

Interactive and multimedia journalism: evaluating Canadian news media's
implementation of non-traditional storytelling elements in online features about the
“Airbnb Effect”

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Introduction

Since spring 2019, numerous Canadian news outlets have reported on the problem caused by short-term rentals in cities across the country. In Montreal alone, where the apartment vacancy rate fell from 1.9 per cent in 2019, to 1.5 per cent in 2020, phenomena like the “Airbnb effect”— the transferral of apartments from long-term rental markets toward the short-term market via Airbnb and similar platforms, which contributes to falling vacancy rates and to the gentrification of several neighbourhoods— have received both local and national media attention from outlets like the *Globe and Mail*, *Global News*, and *CBC/Radio-Canada*.

Canadian news media have taken notice of this so-called Airbnb effect. While several outlets have published more traditional print or text-based journalism pieces on the issue, a number of outlets decided to produce online, multimedia, interactive features, given the data-driven nature of the story. Data-based stories can often be better told through visuals and interactive features: the integration of charts, interactive maps and multimedia elements creates a more immersive environment and helps to explain and display data in a more user-friendly and comprehensible way, allowing journalists to use different storytelling techniques to contextualize the data, and at times push the boundaries of traditional journalistic storytelling. As Nikki Usher notes in her book *Interactive Journalism*, journalists “ may help people understand stories through code-enabled multimedia in a way that offers enhanced understanding of a social phenomenon discussed in a story. Or journalists may present and render data in new

ways that advance understanding, beyond just the static presentation of information through traditional graphics or through the text of a story.”¹

In this essay, I will analyze three Canadian news outlets’ digital features about the short-term rentals issue published between April 2019 and June 2019: (1) Radio Canada-CBC’s April 2019 interactive long-form piece titled “[How Airbnb's biggest players invaded Montreal's hottest neighbourhoods](#),” which focused on the concentration of Airbnb units in specific Montreal neighbourhoods; (2) the *Globe and Mail*’s June 2019 data-driven multimedia long-form feature, “[Airbnb likely removed 31,000 homes from Canada's rental market, study finds](#),” which analyzed the results of a [McGill study](#) on short-term rentals and reported on how many units Airbnb have allegedly been removed from the rental market; and (3) *Global News*’ June 2019 multimedia long-form story, “[Should Canadian cities ban Airbnb and other home-sharing platforms?](#),” which was also based on the McGill study’s results and examined different people’s experiences with Airbnb.

These three examples will be analyzed to explore the digital storytelling methods employed in order to draw out the benefits and potential detriments of using such non-traditional journalism techniques to report on complex issues like the Airbnb effect. Such stories about the short-term rentals issue in Canada offer excellent examples to explore questions related to multimedia, interactive, and data-driven journalism, because of the different ways in which journalists can display the data to make them more understandable or impactful for the readers. All three digital features examined in this essay focus on data-driven reporting methods and tie together numerous media

¹Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p.28

elements and interactive components to communicate complex stories centred on the short-term rentals issue. This approach offers readers various entry points and ways to engage with the reporting and take in information. As Jake Batsell notes in *Engaged Journalism Connecting with Digitally Empowered News Audience*, “[...] enabling readers to explore the data themselves” is a key element, because “in the digital era that basic expectation of interactivity has become one of the most essential components of effective journalistic engagement.”²

However, it is unclear whether such non-traditional digital storytelling techniques are effective at communicating stories and retaining audience interest.

This essay will start by providing a brief overview of the short-term rentals issue in Canada. It will then present its analysis’ driving concepts, namely “multimedia” and “interactivity,” and focus on what makes multimedia and interactive journalism different from traditional print and broadcast forms. Then, it will move on to the research methodology, which will describe the processes used to carry out a multimedia analysis on each of the three examples. This multimedia analysis seeks to understand at what levels the three chosen examples integrate interactive features and apply a multimedia approach to storytelling, and which types of interactives and multimedia are privileged. This essay will then present the multimedia analysis’ main findings. It will conclude with a discussion on how Canadian news outlets might approach their investments into interactive and multimedia digital long-form journalism in order to improve their connection with the communities they serve, providing them with engaging digital

²Jake Batsell, *Engaged Journalism: Connecting with Digitally Empowered News Audience*, Columbia University Press, 2015, p.105

contents that they care about, instead of risking to invest economic and human resources in a news product that audiences do not connect with.

While the analysis is limited to three specific examples, the main goal of this essay is to shed some light on what can be done to improve the integration of multimedia and interactives storytelling techniques in beneficial ways for both the journalists and the audiences and communities they serve.

The short-term rental situation in Canada

In August 2017, the Urban Politics and Governance research group of the School of Urban Planning at McGill University published a report on the short-term rental situation in Canada.³ Their research collected and analyzed data regarding Airbnb's impact on Canadian cities from many points of view. Some of the data, provided by the consulting firm Airdna reveals how many Airbnb hosts are active in Canadian cities, daily prices, and details about listings from 2014/2015 and 2017.⁴ In this time period, there were more than 81,000 active listings in Montreal, Toronto and Vancouver combined: 31,449 in Montreal, 29,653 in Toronto and almost 19,994 in Vancouver.

Other sources of data used for the McGill study include the Canadian Census (2011 and 2016 editions) and the Canadian Mortgage and Housing Corporation's (CMHC) Rental Market Survey 2016, which helped the researchers understand what

³Wachsmuth, Kerrigan, Chaney & Shillolo, Short-term cities: Airbnb's Impact on Canadian Housing Market, McGill School of Urban Planning, 2017

⁴Airdna is a data company that offers two main services: collection and geographical display of short-term rental data and calculation of revenues by short-term rentals based on the daily rates plus cleaning fees.

has happened to the housing markets in a number of large Canadian cities, like Montreal, Toronto and Vancouver, since Airbnb became present in these locations.

What do these data reveal? According to the McGill study, the Canadian housing market in the biggest cities is heavily influenced by the increasing presence of short-term rentals: more than 80,000 units across the Montreal, Toronto and Vancouver regions were active on Airbnb in 2016. The ratio of homes to -rental properties, per listing stands at one active listing for every 58 homes in Montreal, one for every 75 in Toronto, and one active listing for every 51 homes in Vancouver. The three cities have also seen a 50 per cent year-over-year increase of active listings since 2016.⁵

Another issue illuminated by the report is one of revenue: the top 10 per cent of Canadian Airbnb hosts collectively earned \$430 million in revenues in 2016. Among them are the so-called “multi-listings” hosts, those who manage two or more entire-home listings or three or more private-room listings. These multi-listings hosts represent a third of all active hosts on Airbnb.

