelboim et al., 2012; Wang et al., 2013; Yang et al., 2017), and the effects of tweeting about newsworthy events (e.g. McKinney et al., 2014). However, research has yet to examine the effects of news tweets on users. We address this gap using an experiment to examine perceptions of news tweets among adults in two US cities: Chicago, IL and Los Angeles, CA. We examine how perceptions of new tweets differ based upon whether the tweets are opinionated or non-opinionated in tone and whether the tweets focus on local or national issues. We selected adults from Chicago, IL and Los Angeles, CA for this study because we wanted to conduct a naturalistic experiment that allowed participants to react to stimuli (news tweets) attributed to a journalist from a well-known local newspaper. We selected local sources for this study because local sources, particularly large local newspapers, routinely cover both local and national news.

In terms of user perceptions, we focus on normative news attitudes including positive affect toward, perceived usefulness of, engagement with, and perceived credibility of tweets. Based on the previous discussion of competing norms in Twitter journalism, we posit that from a user perspective the Twitter platform characteristics that favor novel, interesting, opinionated, and humorous content will prove stronger than will traditional expectations of journalistic objectivity. In other words, we hypothesize that users will prefer opinionated news tweets to non-opinionated news tweets. We also predict that these preferences will be stronger for younger users who are less concerned with journalistic objectivity (Marchi, 2012). In addition, we predict that users will prefer local news tweets to national news tweets overall. The role of user age in influencing preferences for local or national tweets is not clear enough to inform a prediction.

Method

To test our hypotheses, we conducted a 2 (tweet tone: opinionated/non-opinionated) x 2 (tweet space: local/national) x 3 (user age group: younger age/middle age/older age) experiment examining how different types of tweets influenced respondents' reports of positive affect toward tweets, perceived usefulness of tweets, tweet engagement, and perceived credibility of tweets. We controlled for whether a participant had a Twitter account.

Stimuli

An online survey was used to randomly expose participants to experimental stimuli and to collect responses to questions after viewing the stimuli. The survey was fielded in February 2014. All of the experimental conditions included Twitter pages that were attributed to a fictional journalist (named Adam Wilson and depicted via photographic avatar as a Caucasian male of approximately middle age) employed by the largest local newspaper (participants from the Chicago, IL area saw a Twitter page associated with the *Chicago Tribune*; participants from the Los Angeles, CA area saw a Twitter page associated with the *Los Angeles Times*). See the Appendix 1 for an example experimental Twitter page. While all of the Twitter pages we used were created for this study and the journalist featured was fictional, we consulted the Twitter pages and websites for both of the selected newspapers to ensure that our experimental Twitter pages were as authentic as possible, while at the same time eliminating the possibility that participants had any previous experience with or attitudes about the actual journalist depicted on our experimental pages.

Participants viewed four Twitter pages displayed in random order, and each page focused on one topic (economy, education, environment, and transportation) and included five tweets. To look authentic, most of the tweets included shortened but non-working links (e.g. 'lati.mn/bh9is'). Between subjects, the Twitter pages varied depending on the tweet tone and tweet space category that a participant was randomly assigned. Tweet tone included opinionated and non-opinionated tweets. Non-opinionated tweets were written in typical news or headline style and were intended not to convey any journalistic opinion (e.g. 'Oil prices drop due to more domestic production. lati.mn/bh9is', 'Sears to expand headquarters, hire 300 new employees. chi.trib/cv8j7u'), whereas opinionated tweets were written to include some of the humor, sarcasm, and opinion often found on Twitter (e.g. 'Retirees to students: "screw you." RT @chicagotribune Illinois will spend more on pensions than education by 2016. chi.trib/dpV6t'; 'I hope local teacher layoffs won't destroy public school art and music programs'; 'What's wrong with the other 3 percent?!? RT @latimes: 97% opposed to #TSA body scanners. lati.mn/v6yH4'). Tweet space denoted tweets with either a local (e.g. 'Airport authority to consider adding new terminal at O'Hare. chi.trib/R4dev6') or national emphasis (e.g. 'FAA considering relaxing restrictions on using devices during flight. chi.trib/cd5fc'). In creating our experimental tweets, we attempted to identify news tweet topics that were less polarized overall (e.g. transportation) than other more politically polarized issues (e.g. reproductive rights). In addition, we attempted to create opinionated tweets that were not clearly aligned with partisan (i.e. conservative, liberal) positions.

