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News 2.0 and New Technologies

“News 2.0” is no longer a new term. It has been in common usage for over a decade (Meikle 2008), but it is more relevant than ever in today’s world. I define it as news made, disseminated, and consumed on Web 2.0 outlets, for social media platforms have become so popular for news organizations that they are now indispensable in the news business (Newman et al. 2012; Phillips 2012). Some scholars consider social networking sites (SNS) like Twitter as news media themselves, because of the opportunities they provide for sharing news (André et al. 2012; Hermida 2013; Al-Rawi 2016a,b) and understanding the nature of “quantified audience” (Anderson 2011). In addition, many Internet users find SNS to be far more practical than visiting each news organization’s individual website, because it allows them to find their news in one place, largely filtered based on their personalized and unique preferences.

Due to fierce competition and the changing news consumption behavior of people around the world, news organizations realized the need to change their traditional one-way communication strategy by allowing viewers to interact with the news on their websites, which included creating comments sections, allowing users to customize the online platforms according to their own preferences (Chung 2008; Chung and Yoo 2008), and sometimes even publishing readers’ online comments in their print versions (McElroy 2013). These were some of the first steps taken by media outlets to broaden their readership, before the meteoric rise of SNS. Later, they created multimedia platforms, in which the news experience is characterized by three main features: portability, personalization, and participation (Project for Excellence in Journalism 2010). Interactive features provided by news organizations include discussion groups, blogs, and forums (Boczkowski 1999; Schultz 2000), which have been described as “demassified forms of feedback” (Lievrouw 2001, p. 21). All of these tools have, on the one hand, enabled journalists to interact with their readers and, on the other, allowed readers to exchange their opinions among themselves (Constantinescu and

Tedesco 2007, p. 449). Many newspapers and TV stations also provide hyperlinks to other topics and stories, enabling journalists to change the news frame in a way that “emphasizes broader social and political themes,” since the “[e]xpanded framing may prove central to re-engaging an increasingly distrusting and alienated citizenry in a 21st Century democracy” (Pavlik 2001, p. 320).

What is important here is that news is read and shared much more than before; it has become a social experience (Redden and Witschge 2010, p. 181). Hermida calls this phenomenon “ambient journalism,” which refers to “social information networks that provide an asynchronous, lightweight and always-on communication system ... enabling citizens to maintain a mental model of news and events around them” (2010, p. 301). Goode notes that, in the world of ambient journalism, news stories are being “amplified, sustained and potentially morphed as they are re-circulated, reworked, and reframed by online networks” (2009, p. 1293). Most commonly, news organizations share hyperlinks to stories posted online in order to direct traffic from SNS to their own websites, where users can comment using their Facebook and Google+ accounts (Goodman 2013, p. 48; Ju et al. 2013, p. 1). In this way, news content can be disseminated “virally” (Stelter 2007, para. 11). Further, SNS offer solutions to news organizations that are less problematic and costly than comments sections, which have become notorious for containing a great deal of incivility (Howell 2007). Braun and Gillespie (2011) call SNS “digital intermediaries,” because of their practical functions.

The interactive nature of social media has revolutionized the dissemination of news. The *New York Times*, as early as 2010, recorded people tweeting its articles 17 times per minute, equivalent to one tweet every four seconds (Harris 2010). Around that same time, the Associated Press was believed to attract more audiences to its YouTube channel than its website (May 2010). As for Facebook, in February 2012 it was found to attract higher traffic to the *Guardian*’s website than arrived via online search engines such as Google (Phillips 2012, p. 669). Data on the frequency of readers’ visits, the time they spend on a site, their gender and age distribution, as well as the most shared, liked, and commented-on news stories are always important to news organizations (MacGregor 2007). Phillips believes this data “is now increasingly considered necessary to ensure that news is produced in a form that is capable of spreading virally” (2012, p. 669). As a result, many news organizations implement social media guidelines for their employees and hire social media specialists in order to maintain their image and identity and enhance their public relations efforts (Morton 2010; Steyn et al. 2010; Muralidharan et al. 2011, p. 228). Among the first TV stations to use Facebook to enhance its news dissemination was ABC News, which officially partnered with the site in 2007 to allow its users to “electronically follow ABC reporters, view reports and video and participate in polls and debates, all within a new ‘U.S. Politics’ category” (Stelter 2007). By 2018, CNN, for example, employed around 150 people to