The revenue issue also brings up questions about the tax requirements for those who make consistent profits through this platform, questions that each province has answered in a different manner. Quebec, for example, implemented a new provincial law requiring owners who want to rent their properties on a short-term basis (less than 31 days) to get a provincial registration number and permit to be included in every ad connected to the unit. For each unit rented on a short-term basis, this costs between \$50 and \$75, including a registration fee and additional fees.

⁵Wachsmuth, Kerrigan, Chaney & Shillolo, Short-term cities: Airbnb's Impact on Canadian Housing Market, McGill School of Urban Planning, 2017, p.2

The City of Toronto also implemented similar regulations: all short-term operators must register their properties with the city and pay a one-time fee of \$50. They are also subjected to the four per cent Municipal Accommodation Tax. Short-term rental platforms like Airbnb have to pay a \$5,000 license fee plus \$1 for every night booked through the platform.

A crucial point made by the McGill study involves the number of units the short-term rental industry practically removes from the long-term rental market. To identify such units, the researchers applied the rule of 60 days and 120 days of availability: if an apartment is listed on Airbnb and booked—occupied for 60 days in one year, and available to occupy for another 120 days in the same year—it is to be considered a full-time Airbnb listing, and thus not available to someone looking for a long-term rental.

According to the study, almost 5,000 full homes in Montreal and in Toronto are actively listed on Airbnb—homes that are thus not available to long-term tenants.

There are areas in these three cities where the presence of Airbnb removed two to three per cent of homes from the primary residential market. Generally, the most affected areas are those closer to the downtown core of these cities.

The presence of Airbnb affects prospective tenants by driving up rental prices: landlords who have properties near city centres may decide to rent their units on a short-term basis to increase their revenues, and to avoid a long-term commitment to one tenant. It is a factor of gentrification: rents increase in areas that were still affordable before short-term rentals moved in, driving tenants to areas further away from city centres until short-term rentals and other factors of gentrification reach those areas as well.

As explained further below, the serious social and economic impacts of the short-term rentals issue, as well as the story's complex data-driven nature, have prompted a number of Canadian news outlets to cover it using multimedia and interactive storytelling techniques, rather than through more traditional print and broadcast methods.

Interactivity, multimedia, and non-traditional journalistic storytelling

Defining interactivity is the first step to take before going any further. It is important to not take such definitions for granted, and instead question what exactly interactivity means, and what specifically makes a given news piece interactive.

According to Nikki Usher in her book *Interactive Journalism*, we can describe “interactivity” as “a visual presentation of storytelling through code for multilayered, tactile user control for the purpose of news and information.”⁶ As Usher explains, an interactive piece of journalism is one that is not solely text-based and makes use of various storytelling techniques where the user directly interfaces and chooses their path through the content. Interactive journalism thus allows the user to actively engage with multiple components of a given story in a non-linear fashion.

This definition presents a series of limits: it is unclear whether just any multimedia piece of journalism—that is, reporting that uses a number of media formats to tell one story—automatically becomes interactive, and vice-versa. When it comes to digital multimedia news articles, users can engage with the pieces in the order they prefer; they don't necessarily have to follow the order that the journalist envisioned. For

⁶Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p.18

example, users may be more interested engaging with the text first, and not a video positioned above the text, as proposed by the journalist.

However, in *“Ethics for Digital Journalists: Best Emerging Practices”*, Mindy McAdams states: “Not all multimedia packages include interactivity. If a user has no choices apart from clicking *play*, *pause* or *stop* that story is not interactive.”⁷ In his article “What is Multimedia Journalism?” Mark Deuze also explains that “multimedia” and “interactivity” are not synonymous. Based on Deuze’s definitions, “multimedia journalism” refers to digital news stories that combine at least two forms of media, such as audio, text, video, animations, hypertextual elements, and so on. “Multimedia” can also refer to the integrated presentation of a news story through different media simultaneously.⁸ Multimedia pieces can be text-based articles, as long as they are published on a website and in combination with other media. As Susan Jacobson says: “Multimedia” is an imprecise term, because of its evolving nature.”⁹ Technology is in constant flux and development, and thus the appearance of new media platforms available to audiences offers new digital challenges to journalists and scholars in terms of finding a definition for “multimedia.”

Like “multimedia,” “interactivity” is also an imprecise term. In the late 1990s, scholars started writing articles to define it more precisely. However, much of the literature concludes interactivity is not a monolithic concept, but rather can be applied in a variety of ways. For example, in “Defining Interactivity: a Qualitative identification of

⁷Mindy McAdams, *“Ethics for Digital Journalists: Emerging Best Practices”*, Routledge,2015,p.190

⁸Mark Deuze, What is Multimedia Journalism? *Journalism Studies*, Volume 5, Number 2, 2004, p.140

⁹Susan Jacobson, Emerging Models of Multimedia Journalism, *Atlantic Journal of Communication*, p.65

key dimensions,”¹⁰ Downes and Mcmillan focused on computer-mediated interactive communication, and identified *three participant’ dimensions* related to the user’s experience with an interactive piece: control, responsiveness, and perceived goals¹¹.

Users have control over how they want to engage with an interactive piece, which content to explore first, how to move through the piece, and how much time to dedicate to each part of it. Articles are a means of communication, and in this sense one of the respondents participating in Downes and Mcmillan’s study found that: “The true meaning or the consequence of greatest import in interactivity is that we are transferring control to the user. [...] Every time you give the user control, it means you have even less control over the potential meaning that could be derived from your information.”¹²

Downes and Mcmillan’s concept of “responsiveness,” or what results from users clicking on a hyperlink or other interactive components, is not limited to what happens when the user clicks on a hyperlink, but also includes the opportunity to customize content according to the user’s interests and priorities. As Downes and Mcmillan note, responsiveness is a key element of interactivity: “interactive communication requires all messages in a sequence to relate to each other. This implies that interactivity is a series of related active and reactive communication.”¹³

¹⁰Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000

¹¹Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000, p 169

¹²Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000, p 170

¹³Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000, p 171

As for “perceived goals,” Downes and Mcmillan state that journalists set an interactive article’s original goal, but that users may set other goals through the ways in which they respond to the piece, as related to their own perceptions: “Individuals are willing to accept messages based on both persuasive and informational goals in the interactive communication environment. But the ways in which they respond to those messages may be more consistent with their own perceptions than with the actual goals of the content creator.”¹⁴