Tweet tone and tweet space were crossed, meaning that each participant saw Twitter pages from one of the following conditions: (1) non-opinionated/local (25.0%, $n=303$), (2) non-opinionated/national (27.1%, $n=328$), (3) opinionated/local (23.7%, $n=287$), or (4) opinionated/national (24.2%, $n=293$). After each Twitter page, participants reported their positive affect toward the tweets, perceived usefulness of the tweets, and likelihood of tweet engagement. After viewing all four of the Twitter pages, participants reported their perceived credibility of all the Twitter pages they viewed.

Participants

Participants were adults aged 18 years and older from either the Chicago, IL (50.5%, $n=622$) or Los Angeles, CA (49.5%, $n=610$) metropolitan areas. Participants were sampled by GfK Customer Research (formerly Knowledge Networks) using KnowledgePanel, a probability-based web panel designed by GfK Customer Research to be representative of the United States. KnowledgePanel members have been recruited via random-digit dialing (RDD) or address-based sampling, which identifies households (randomly through telephone dialing or based on address) and then contacts a household member about participation in the panel. Panel members who agree to participate complete surveys via the Internet, and participants who do not have Internet access are provided computer hardware and Internet service as necessary. Panel members are provided incentive points, which are redeemable for cash or other modest compensation based on the specific study.

Probability-based Internet surveys, such as the one conducted here, have been found to be as accurate as RDD telephone surveys and to be more accurate than non-probability Internet surveys (Yeager et al., 2011). For the current survey, 2430 participants were invited to complete the survey, 1401 participants began the survey, and 1232 participants completed and consented to the survey, resulting in an American Association of Public Opinion Researchers (AAPOR, 2011) Response Rate 1 of 47 percent and Cooperation Rate 1 of 88 percent. In addition, 21 participants were eliminated from analysis because the time they spent completing the experimental survey was less than 3 minutes or more than 24 hours (median survey completion time was 10 minutes). This resulted in a final sample of 1211. Unweighted gender of participants was 58.8 percent female ($n=712$) and 41.2 percent male ($n=499$). Age was 14.1 percent, 18–29 years ($n=171$); 22.4 percent, 20–44 years ($n=271$); 33.4 percent, 45–59 years ($n=404$); and 30.1 percent, 60 years or older ($n=365$). Race of participants was 64.7 percent Caucasian ($n=784$), 9.7 percent African-American ($n=117$), 15.6 percent Hispanic ($n=189$), 7.3 percent other ($n=89$), and 2.6 percent two or more races ($n=32$).

Measures

Independent variables. We included two controlled experimental factors (tone: opinionated/non-opinionated; space: local/national) and one uncontrolled factor (age). We visually inspected the age of our research participants and created three age groups for

analysis: younger age (age 19–36 years, $n=402$, 33.7%), middle age (age 37–55 years, $n=399$, 33.5%), and older age (age 56+ years, $n=391$, 32.8%).

Control variable. There may be differences in the effects of news tweets for users who are experienced with Twitter compared with those who are not. For example, a recent study found that more experienced users perceived tweets to be more credible overall (Morris et al., 2012). Thus, we controlled for users' familiarity with Twitter by asking participants if they had a Twitter account (No: 71.0%, $n=860$; Yes: 29.0%, $n=351$).

Dependent variables. Positive affect toward the tweets and perceived usefulness of the tweets were assessed using a scale adapted from Soh et al. (2007). After each Twitter page was shown to participants, participants were provided a series of adjectives and asked how much each of the following terms described the page they just viewed with possible responses ranging from 1 (*not at all*) to 5 (*describes completely*). For affect toward the Twitter page the descriptors included likable, enjoyable, positive, and entertaining. For usefulness of the Twitter page, the descriptors included valuable, good, useful, helpful in keeping me informed, and relevant to my life. Both scales were found to be reliable (affect: $\alpha=.91$; usefulness: $\alpha=.95$).

Tweet engagement was assessed using items developed for this study. After viewing each page, participants reported how likely they would be to share any of the information they just viewed with others, retweet any of the tweets they viewed with others, click on a link included in any of the tweets they just viewed, read more from the Twitter user, and follow the Twitter account. Possible responses ranged from 1 (*not at all likely*) to 5 (*extremely likely*; $\alpha=.93$). Credibility of the Twitter pages was assessed after all the pages were viewed using items adapted from Soh et al. (2007) and Thorson et al. (2010). Participants were asked to consider all of the Twitter pages they viewed and indicate how much the following terms describe those pages: honest, truthful, credible, reliable, dependable, accurate, factual, complete, clear, competent, fair, and trustworthy, with possible responses ranging from 1 (*not at all*) to 5 (*describes completely*; $\alpha=.98$).