tweet the news (Garrison-Sprenger 2008) and used its “Facebook Connect” service to increase its online audiences and make them more connected (Emmett 2009). A study by Messner, Linke, and Eford found that by 2009, 81% of US TV stations had Facebook pages; by 2010, it was 100% (2011, pp. 14–15).

Social media sites themselves have been fiercely competing to attract as many readers as possible in order to guarantee the flow of money from advertisers. Indeed, this advertising revenue has been drained from the news organizations themselves, especially local and small news outlets, which have been greatly impacted by the emergence of social media outlets, forcing many to shut down or downsize. According to a report by the Pew Research Center (2018), newspaper advertising revenues reached their climax in 2005 at over \$49.4 billion, but declined precipitously coinciding with the advent of social media to an estimated \$11.2 billion in 2017. In other words, social media platforms have indirectly played a major role in downsizing the news industry. Facebook realized early on the importance of news consumption on its platform. In 2015, the company signed a deal with nine famous news organizations, including the *New York Times*, the BBC, and the *Guardian*, in return for a share of the advertising revenues. This deal allows Facebook to host instant news stories on its platform, so users won’t need to browse to other websites in order to discover them (Evans 2015). One survey shows that online users consume news on Facebook-recommended pages more than they do pages recommended on Twitter, especially following the introduction of the Facebook Social Reader (Mitchell and Rosenstiel 2012), though this was shut down shortly after launching. While this survey deals with the US audience, it is important to mention the results of a Pew study here, which can provide a general insight into audiences’ media habits in other regions. According to this study, about 30% of Facebook users get news onsite; this is higher than for any other SNS, including YouTube (10%) and Twitter (8%) (Pew Research – Journalism Project 2013).

Despite the financial and practical advantages of knowing the demographics and reading habits of online audiences, some communication scholars warn that the increasing obsession with what readers want to read or view can force news outlets into tailoring their stories and reports to fit their audiences’ informational needs. In this regard, Shoemaker and Vos assert that “hard data about what readers want to read butts up against the social responsibility canon to give readers what they need to read” (2009, p. 7). Bright and Nicholls agree, and emphasize that while statistics on stories’ popularity can be useful, they have also “created worries about the potential for populism online: that editorial judgment [will] be overridden by traffic statistics” (2014, p. 178). This view is bolstered by previous studies on how audience news clicks and online preferences can affect the placement of news stories and other vital editorial decisions in relation to news production and dissemination (Thurman 2011; Lee et al. 2014).

SNS news readers are not always engaged with or interested in everything posted by a news organization, even if they follow its Twitter or Facebook page, and there's no guarantee they will engage with a particular story beyond skimming the headline on SNS. For example, when NPR posted a story titled "Why Doesn't America Read Anymore?" to its Facebook page on April Fool's Day 2014, many online readers commented on it after reading just the headline, not the full story – which of course was the joke (Dickson 2014; NPR 2014). This example sheds light on the kind of weak involvement some online readers have with news, mostly due to time constraints. Yet, this phenomenon is not confined to news stories posted on SNS outlets. Earlier studies showed similar tendencies when it came to print and online media (Garcia et al. 1991; Holmqvist et al. 2003).