Usher defines interactivity in a more straightforward way. She writes: “Interactivity can be described as the control that users exercise over the selection and presentation of online content, whether story text, audiovisuals, or multimedia, and other aspects of the interface.”¹⁵ An example of this can be found in the digital longform piece, [United Mafias of Europe](#). Published in 2017, this report on the presence of mafias and other organized crime groups in Europe and their principal activities was based on official documents and data from Europol, Eurojust (European justice and police), and financed by the Directorate General for Communication of the European Parliament. The realization of this project involved many people: investigative journalists and the Investigative Reporting Project Italy (IRPI), video makers, art director and translators. The article’s interactive map allows users to choose which country to explore: by clicking on it, a pop-up window appears and provides some basic information about what kinds of organized crime associations or mafias operate in a given country, and what kind of illegal activities they’re involved in. Each pop-up offers a link to a longer

¹⁴Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000,p 172

¹⁵Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p.19

article about the criminal network present in that country. While interacting with this piece, users can have control over what country to explore first, what chapters to interact with and their order, and which videos to play and when.

One of the most-recognized early examples of such digital interactive journalism is *New York Times* journalist John Branch's "[Snow Fall: The Avalanche at Tunnel Creek.](#)" Published in 2012, this interactive multimedia piece about a February 2012 avalanche that killed three skiers from a group of 16 in the Cascade Mountains in Washington, offers an immersive experience accurately realized through a variety of media and digital techniques. The piece is divided into six chapters in which Branch's text is accompanied by audio clips, videos, photos, graphics and "fly-over" topographic maps. The feature story uses three technical design components: videos, scrolling, and the curtain effect, which "makes scrolling more playful by gradually revealing and concealing panels of content, including text and visuals, as the reader scrolls down the page."¹⁶ It gives the user a feeling of exploration. At the same time, the curtain effect that is activated simply by scrolling allows the user to automatically transition between the story's many multimedia elements.

The piece won a Pulitzer prize in 2013, and is still regarded as one of the foremost examples of digital multimedia interactive journalism. It set a model that has been reproduced by other news media. As Dowling and Vogan note, "Snow Fall" created a template and the concept of "snowfalling," which is to "create highly evolved

¹⁶David Dowling & Travis Vogan (2015) Can We "Snowfall" This?, *Digital Journalism*, 3:2, 209-224,2014,p214

journalistic products that serves commercial strategies” by integrating interactive and multimedia elements into online longform features.¹⁷

This extraordinary piece attracted 3.5 million visits, but, as Dowling and Vogan note in their article “Can we ‘Snowfall’ this?,” the average time spent on it was only 12 minutes—far short of the time needed to completely take in this long-form story’s six complex chapters.¹⁸ Dowling and Vogan also note that “snowfalling” requires news outlets to make large budgetary and staff investments. For “Snow Fall” alone, the *New York Times* dedicated a team of 30 professionals (including researchers, video journalists, multimedia producers, digital and graphic designers) to the story for one year, something not all news organizations can afford.

In summary, multimedia journalism can be defined as digital news stories that combine at least two forms of media, such as audio, text, video, animations, hypertextual elements. Interactive journalism, on the other hand, can be defined as “a visual presentation of storytelling through code for multilayered, tactile user control for the purpose of news and information.”¹⁹

Methodology

Following the concepts of “multimedia” and “interactive” journalism defined above, this essay analyzes three examples of multimedia and/or interactive journalism

¹⁷David Dowling & Travis Vogan (2015) Can We “Snowfall” This?, *Digital Journalism*, 3:2, 209-224, 2014, p210

¹⁸David Dowling & Travis Vogan (2015) Can We “Snowfall” This?, *Digital Journalism*, 3:2, 209-224, 2014

¹⁹Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p18

that apply “snowfalling” techniques to news stories about short-term rental issues in Canada, from three different news outlets:

1. The *Globe and Mail*'s [“Airbnb likely removed 31,000 homes from Canada’s rental market, study finds,”](#) written by Tom Cardoso and Matt Lundy. The article, published only the *Globe and Mail*'s website on June 20, 2019, analyzes the results of the McGill study about short-term rentals on Canadian cities. The article focuses on the situations in Toronto, Montreal and Vancouver, and also in some rural areas like Muskoka, Ontario, to illustrate the impact of short-term rental platforms like Airbnb on local rental markets.
2. *Global News*' [“Should Canadian cities ban Airbnb and other home-sharing platforms?”](#) by Jane Gerster. The article, published online on June 24, 2019, uses data from the McGill study and focuses on what Canadian provinces can do in terms of legislation to limit the negative effects of short-term rentals
3. The CBC/Radio-Canada collaboration, [“How Airbnb's biggest players invaded Montreal's hottest neighbourhoods,”](#) written by journalist Naël Shiab. Published online on April 30, 2019, the piece focuses on two popular Montreal neighbourhoods, the Plateau-Mont-Royal and Ville-Marie, and on the biggest Airbnb hosts active in the city.

The three examples were selected after conducting searches via Google News and on the *Globe & Mail*, CBC/Radio-Canada and *Global News* websites. The searches used key terms, including “feature,” “multimedia,” “interactive,” and “Airbnb.” These searches revealed these outlets had published many more articles about short-term rentals, but most were traditional text-based stories with photographs. However, in the period

analyzed, from January to July 2019, the three news outlets also published the c longform pieces in question, which demonstrated the highest integration of multimedia and/or interactive elements within the coverage. These three features also heavily rely on the same data from the McGill study about Airbnb's impact on Canadian rental markets. Although they present different angles on the same issue, these three articles are longform pieces published online that make use of multimedia and/or interactive contents to tell the story.