Data analysis

To test our hypotheses, a multivariate analysis of covariance (MANCOVA) was calculated, with tweet tone (opinionated/non-opinionated), tweet space (local/national), and user age group (younger, middle, older) entered as between-subject factors, whether a participant had a Twitter account (no/yes) entered as a control variable, and positive affect toward tweets, perceived usefulness of tweets, likelihood of tweet engagement, and perceived credibility of tweets entered as dependent variables. Significant MANCOVA omnibus results were followed by univariate tests. Multiple comparison tests with Bonferroni adjustment were then used to compare differences in estimated means for variables with significant univariate results. Interactions between all factors were also examined. Significant interactions were probed using simple effects tests with Bonferroni adjustment. For analysis, data were weighted using post-stratification weights calculated by GfK to address benchmark sociodemographic variables (e.g. gender, age, race/ethnicity, education, census region, household income). Post-stratification

weighting has been found to improve the reliability of probability-based Internet surveys (Yeager et al., 2011).

Results

Manipulation check

Prior to conducting our full analysis, we ran a manipulation check. After viewing all of the Twitter pages, participants reported how objective, unbiased, and balanced the tweets they viewed were, with possible responses ranging from 1 (*not at all*) to 5 (*describes completely*). These three items were averaged to result in an overall measure of non-opinionated tweet perception ($\alpha = .92$). An analysis of variance (ANOVA) was computed with tweet tone (opinionated/non-opinionated) entered as the independent variable and non-opinionated tweet perception as the dependent variable. Results indicated that non-opinionated tweets were perceived as significantly more non-opinionated (mean (M) = 2.45, standard deviation (SD) = .98) than opinionated tweets ($M = 1.80$, $SD = .90$; $F(1, 1104) = 134.77$, $p < .001$, $\eta^2 = .11$). Therefore, the opinionated/non-opinionated manipulation was successful and we proceeded with our main analysis.

Hypotheses

Participants reported positive affect, perceived usefulness, and tweet engagement following each Twitter topic pages. We collapsed these multiple reports into single measures for hypothesis testing. Tweet credibility was reported after respondents viewed all Twitter pages. To test our hypotheses, a MANCOVA was calculated with positive affect, perceived usefulness, tweet engagement, and perceived credibility as the dependent variables, with tweet tone (opinionated/non-opinionated), tweet space (local/national), user age group (younger/middle/older) entered as predictive factors, and with whether a participant had a Twitter account (no/yes) entered as a control variable. Omnibus results for tweet tone, Wilks' $\lambda = .82$, $F(4, 1090) = 60.84$, $p < .001$, $\eta^2 = .18$; tweet space, Wilks' $\lambda = .99$, $F(4, 1090) = 2.49$, $p = .042$, $\eta^2 = .01$; and user age group, Wilks' $\lambda = .94$, $F(8, 2180) = 8.20$, $p < .001$, $\eta^2 = .03$, were significant. The two-way interaction between tweet tone and tweets space was not significant, Wilks' $\lambda = .997$, $F(4, 1090) = 0.78$, $p = .54$, $\eta^2 = .003$; though the two-way interactions between tweet tone and user age group, Wilks' $\lambda = .98$, $F(8, 2180) = 2.15$, $p = .03$ $\eta^2 = .01$, and between tweet space and user age group, Wilks' $\lambda = .98$, $F(8, 2180) = 3.08$, $p = .002$ $\eta^2 = .01$, were significant. The three-way interaction between tweet tone, tweet space, and user age group was significant, Wilks' $\lambda = .98$, $F(8, 2180) = 3.36$, $p = .001$, $\eta^2 = .01$. Also significant was the Twitter familiarity covariate, Wilks' $\lambda = .97$, $F(4, 1090) = 8.07$, $p < .001$, $\eta^2 = .03$.

Univariate results indicated that tweet tone had an effect on participant perception of tweet usefulness, $F(1, 1093) = 56.35$, $p < .001$, $\eta^2 = .05$, and tweet credibility, $F(1, 1093) = 65.69$, $p < .001$, $\eta^2 = .06$, with non-opinionated tweets being perceived as more useful ($M = 2.29$, standard error (SE) = .03) than opinionated tweets ($M = 1.94$, $SE = .03$), and non-opinionated tweets also being perceived as more credible ($M = 2.49$, $SE = .04$) than

Table 1. Perceptions of news tweets and user age group.