The other problematic issue with News 2.0 is that some indicators of popularity may be deceiving because of the use of bots, troll armies, and paid users. In addition, relying on one indicator may not always be a good option when studying News 2.0. For example, the public Facebook pages of news organizations show their number of likes or followers. This can be an important indicator of the popularity of some pages or outlets, but it does not necessarily reflect real engagement with news. To provide a clearer picture, I used Netvizz, a social media mining tool, in mid-2017 to extract data from 26 Facebook pages belonging to different Arabic and English news media outlets. In total, I retrieved the metadata of 157844 Facebook posts made between January 20, 2010 and April 13, 2017, which generated 326257464 reactions. The digital tool has a 10000-news-stories limitation, and it is not clear whether all or most of the stories were retrieved, so there is a clear research limitation here. Regarding the more than 300 million Facebook reactions, they refer to the total number of likes and emotional reactions (wow, anger, haha, awe, and sad) but do not include the number of comments and shares. A whopping 91 out of 100 of the top posts belonged to Fox News (Table 1.1), despite the fact that its Facebook page has far fewer likes than CNN and the BBC. These top 100 posts got 31893875 reactions, which is a useful reminder that researchers have to analyze several indicators before judging the popularity of, and audience engagement with, news organizations and their content.

In this book, I examine News 2.0 on different platforms, approaching the phenomenon from different angles using a variety of digital methods and computational journalism approaches. From the side of content and its producers, I mostly use news values theory to examine differences and similarities in news coverage, providing important insight into the nature of global and regional news flow. There are several studies that examine the comments sections of news sites using, for example, content analysis (Abdul-Mageed 2008; McCluskey and Hmielowski 2012), but there are few empirical studies that have investigated the content of news stories posted on news organizations' SNS channels, especially from a cross-national comparative perspective. Sonia Livingstone outlines the challenges of

Table 1.1 Facebook news pages and frequency of total reactions.

No.	Page	No. of posts	Total reactions
1)	CNN Arabic	9993	739 369
2)	<i>The Guardian</i>	3241	1 963 470
3)	<i>The Independent</i>	6663	5 737 015
4)	Youm 7 (اليوم السابع)	9995	3 547 479
5)	Al Arabi	7081	1 328 947
6)	<i>Huffington Post-Arabi</i>	8366	2 022 548
7)	RT Arabic	9888	9 198 863
8)	DW Arabic	9965	8 263 656
9)	Fox News	7070	164 201 316
10)	Al Jazeera Arabic	9740	36 529 076
11)	<i>The Daily Mail</i>	4195	5 128 176
12)	SkyNews	2166	1 299 939
13)	SkyNews Arabia	9936	10 936 313
14)	France24	1657	107 467
15)	BBC News	3846	7 914 869
16)	DW	7956	827 397
17)	France24 Arabic	856	942 889
18)	RT	537	633 818
19)	XinhuaNewsAgency	9983	1 805 994
20)	<i>The New York Times</i>	3128	10 005 958
21)	CNN	5675	20 063 233
22)	CBC News	9981	3 519 474
23)	<i>The Washington Post</i>	2283	953 095
24)	Al Jazeera English	3363	2 743 514
25)	BBC Arabic	6755	6 152 507
26)	<i>The Huffington Post</i>	3525	19 691 082
-	Total	157 844	326 257 464

this type of research, but also highlights its many benefits, including “improving understanding of one’s own country; improving understanding of other countries; testing a theory across diverse settings; examining transnational processes across different contexts ... etc.” (2003, p. 479). This book purposefully uses many non-English and non-Western case studies. For decades, many scholars have been