Example #1: The Globe and Mail

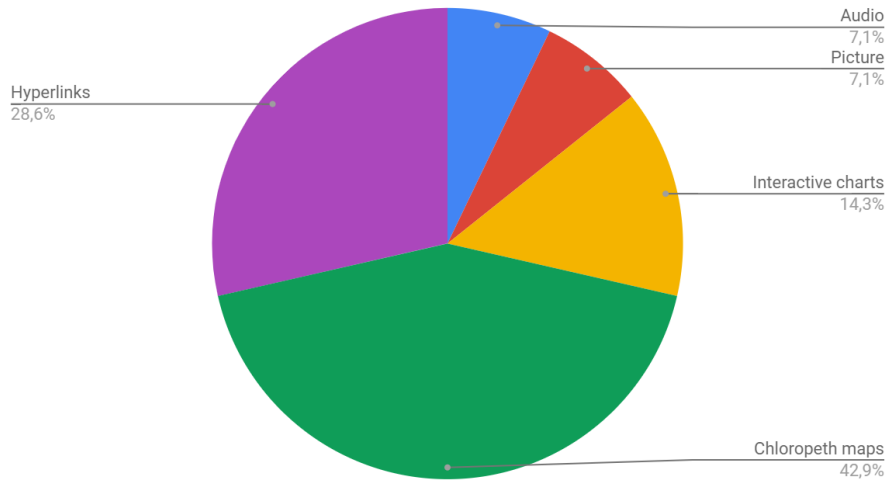
[*Airbnb likely removed 31,000 homes from Canada's rental market, study finds*](#)

The journalists behind this piece of long-form journalism, published on June 20, 2019, come from two different areas of expertise: Tom Cardoso is a crime and justice reporter, while Matt Lundy is an economic reporter. A main source of data and information in this article is the McGill *Short-term Cities: Airbnb's impact on Canadian Housing market*, study released in August 2017.

The article is a largely text-based, but it also presents an audio version: users can click on an icon to have the article read to them. Integrated within the text are two interactive line charts about the estimated number of houses removed from the long term rental market and the daily active Airbnb listings.

Fig. 1: *Quantifiable Interactive and or Multimedia Elements of The Globe & Mail coverage: one audio, one picture, two interactive charts and six choropleth maps.*

The Globe&Mail interactive/multimedia elements



Although the text is clearly a form of media, including the 2012 words used in this article in this chart would not give a clearer representation of the integration between text and multimedia or interactive elements. The piece it's mainly composed by a written longform in which multimedia and interactive elements are integrated: there are four hyperlinks, two link to articles written by Cardoso and Lundy about Airbnb effect on small Canadian towns and about actions taken in Toronto, Ottawa and Vancouver to limit the Airbnb effect in those cities. The other two links redirect the reader to two articles from Shane Digman, real estate reporter, about Airbnb in Toronto and what does it mean to list a unit on the platform.

The interactivity of the article's two charts consists of users being able to move the cursor along the lines to see the progression of the data reported on.

There also are six choropleth maps, which are not interactive, that use colour gradients to show the density of Airbnb listings in major Canadian cities, such as Toronto, Montreal, Vancouver, Calgary, Ottawa.

Based on definitions put forward by Deuze, these two features qualify this article as a multimedia piece: along with reading the text, the user can interact with the two line charts and follow the evolution of the presented data. The interactive charts are not difficult to understand, and they also are among the most-used visuals in data-driven pieces. This makes them easy to recognize, but may not attract the same attention and curiosity as a more interactive tool would. Users can also take in visual geographical

information through the maps that display the density of short-term rentals in certain areas of the cities analyzed. The choropleth maps, although they are not interactive, do provide an effective visual translation of the data analyzed. The quotes from experts from different subject areas relevant to the story, like McGill professor and a *Short-term Cities* report co-author David Wachsmuth, and people who rent out Airbnb properties on a short-term basis only, also help contextualize and humanize the data in a comprehensible way.

The article succeeds in presenting the data in a clear and contextualized way.

As Schwabish notes: “Effective visualizations show the data to tell the story, reduce clutter to keep the focus on the important points, and integrate the text with the graphs to transfer information efficiently.”²⁰

However, do its multimedia features also make the article interactive? According to Usher, to be truly interactive, such features should not be anchored in textual journalism, which the *Globe and Mail* piece arguably is. However, the text article is complemented with the audio option, which gives users an additional, non-textual method to take in the story: it offers the users to have the article read to them in English, French and Mandarin. This audio, however, is not a podcast, and therefore it can't give the user the ability to time shift the content, or to listen to it at anytime, anywhere.

A question remains: could there be other ways to represent the story and the data behind it? Cardoso and Lundy chose to have two interactive line charts: one about the estimated number of units removed by the long-term market and one about daily active Airbnb's listings. For the first one, they could have also chosen to realize an

²⁰ Schwabish, A. J. (2014). “An economist's guide to visualizing data.” *Journal of Economic Perspectives* 28(1), p.231

interactive story map using the map of Canada where the user could “activate” different areas by clicking on or hovering over them with the cursor to access the data. This would create a more engaging and customized experience for users. Giving them a more active role in the story may increase the time spent in interacting with piece and the overall comprehension of the data. As Margo E. Berendsen, Jeffrey D. Hamerlinck and Gerald R. Webster note in their article for the International Journal of Geo-Information, students who use interactive story maps as educational tools find them engaging and easy to interact with and that they would rather use the interactive map than paper maps or atlases.²¹ If such a digital tool is used in schools to improve children’s learning, it can as well be used to increase the audience engagement with digital long-form stories, such as *The Globe and Mail* piece analyzed here.

As for the second chart—the daily active listings on the Airbnb platform, an interactive infographic could have added some variety to piece, to increase the interest of the users and help keeping them interested, and to provide easier and more attractive ways to present data. As Banu İnanç Uyan Dur explains in *Interactive Infographics on the Internet*: “ The purpose of infographics is to present intense and complex data content in a regular and perceivable manner. Infographics present data, information and/or processes related to a certain subject in a story like visual arrangement.”²² Interactive shareable infographics offer a simplified way to display some of the data and have shorter text to contextualize them. In addition, such

²¹Margo E. Berendsen, Jeffrey D. Hamerlinck and Gerald R. Webster, Digital Story Mapping to Advance Educational Atlas Design and Enable Student Engagement, International Journal of Geo-Information, 2018,p14

²²Banu İnanç Uyan Dur, Interactive Infographics on The Internet, Online Journal of Art and Design volume 2, issue 4, 2014, p.2

infographics are highly shareable on social networks, which can increase the interest into the piece and help spread the information to wider audiences.

The static images of the choropleth maps, too, could be interactive if they combined the data about the percentage of Airbnb listings with a timeline, and by having the different sections change colour according to how the progression of short-term rentals has evolved, in order to give a more dynamic way to visualize the speed at which Airbnb is growing in those cities.

Adding these elements could help attract and increase the level of reader interest and to display the data in an attractive and understandable way, in order to stimulate the users' engagement and perception of a deeper understanding of the data and the topic. As Downes and Mcmillan found “[...]interactivity increases as:

- participants perceive that they have greater control of the communication environment.
- participants find the communication to be responsive.
- individuals perceive that the goal of communication is more oriented to exchanging information than to attempting to persuade.”²³

The Globe and Mail piece is largely a text-based article, as the *Global News* example is. But while this first example incorporates interactive charts, maps, hyperlinks and a read-to-me option, as the next section explains, the *Global News* example incorporates audio, videos, and hyperlinks in a text-based article.