Tweet perceptions	Age group (years)					
	Younger (19–36)		Middle (37–55)		Older (56+)	
	M	*SE*	*M*	*SE*	*M*	*SE*
Affect	1.98[a]	.04	1.85[a]	.04	1.91	.04
Useful	2.27[a,b]	.04	2.04[a]	.04	2.04[b]	.04
Engagement	1.81[a,b]	.04	1.57[a]	.04	1.46[b]	.04
Credibility	2.40[a,b]	.05	2.22[a]	.05	2.20[b]	.05

M: mean; *SE*: standard error.
Cell entries with the same superscript in the same row are significantly different at $p < .05$.

opinionated tweets ($M=2.05$, $SE=.04$). Univariate results indicated that tweet space had an effect on tweet engagement, $F(1, 1093)=6.47$, $p=.01$, $\eta^2=.01$, with local tweets resulting in more likelihood of engagement ($M=1.67$, $SE=.03$) than national tweets ($M=1.56$, $SE=.03$).

Univariate results indicated that user age group resulted in significant differences for all of the dependent measures: affect, $F(2, 1093)=3.33$, $p=.04$, $\eta^2=.01$; usefulness, $F(2, 1093)=10.38$, $p<.001$, $\eta^2=.02$; engagement, $F(2, 1093)=21.67$, $p<.001$, $\eta^2=.04$; and credibility, $F(2, 1093)=5.56$, $p=.004$, $\eta^2=.01$. Younger participants generally reported more positive affect, perceived usefulness, engagement, and perceived credibility related to viewing the news tweets than did middle age or older participants (see Table 1).

With regard to the significant interactions, univariate results indicated a significant effect for the tweet space and user age group interaction for tweet engagement, $F(2, 1104)=3.11$, $p=.045$, $\eta^2=.01$, with younger respondents reporting significantly ($p=.03$) more engagement with local tweets ($M=1.93$, $SD=.94$) than with national tweets ($M=1.75$, $SD=.74$). Middle age and older respondents did not report significant differences in engagement based on whether the new tweets were local or national. Finally, the three-way interaction between tweet tone, tweet space, and user age group was significant for all of the dependent measures: tweet affect, $F(2, 1104)=9.02$, $p<.001$, $\eta^2=.02$; tweet usefulness, $F(2, 1104)=8.71$, $p<.001$, $\eta^2=.02$; tweet engagement, $F(2, 1104)=6.52$, $p=.002$, $\eta^2=.01$; and tweet credibility, $F(2, 1104)=6.31$, $p=.002$, $\eta^2=.01$. See Table 2 for comparison of results of tweet tone and tweet space within the three user age groups (younger, middle, and older).

Discussion and conclusion

This project used a complex experiment to provide initial insight into the effects of news tweets on users. We developed experimental yet realistic Twitter pages to explore how different news tweet characteristics (tweet tone, tweet space) affected a variety of attitudes about news tweets including positive affect related to the tweets, perceived usefulness of the tweets, likelihood of tweet engagement, and perceived credibility of tweets. We also examined how these effects differed based on user age (younger, middle age, and older). We used a random sample of adult participants from two cities (Chicago and

Table 2. Effect of tweet characteristics (tone, space) on tweet perceptions within user age groups.

Tweet perceptions	Experimental condition							
	National non-opinionated		National opinionated		Local non-opinionated		Local opinionated	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Age 19–36 years								
Affect	2.08	.67	1.81[a]	.62	1.87[b]	.67	2.25[a,b]	1.06
Usefulness	2.67[a,b]	.79	1.91[a,c,d]	.68	2.37[c]	.79	2.27[b,d]	1.02
Engagement	1.86	.79	1.59[a]	.68	1.81	.82	2.09[a]	1.06
Credibility	2.82[a,b]	1.03	1.90[a,c]	.70	2.61[c]	1.00	2.34[b]	1.07
Age 37–55 years								
Affect	1.82	.61	1.86	.59	1.87	.70	1.86	.93
Usefulness	2.08	.77	1.94[a]	.72	2.29[a,b]	.89	1.88[b]	.84
Engagement	1.50	.57	1.57	.61	1.68	.81	1.52	.83
Credibility	2.37[a]	.87	2.14	.83	2.37[b]	.93	1.99[a,b]	.93
Age 56+ years								
Affect	1.89	.52	1.96	.75	1.91	.67	1.79	.64
Usefulness	2.20[a,b]	.68	1.87[a,c]	.76	2.17[c,d]	.74	1.75[b,d]	.69
Engagement	1.46	.60	1.40	.52	1.45	.57	1.40	.55
Credibility	2.32	.79	1.99[a]	.74	2.44[a,b]	.96	1.95[b]	.67

M: mean; *SD*: standard deviation.
Cell entries with the same superscript in the same row are significantly different at *p* < .05.