calling for a de-Westernization of journalism, media, and communication research (Park and Curran 2000). Waisbord and Mellado define de-Westernization as follows: “It is grounded in the belief that the study of communication has been long dominated by ideas imported from the West Underlying this position is the argument that ‘Western’ theories and arguments are inadequate to understand local and regional communication processes and phenomena” (2014, p. 362). The main premise behind the de-Westernization trend is not a wholesale rejection of Western theories or media studies, but rather the “enrichment” of the available theories and methods (Wang 2010, p. 3). According to Shelton Gunaratne, de-Westernization should refer to “the addition of multiple approaches to investigate problems in their proper context, so that factors such as culture, environment, ideology and power are not omitted from the theoretical framework or held to be constant (*ceteris paribus*)” (2010, p. 474). This is an issue on which Wasserman and de Beer principally agree, calling for in-depth theoretical research rather than the mere provision of “descriptive comparative studies of journalism” (2009, pp. 428–429). One of the main problems of mainstream, Western media studies is its limited, Eurocentric and Anglo-American coverage. For example, in their review of previous research done on news sharing, Kümpel, Karnowski, and Keyling surveyed a total of 461 research papers published between 2004 and 2014, and found that there was an obvious focus on studies that dealt with the United States (about 79%), with “only a few that addressed other countries and almost none that discussed possible cultural differences or actually made cross-country comparisons” (2015, p. 10). Kümpel et al. recommend expanding news sharing studies “to multiple countries and cultural settings” (2015, p. 10). This suggestion was echoed by Wilkinson and Thelwall, who recommended examining “international differences in news interests through large-scale investigations of Twitter” (2012, p. 1634). Hanitzsch, among others, has noticed obvious Western bias in the selection of academic research topics, which “giv[es] scholars from the Global North a considerable advantage” (2019, p. 214). Instead of relying on social media data in the English language alone, this book attempts to fill a major gap in the literature by examining data in the Arabic language as posted by a variety of news organizations, allowing a closer examination of international news.

From the perspective of news consumers, I examine a variety of metrics, such as YouTube video views, number of Facebook comments, likes, and retweets. Here, the fact that some stories get viewed, commented on, liked, or retweeted more than others signifies that they are important, since online audiences not only select news articles to read but also disseminate them by liking or commenting on them. This activity can be linked to the concept of *produsage* (Bruns 2007; Horan 2013) because of its dual nature. According to Facebook, clicking like is an indication that someone is interested in a post or a story, which will also “be posted on [his or her] Timeline” (Facebook 2019), so liking a news story shows

engagement and reflects a certain degree of interactivity with the online material. Indeed, human beings may have a variety of motives for viewing, liking, and commenting on social media posts, such as indexing materials in order to consume them at a later stage or showing engagement with certain types of materials in order to express certain political ideas or stances. Facebook likes and comments are similar to retweeting a story or sharing a YouTube video, since a user's preferences can be seen and read by their friends or followers on the site. In this way, the shared, liked, or commented-on news story is more likely to appear on the user's social media timeline, allowing their friends and followers to further engage with the story.

In view of the rapid developments in the news industry and new technologies, I argue here that we have in fact entered the era of "News 3.0," part of "Web 3.0," a term coined by Manuel Castells to refer to "the cluster of technologies, devices, and applications that support the proliferation of social spaces on the Internet thanks to increased broadband capacity, open source software, and enhanced computer graphics and interface, including avatar interaction in three-dimensional virtual spaces" (2011, p. xxvii). Many news organizations have recently employed new technologies in producing and disseminating news, taking advantage of advances in algorithmic, automated, and robo-journalism that often involve the "use of computer software (*Natural Language Generation* [NLG]) to transform data and other material into a story that resembles a piece of human journalism, by following a pre-programmed structure and formula" (Harcup 2014). The *Los Angeles Times*, for instance, was the first newspaper to publish an automated story about an earthquake in 2014 with the help of a robot "journalist." China's Xinhua news agency introduced artificial intelligence (AI) anchors in 2018 that report news non-stop to interested audiences (Kuo 2018). *ProPublica* became the first mainstream media (MSM) organization to create a website on the Dark Web in an effort to diversify its audiences. The *New York Times* later followed its example. Accessing the Dark Web requires installing a browser like Tor, so it is not as straightforward as accessing the Open Web. The author examined *ProPublica*'s website on the Dark Web and found that it looks exactly the same as the one available on the Open Web, but it seems to be for those users who want to maintain their online privacy. Other new methods have been employed, like using 3D technologies in making and disseminating news (e.g. Sky 3D in the United Kingdom), 360-degrees news, and Snapchat (Lichterman 2015). Outlets such as RT Arabic and CNN have developed virtual reality (VR) news to micro-target specific audiences. These and other news organizations have embraced the potential of Web 3.0: innovation fueled by a variety of new technologies, including mobile apps.