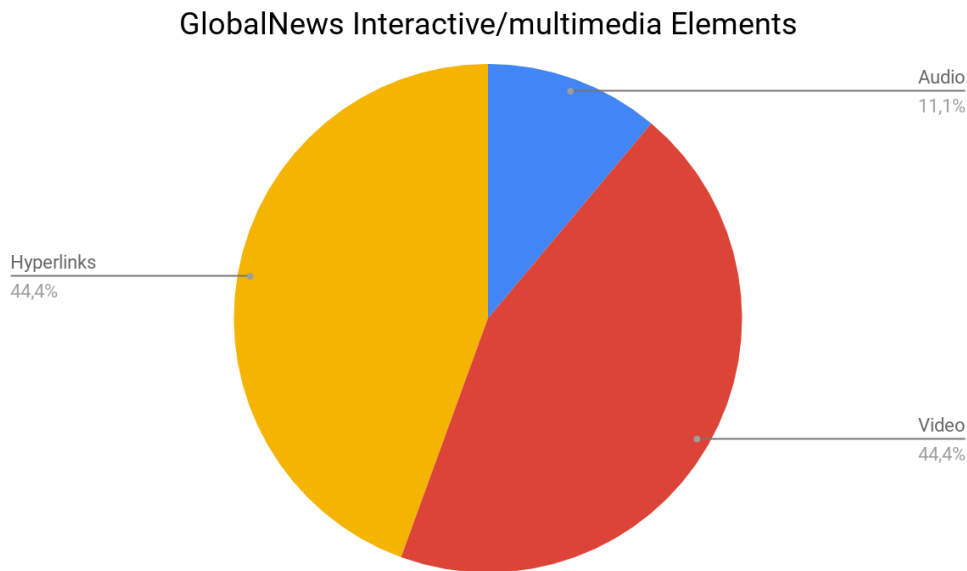
Example #2: Global News

²³Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000,p 173

Should Canadian cities ban Airbnb and other home-sharing platforms?

Published online on June 24, 2019, the piece produced by Jane Gerster presents a different angle to the short-term rentals issue in Canada: it is a Toronto-based article, with text, audio and video elements and hyperlinks, that focuses on the analysis of the legislative measures some Canadian provinces have taken to address short-term rentals.

Fig. 2: Quantifiable Interactive and or Multimedia Elements of the Global News coverage: one audio file, four videos and four hyperlinks



Although the text is clearly a form of media, including the 1551 words used in the article in this chart would not give a clearer representation of the integration between text and multimedia or interactive elements. The piece it's mainly composed by a written longform in which multimedia and interactive elements are integrated: there are four hyperlinks, three of the redirect the user to local-based articles about Airbnb effects from GlobalNews, and one about the possible benefit for Canadians in implementing a "foreigner buyers ban" as in New Zealand.

Like the *Globe and Mail* feature described in the previous section, this is a text-based article that also links to a related five-minute podcast by Global News radio journalist Alan Carter, in which he interviews professor David Wachsmuth from School of Urban Planning at McGill University. Through the interview, Carter presents and

contextualizes the findings reported on in the McGill study with one the members of the research group. The podcast element also gives users an additional, non-textual method to take in the story: it gives the user the ability to time shift the content, so that they can listen to it at anytime, anywhere and to play it again as many times as they want to. As McClung and Johnson found in their study “Examining the Motives of Podcast Users,” “‘timeshifting’ includes statements about easily accessing podcasts, accessing podcasts when users want, the ability to download podcasts day or night, and accessing only the podcasts users like.”²⁴

The Global News digital feature also includes videos from four of the network’s local divisions. Each of the four videos is a traditional television broadcast package from the various location-based editions of Global News, rather than standalone videos produced for its digital platform. The first video is about the housing crisis in Toronto, while the second focuses on new regulations proposed in Nova Scotia about safety and tax requirements for rooms or units rented on a short-term basis. The third video is about insurance coverage concerning Airbnb rentals. It mainly focuses on what kind of coverage Airbnb offers those hosting short-term rentals through the platform for damaged goods and liability issues. The fourth video is about the new regulation for short-term rentals introduced in Quebec in summer 2019. The report explains the new registration and tax requirements for those who want to rent short-term, even for just one room.

²⁴Steven McClung Ph.D. & Kristine Johnson M.S. (2010) Examining the Motives of Podcast Users, *Journal of Radio & Audio Media*, 17:1, 82-95, p.88

Hyperlinks throughout the feature story text link to other Global News articles focusing on other Canadian cities and other jurisdictions. One links to an example of court rulings about Airbnb in New York, for example.

Overall, this is an interesting article that moves through the various aspects of short-term rentals in Toronto. It draws on data from the McGill report, and uses interviews with experts, including Shauna Brail, associate professor of urban planning at the University of Toronto, an Airbnb spokesperson, and a real estate sales representative. All these components help the article approach the topic from a comprehensive perspective. The podcast component featuring Alan Carter's interview with professor David Wachsmuth enriches the user experience with the piece, if the user decides to click on the icon. But, the interactivity incorporated in this feature is limited. Following Usher's definition of interactive journalism, the fact that this is a text-focused product already poses restrictions. As she notes, interactive journalism is an original user-focused approach that differs from the classic text-based online article, presenting a unique path through the story. In addition, the article falls short in the tactile experience: the interaction between the piece and the user is constrained to only two actions, namely scrolling—so users can keep reading the text—and clicking — which allows users to play the videos or use the hyperlinks.

Based on Deuze's definition of multimedia journalism, there is no doubt about the multimedia characteristics of this article: the audio, videos and hyperlinks tied together in this piece allow the user to get more specific information about the legislative measures that Canadian provinces are implementing to contain the impact of Airbnb in the local rental markets. This article is well structured and it provides an explanation of

the different short-term rental situations in Canada. The integration of three videos, four hyperlinks and a five-minute podcast offers users access to more information on the same topic and allows them to choose what to play first and when.

It does fall short on the interactive side however. While the article is mainly text-based and it represents a good example of using multimedia elements to address a complex topic, the interactive elements offered are limited to playing the videos or clicking on the hyperlinks. How might interactivity be augmented in this feature story, in order to attract more users attention, increase their engagement and better display the data? Similar to what could have been done with the *Globe and Mail* article above, Global News could have chosen a completely different approach for this piece, working with the design team to create an interactive infographic that would allow the user to move from one province to the other, incorporating the videos and pertinent quotes.