Los Angeles) and exposed them to experimental Twitter pages attributed to each city's largest local paper (*Chicago Tribune, Los Angeles Times*). This approach strengthened the external and ecological validity and the practical utility of our study. Our results point to several main conclusions.

Objectivity

In terms of the main effect of tweet tone (opinionated/non-opinionated) on tweet perceptions, we found that non-opinionated tweets were perceived as more useful and credible than opinionated tweets. Thus, from a main effects perspective, we conclude that the expectations of journalistic objectivity may still exist even for news posted on social media sites like Twitter. In examining the role of objectivity more closely and considering tweet space and user age, we find that across age groups there was generally a preference for local non-opinionated tweets (though younger participants reported that these tweets resulted in lower levels of positive affect compared with other tweets) and an even more consistent preference for national non-opinionated tweets. It is worth noting that the preferences for non-opinionated news tweets about national or local issues were typically related to higher perceptions of usefulness and credibility. The more emotional

(affect) and behavioral (engagement) outcomes in this study were not significantly affected by non-opinionated tweets. Thus, users judged objective news tweets as credible and useful, but these perceptions did not translate into liking and using or sharing. Given that these actions (liking, using, and sharing) are the currency of social media, the mismatch between objective journalist content and desired user behaviors may provide a strategic challenge for journalists and news organizations. If more objective news tweets are judged to be useful and credible but do not apparently result in action, how should journalists and news organizations approach tweeting about news? No immediate answer to this question is apparent, and thus is a topic that deserves significant attention from professionals and researchers in the future.

Local news tweets

We found that local tweets resulted in more user engagement overall than did national tweets. When considering the role of age in this effect we found that younger participants (19–36 years) were more engaged by local news tweets than national news tweets. Our study included a local news source for our tweets, so perhaps the finding that users preferred local news tweets from a local news source is obvious. But given the suggestion that social media may make 'place' less relevant (Leetaru et al., 2013), our results provide some evidence of the opposite, in that tweets about local news may be more likely to be used and shared by users and particularly by younger users. Thus, it appears that in terms of the twitterization of journalism, the local space might provide the richest opportunity for many journalists to have an effect on audiences. These results are potentially encouraging and helpful for journalists and news organizations for two main reasons. First, as local newspapers increasingly cease or reduce their operations, a transition to online local or hyperlocal news may become more necessary (Metzgar et al., 2011; Semuels, 2014). We find that audiences are receptive toward local social news content, and thus we are confident that online local news is desired by users. This desire does not automatically translate into a working economic model to support such news, but it at least illuminates a latent appetite for this type of content. Second, for those journalists at the forefront of using social media to create 'new' news models (e.g. Jian and Usher, 2014), the local social media news space may be the most fruitful place for emerging attempts at publishing such content. Interestingly, this avenue provides an opportunity for the new era of journalism to connect back with its local roots (Pauly and Eckert, 2002). Creating and sustaining a sense of community and promoting local features and events might be some of the traditional local journalistic aims (Pauly and Eckert, 2002; Schudson, 2001) that can be folded into the emerging local social news space. These traditional goals coupled with new social technology raise the possibility of interesting and vibrant local Twitter-based news in the future.

Generational effects

Age proved to be a very important variable in our analysis. Younger users in our study (19–36 years) generally reported more positive affect, perceived usefulness, engagement, and perceived credibility related to news tweets than did middle age (37–55 years) and

older (56+ years) participants (see Table 1). Twitter users trend younger (Mitchell and Guskin, 2013), and so the preference is in line with these user patterns. However, even after controlling for whether participants had a Twitter account (and thus some experience with Twitter), participant age was significantly related to all of our measures. Overall, we see evidence of a generational effect in terms of appetite for Twitter news. These preferences may eventually spread to older populations (as the technology continues to be adopted by older individuals and/or as younger users age), but for now, when attempting to understand the effects of social media, it is imperative that researchers consider the role of age.