Despite all this, news organizations' new practices, as well as the algorithms used by many SNS, do not seem to assist news consumers in being more informed.

Instead, consumers and users are increasingly becoming insulated by focusing on personalized content and sensational entertainment. Another drawback is that some of these new technologies can be used against the interests of the public, such as the phenomenon of “deep fakes,” which utilize AI techniques to make fake images and videos look real (Shwartz 2018). The use of online bots or automated accounts can also enhance the problems that exist in spreading fake news on social media (Al-Rawi et al. 2019). The disinformation problem is exacerbated by the reluctance of social media platforms to act effectively and promptly. For example, Facebook promised after the 2016 US election to act fast to end the spread of conspiracy theories by working closely with fact checkers; however, the results were not satisfactory, prompting many fact checkers to quit when the platform did not implement real changes (Levin 2018). Also, these platforms have themselves become a favorite venue from which to launch attacks against the news media by trolls, political parties, and public figures. For instance, the database of Google’s Transparency Report, which includes details on political advertising on Google and YouTube, shows hundreds of content items attacking MSM. As of July 2019, almost all such ads in the United States are paid for by US President Donald Trump and his official political campaign. Facebook Ads Archive, which provides details on paid political ads in several countries around the world, turns up the same issue when searching for ads referencing “fake news” in the United States: the highest number of paid ads associating MSM with fake news are posted by Trump and his official campaign, bringing in millions of dollars for Facebook. Unfortunately, this is another way in which social media outlets are assisting in undermining the credibility of MSM, by providing a venue for attacking journalists and news outlets.

In terms of future news research, there are promising opportunities. Mobile news apps are still highly under-researched, especially the means by which audiences interact among themselves in a high-tech version of the comments section. Also, there are many digital tools and online platforms that can be better utilized by researchers for the future study of news. For instance, Facebook Ads Manager is an interesting platform that can be employed to understand the demographics of Facebook news production and dissemination. It can provide detail on international audiences’ consumption of news along different variables, including gender, age, geographical location, educational level, ethnicity, interests, and so forth. This tool has recently been employed in many different studies to identify audiences’ interests regarding a variety of issues, such as news bias, disease surveillance, migrant monitoring, gender gaps, and schizophrenia awareness, among other things (Araujo et al. 2017; Saha et al. 2017; Zagheni et al. 2017; Fatehkia et al. 2018; Ribeiro et al. 2018). For example, there are 6.7 million users on Facebook, aged from 18 to over 65, who show interest or engagement with the following media outlets: the *Globe and Mail*, ABC News, CNBC, the *New York*

Times, the *Washington Post*, the Canadian Broadcasting Corporation, BBC News, CTV Television Network, CBS News, the *Washington Times*, CNN, Fox Broadcasting Company, NBC, and the *Wall Street Journal*. To give another example, there are over 13 million people worldwide interested in the Fox News channel, including 6.8 million males and 6.8 million females aged between 18 and over 65. Geographically, there are 110 000 users in the United Kingdom, 67 000 in Australia, and 140 000 in Canada interested in this news channel.

There are many other avenues opening up for future research. The GDELT Project, a global media-monitoring database associated with Google Jigsaw, offers some interesting areas of news research, though there are limitations in terms of its thematic and visual classification of news stories. It can be used to examine and test several theories and concepts related to news values, biases, agenda setting, and intermedia agenda setting.

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