An infographic's purpose is "to present intense and complex data content in a regular and perceivable manner"²⁵ that could help displaying and make more understandable the different provincial regulations on short-term rentals, combining the educational and informative element and an increased feeling of interaction in the users, according to Downes and Mcmillan work, users experience that "[...]interactivity increases as:

- participants perceive that they have greater control of the communication environment.
- participants find the communication to be responsive.

²⁵Banu İnanç Uyan Dur, Interactive Infographics on The Internet, Online Journal of Art and Design volume 2, issue 4, 2014, p.2

- individuals perceive that the goal of communication is more oriented to exchanging information than to attempting to persuade.”²⁶

Both *The Globe and Mail* and the *Global News* pieces, as well as the CBC/Radio Canada feature analyzed in the next section, have the fact that they are largely text-based in common. Unlike the *Globe and Mail* and *Global News* pieces, though, the next section will show how the CBC/Radio Canada team focused more on the use of interactive elements, such as interactive diagrams, interactive dot charts and the curtain effect to create a text-based digital longform feature.

Example #3: CBC-Radio Canada

[How Airbnb's biggest players invaded Montreal's hottest neighbourhoods](#)

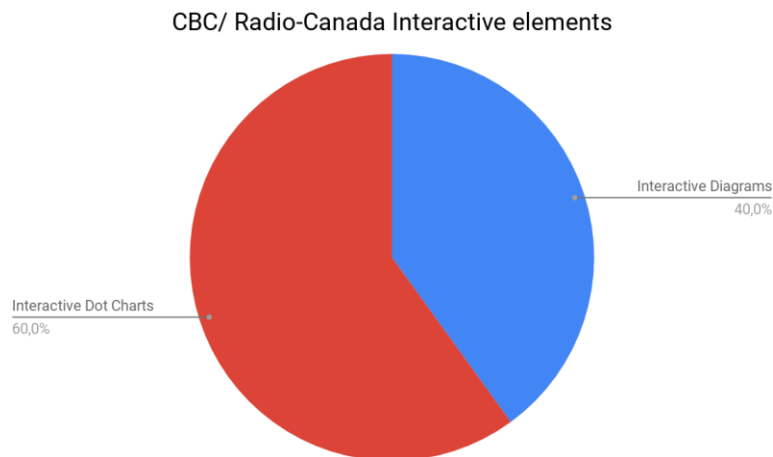
This interactive long-form feature was produced by data journalist Naël Shiab and a team of other specialists: designers Philippe Tardif and Francis Lamontagne, bureau chief Melanie Julien, copy-editor Loreen Pindera, translation support from Vincent Maisonneuve, data-journalist Valérie Ouellet, investigative journalist Zach Dubinsky, developer and data-journalist William Wolfe-Wylie, and sport journalist Romain Schué. It was published online on April 30, 2019. The story focuses on Montreal, and is available in English and French. It is the result of a CBC/Radio-Canada investigation into how many listings on Airbnb actually respect Quebec’s law, which requires landlords who want to rent their unit on short-term platforms to obtain a registration number for each unit rented. The CBC/Radio-Canada investigation looked into how many listings had this number in their ads, and how many did not. In addition

²⁶Edward J. Downes, Sally J. Mcmillan, *Defining Interactivity: a Qualitative identification of key dimensions*, News and Media Society, 2000, p 173

to the legal angle, the article also looks into who the biggest players of the short-term rental game in Montreal are.

The entire piece has a *Snow Fall* feeling to it thanks to the curtain effect: the user scrolls to keep reading and is automatically directed to a map of Montreal and taken through the neighbourhoods Shiab analyzes in the article: Ville-Marie and the Plateau Mont-Royal.

Fig. 3: *Quantifiable Interactive and or Multimedia Elements of the CBC/Radio-Canada coverage: two interactive diagrams and three interactive dot charts*
Although the text is clearly a form of media, including the 2068 words used in the article in this chart



would not give a clearer representation of the integration between text and multimedia or interactive elements. The piece it's mainly composed by a written longform in which multimedia and interactive elements are integrated; similarly the Curtain Effect and the Scrolling Activation are interactive elements that are impossible to quantify.

The maps are not static images. Rather, scrolling through brings up captions with information obtained through the CBC/Radio-Canada investigation, while the corresponding data points are displayed on the same map.

In this way, the user is given the visual impact of what the information in the captions' text means, and can simultaneously see the effects on the neighbourhood

shown. The visuals presented provide a contextualization of the text and an effective snapshot of the Airbnb presence in the two neighbourhoods analyzed. It is not precisely the user interacting with the maps, but the action of scrolling down that automatically brings up new information both in the text and in the maps. The same technique is also applied in the second part of the piece that focuses on the three biggest Airbnb hosts in Montreal. To do this, the piece incorporates interactive dot charts that show the number of listings each host has in Ville-Marie and the Plateau Mont-Royal.

This is not a map in the strict sense of the word: users are presented with the three biggest hosts identified by the CBC/Radio-Canada investigation as those Airbnb with the highest number of active listings for entire homes in Montreal, while scrolling brings up blue dots representing the units these host have in Montreal that automatically group around each host based on their holdings. The blue points are subsequently divided into red and black—red for the units listed by these hosts in Ville-Marie and black for those in Plateau Mont-Royal.

These interactive elements help the users visualize the Airbnb presence in the most affected neighborhoods in Montreal. They also help users to have a better comprehension of the phenomenon described, and they give a visual presentation of who the biggest players in Montreal are, and what that means.

Although this is still largely a text-based piece, the interdependence of reading the article and seeing the moving elements makes this long-form a piece of interactive journalism. Based on Usher's definition, this is an original visual representation of a data-driven story that actively integrates interactives, such as maps and graphs, into the storytelling of the piece. The text and data elements are not separated, but are

presented in a cohesive user experience. Users also have a certain, although limited, level of control over how they engage with the article: the action of scrolling down activates more information and the next map.

As for the multimedia side, although there are no videos or audio involved, the piece incorporates a combination of text, visuals, and interactive elements that fulfill Deuze's requirements of at least two media. However, the incorporation of video or audio interviews with experts, housing rights committee members and tenants living in the Plateau Mont-Royal and Ville-Marie would have enriched the users' experience by providing them with a more local insights given by those who are affected by Airbnb's presence. As Sam Meddis said in an interview with Margaret Looney in her piece [*Digital journalism professor: online video is "a global antidote to ignorance,"*](#) published by the *International Journalist Network* on August 6th, 2013: "[...]when appropriate also include video there to give people that extra dimension in understanding what the story was about." An extra dimension that journalists can use to help their audience visualize the issue, empathize with the interviewees, and pay more attention to the story.