Age and opinionated national tweets. The interactions that proved significant in our analysis also involved, and illustrated, the importance of age when considering social media effects. Our examination of the effect of news tweet tone and space on user perceptions within user age groups provided the most nuanced picture of tweet effects (see Table 2). For example, while each of the three user age groups reported generally less favorable perceptions of opinionated *national* news tweets (compared with the other types of news tweets included in this study), these negative perceptions were most pronounced among the younger users in the study. For all of the dependent variables we measured, younger participants (19–36 years) exhibited a pattern of reporting less favorable perceptions of opinionated national news tweets compared with the other types of news tweets. Moreover, while middle age and older participants were generally negative about all types of opinionated news tweets, the younger users in our study were uniquely negative about national opinionated tweets specifically (while being positive about local opinionated news tweets, see below). Based on these results, the claim that younger audiences reject journalistic 'objectivity' (Marchi, 2012) does not appear to always hold true when considering the space focus of news tweets.

Age and local opinionated tweets. Conversely, younger participants generally preferred opinionated *local* news tweets, reporting higher levels of positive affect and engagement for these tweets compared with other types of news tweets included in this study. This pattern is in contrast to middle age and older participants who generally reported opinionated local news tweets to be less useful and less credible than other forms of news tweets. The preference for local opinionated new tweets is another indicator of unique news tweet effects among younger users.

Twitter experience

Familiarity with Twitter was controlled for in our analysis and was significantly associated with our dependent variables. At its core, Twitter is a social media platform with simple design, but the nuances, rituals, and codes that have developed and proliferated on Twitter may not always be obvious to unfamiliar users. Simply transplanting Twitter content into other media (e.g. showing tweets in newspaper coverage or on television news broadcast) may not necessarily have the same effect on individuals who have no Twitter experience compared with those who are Twitter users. Ultimately, while Twitter is often heralded as a major asset for journalists and news organizations, it is most relevant to those who use it often, and that is still a minority of the population in the United States

(Mitchell and Guskin, 2013). Our overall results then, taken as a whole, provide evidence for promise and caution when considering the ongoing twitterization of journalism.

Limitations and future research. As with all research, this project had several limitations. First, we manipulated only news tweets and not the source of those tweets. Thus, we do not know if individuals have different perceptions of tweets from national new sources (e.g. *USA Today*) compared with local sources. National news sources do not routinely cover local and national news and this is why we chose local sources for our experiment. However, future research should replicate our work and include national sources. Future research could also consider sources attributed to broadcast television news, online only news, and more opinionated news sources. In addition, respondents may have had existing attitudes about the local sources used in our experiment that could have the influenced results, and we did not assess these attitudes. While the random assignment aspect of our experimental research design helps to control for the influence of pre-existing source attitudes, future research should directly examine the role of these attitudes in influencing news tweet attitudes. As a final note about sources, our tweets were attributed to fictional journalists who were unknown to participants. Future research could use well-known journalists as part of experimental news tweets to understand if user attitudes about journalists influence effects.

Second, our participants were sampled from just two US cities. We selected these cities so that participants could evaluate experimental tweets attributed to their actual local newspaper; however, as such we can only generalize our results to the Chicago, IL and Los Angeles, CA metropolitan areas. Future research should extend our work using a broader sample of citizens across the United States and in other countries. In addition, this experiment and much of the literature cited to develop the experimental design is based on US Twitter use. Twitter users in other countries may differ in terms of sociodemographics and attitudes. Future studies could replicate this study with participants outside the US and consider similarities across and differences between countries. Third, while we designed our experimental materials to be as realistic as possible, there was still significant artificiality in our design in that participants did not see the experimental tweets in an actual Twitter feed. Our approach helped us to begin understanding reactions to news tweets, but future projects should consider other approaches to better replicate the Twitter ecosystem in research projects.

Finally, many of the effect sizes for our experimental interactions were small. However, our findings still have practical value because the small effects documented in our study following exposure to just a few tweets may have cumulative value when users are exposed to many more tweets in a real social media environment. Moreover, even small effects when applied to millions of users could have practical implications for news organizations and even public opinion. Therefore, despite these limitations our results advance the overall understanding of Twitter and journalism.

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Appendix 1

Sample experimental Twitter page.

This sample page shows the opinionated national condition from the *Chicago Tribune*. The topic for this sample page is the environment. All Twitter conditions included the same fictional journalist avatar. The Twitter page for the *Los Angeles Times* included the same format as this example but included a different Los Angeles-specific background image and profile text. Twitter pages from the non-opinionated condition did not include the opinionated commentary as part of the tweet and instead only included a headline type tweet (e.g. 'EPA to increase efficiency on refrigerators, freezers. Chi/trib/c6Tyg'). Twitter pages in this study also focused on the topics of education, the economy, and transportation.