Given Shiab and his team's background in data-journalism, investigative journalism, design and development, an interesting option to augment coverage and include more elements of interactivity in this feature emerges, namely to create a news game. As Christoph Plewe and Elfriede Fürsich write in "Are Newsgames better Journalism?," news games "differ from traditional media regarding their interactive elements. Games demand an active involvement in the production of content. They turn

more or less passive recipients of a predefined media content into users or players who are actively engaged in how they experience the information presented”.²⁷

One example is [The Refugee Challenge](#), produced by The Guardian in 2014. The Refugee Challenge is a short, mainly text-based news game, produced by John Domokos, Harriet Grant and the Guardian Interactive Team. Users take on the role of an asylum seeker and, like in a “Choose Your Own Adventure” book where the reader chooses how to proceed in the story—, are presented with choices to make: where to seek refuge between Europe and Turkey, if you should try to settle in Turkey or try to enter Europe, if rejected from Greece, should you try passing from Bulgaria or make another attempt in Greece? This news game shifts the narrative: the user is not a passive receiver of the information, but they choose different paths and receive more information after each choice. It is a different way to present news content to the audience: the user is asked to be the protagonist of the news story, and to ask themselves the kinds of questions that refugees and asylum seekers ask.

The Refugee Challenge news game also presents maps, pictures, videos and hyperlinks about refugee realities: what they are fleeing, what “illegal push backs”²⁸ are, the conditions of certain refugee camps, and so on. By providing information in a gamified way that puts users at the centre of the story, news games can help increase the empathy that users may feel toward the people and situations covered.

²⁷Christoph Plewe & Elfriede Fürsich (2018) Are Newsgames Better Journalism?, *Journalism Studies*, 19:16, 2470-2487, p.2471

²⁸According to the European Center for Constitutional and Human Rights: “Illegal Push back are a set of state measures by which refugees and migrants are forced back over a border – generally immediately after they crossed it – without consideration of their individual circumstances.” <https://www.ecchr.eu/en/glossary/push-back/>

A news game featuring a few character choices— such as an apartment seeker facing the impact and consequences of Airbnb’s presence in Montreal, a tenant who is risking a renoviction,²⁹ or a tourist looking for a short-term accommodation that complies with the law—would allow the CBC/Radio-Canada team to explore several aspects of short-term rental platforms from different points of view in a more engaging way; as Plewe and Fürsich conclude” “Newsgames especially enhanced journalism when they cleverly employed game logics and rules to generate experiential engagement.”³⁰ It would be more time-consuming, for both the users and the journalistic team that produces the news game, but such efforts can translate into a more appealing digital product attracting more users that may spend more on the piece. As Batsell notes, the use of interactivities to display data helped news media such as *The Texas’ Tribune*, *The Christian Science Monitor*, and others in attracting and engaging more viewers, which became, for certain of them, a significant portion of revenue.³¹

Although the CBC/Radio-Canada piece is the most interactive of the three examples analyzed in this essay, creating a news game where users impersonate a long-term tenant looking for an apartment in Montreal or someone trying not to be “renovicted,” would have offered a more immersive and unique experience focused on a situation well known to millions of people in Canada: looking for an apartment. The case where the user chooses to take on the role of a tourist looking for a short term accommodation that respects provincial laws would have given the chance, to Shiab

²⁹“Renoviction” refers to when a landlord evicts a tenant in order to renovate the unit and rent it at higher price, usually on short-term platforms.

³⁰Christoph Plewe & Elfriede Fürsich (2018) Are Newsgames Better Journalism?, *Journalism Studies*, 19:16, 2470-2487, p.2483

³¹Jake Batsell, *Engaged Journalism: Connecting with digitally Empowered News Audiences*, Columbia University Press, 2015, chapter 4

and his team of experienced journalists and data-journalists, to create various scenarios to explore the most complicated aspects of the Airbnb biggest players' power in the rental market.

Conclusion:

The complexity of the short-term rentals issue in Canada addressed by the McGill study and the three news features analyzed here presents journalists with a variety of ways to investigate, report, and present their stories. The short-term rentals issue is an important story to communicate to audiences as it has serious impacts on people's lives, and can pose problems with finding a home for many people. In addition, short-term rentals have been shown to change the social geography of many Canadian cities, while also creating some grey areas with regards to taxation and legality.

The three news features analyzed in this essay relate to the same study, the McGill report by David Wachsmuth, Danielle Kerrigan, David Chaney and Andrea Shillolo, and all three integrate at least two multimedia or interactive elements with text.

The three news media organizations also had more than one journalist or other media professionals contributing to each piece: for *The Globe and Mail* feature, two different journalists worked on the piece together. While the *Global News* piece is signed by one journalist, it features videos from and hyperlinks to the work of other *Global News* reporters on the same topic. The *CBC/Radio-Canada* feature had a team of 10 people who contributed to the piece.

Could these articles be more interactive and, less text-based? For *The Globe and Mail* and the *Global News* pieces, they could have had a more reader-driven

approach³², which means “no prescribed ordering of images, no messaging and a high degree of interactivity,”³³ through the integration of more or different interactives to help increase the users’ participation with the articles. The *CBC/Radio-Canada* article, although largely text-based, presents a high level of integration between text and interactives that creates a balanced interactive article.

Could these three pieces be “snowfalled?” Technically speaking, yes— almost every long-form piece of journalism could be snowfalled. However, the main issue is how to best do it. As Dowling and Vogan note, “snowfalling” is not without its costs: it requires serious economic, staff and technological investments, that not all news outlets can afford. As Dowling and Vogan note, the effort to snowfall a long-form piece is not only technical and technological; it is also economical. We might assume that *The Globe and Mail*, *Global News* and *CBC/Radio-Canada* have the financial means to sustain such efforts. It is also important to remember that such investments are no guarantee of success. The risk is to overestimate the effect of interactive long-form features: “Snow Fall” created high expectations for what digital long-form journalism could do, especially among journalists and scholars. But still, the average time spent on it was only 12 minutes.

It is clearly important for news outlets to explore new, alternative forms of multimedia and interactive storytelling in a continuously evolving digital news environment, in order to offer their communities “highly evolved journalistic contents”

³²Wibke Weber, *Exploring Narrativity in Data Visualization in Journalism*, 2020, p 300, <https://digitalcollection.zhaw.ch/handle/11475/19886>

³³Wibke Weber, *Exploring Narrativity in Data Visualization in Journalism*, 2020, p 300, <https://digitalcollection.zhaw.ch/handle/11475/19886>

that not only serve commercial strategies, but that also answer their demands, strengthening the connection between news media and the citizens they serve.³⁴

However, the effort towards a further integration of interactivities and multimedia in the news needs to be balanced with a similar effort in reconnecting with the communities that they serve. As Usher concludes “it’s critically important for readers to feel connected to news organizations as the source not only for world, national, and local news, but for news about themselves. This personal news builds a case for the newspaper’s relevance in a world of social media and citizen journalism.”³⁵

News media could use tools they already have to improve that connection: journalists could use their social profile to propose discussion topics for upcoming meetings with the communities, giving their audiences an insight into what it takes to realize interactive long-form journalism, and a virtual space to propose issues they feel pressing in the community.

As Homero Gil de Zúñiga, Trevor Diehl and Alberto Ardèvol-Abreu found in their article, “When Citizens and Journalists Interact on Twitter”: “Increased citizen engagement means higher likelihood of reaching a larger audience, while at the same time increasing traffic to news websites. For citizens, the increased exposure to individual journalists may alter orientations toward the media, thus increasing their news consumption.”³⁶

As Usher notes, interactive journalism gives journalists the opportunity to display data and to tell stories in different ways: combining storytelling techniques with coding,

³⁴David Dowling & Travis Vogan (2015) Can We “Snowfall” This?, *Digital Journalism*, 3:2, 209-224,2014, p210

³⁵Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p190

³⁶Homero Gil de Zúñiga, Trevor Diehl & Alberto Ardèvol-Abreu (2018) When Citizens and Journalists Interact on Twitter, *Journalism Studies*, 19:2, 227-246, p.241

digital journalists can provide their audiences with more engaging and user-friendly digital news packages and a different way for the audiences to access the information. Moreover, non-traditional pieces of interactive journalism have “the capacity for self-discovery, the potential for a richer engagement with content, and at times the enhancement of data presentation can help readers get a better sense of social phenomena at hand.”³⁷

Interactives offer a wider range of options to display the same data set: journalists can choose the option that they think better serves the audience in understanding the data, or the selection of data. *Snow Fall* itself is an example of the potential of interactive journalism: the *NYT* team produced a virtual experience of the story, explaining the avalanche, step- by- step and describing the aftermath in great detail. But, if the average time spent on it was only of 12 minutes there might be something missing. The *NYT* might have benefited from a closer journalist-to-audience interaction before realising *Snow Fall* in order to better communicate what drove them in producing such a piece, or consulting them on the actual interest for the topic.

Aas Zúñiga, Diehl and Ardèvol-Abreu note in analysing the interactions between journalists and their audiences on Twitter “[...] the more people engage with journalists on Twitter, the less likely they are to report viewing the media having editorial biases.[...]This may be because these individuals are learning more about the intentions of the individual journalist, the processes of reporting, and the potential social utility of journalism on social media.”³⁸

³⁷Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p 183

³⁸Homero Gil de Zúñiga, Trevor Diehl & Alberto Ardèvol-Abreu (2018) When Citizens and Journalists Interact on Twitter, *Journalism Studies*, 19:2, 227-246, p.240

Applying similar techniques to social issues while also strengthening the journalists-to-audience interaction can attract more interest to the issue itself, and help engage the audience with the piece, and the news outlet who produced it.

In conclusion, digital tools can improve the ways in which journalists report news, but can't guarantee a sure success of the articles themselves. Rather than disproportionately focusing on adding interactive features to articles, news outlets could interact directly with their communities to contribute to a news game on a topic they propose or vote on, suggesting characters, situations they experienced about the specific subject to make the news game the more likely to appeal to the audiences. The main focus for every investment that news outlets want to undertake in interactive and multimedia journalism has to be to improve their connection with the communities they serve. As Usher states: "it's critically important for readers to feel connected to news organizations as the source not only for world, national, and local news but for news about themselves. This personal news builds a case for the newspaper's relevance in a world of social media and citizen journalism."³⁹ Without this connection, the crisis of journalism can only worsen, as the profession itself can only exist if there are communities to serve.

Bibliography and References

Batsell, Jake, *Engaged Journalism: Connecting with Empowered News Audience*, Columbia University Press, 2015

Berendsen, Margo E., Hamerlinck, Jeffrey D., & Webster, Gerald R., "Digital Story Mapping to Advance Educational Atlas Design and Enable Student Engagement," *International Journal of Geo-Information*, 2018

³⁹Nikki Usher, *Interactive Journalism*, University of Illinois Press, 2016, p190

Carmody, Tim, "The Evolution of Autoplay," Nieman Journalism Lab
<https://www.niemanlab.org/2015/12/the-evolution-of-autoplay/>, 2015

Cheng, Brian X. "Autoplay Videos Are Not Going Away. Here's How to Fight Them."
<https://www.nytimes.com/2018/08/01/technology/personaltech/autoplay-video-fight-them.html>, 2018

Creech, Brian, Nadler, Anthony M., "Post-industrial fog: Reconsidering innovation in visions of journalism's future," *Journalism*, 2018, Vol. 19(2) 182 –199

Deuze, Mark, "What is Multimedia Journalism?" *Journalism Studies*, Volume 5, Number 2, 2004

de Zúñiga, Homero Gil, Diehl, Trevor & Ardèvol-Abreu Alberto (2018) "When Citizens and Journalists Interact on Twitter," *Journalism Studies*, 19:2, 227-246, 2018

Dowling, David & Vogan, Travis (2015) "Can We "Snowfall" This?", *Digital Journalism*, 3:2, 209-224, 2015

Downes, Edward J. & Mcmillan, Sally J. "Defining Interactivity: a Qualitative identification of key dimensions," *News and Media Society*, 2000

Eleveth, Rose, "Playing the News," Nieman Reports, 2016, <http://niemanreports.org/wp-content/uploads/2016/01/NRWinter2016.pdf>

Jacobson, Susan, "Emerging Models of Multimedia Journalism," *Atlantic Journal of Communication*, 2010

Kennedy, Helen, Weber, Wibke, & Engebretsen, Martin, "Data visualization and Transparency in the News," 2020, <https://digitalcollection.zhaw.ch/handle/11475/19901>

Looney, Margaret, "Digital journalism professor: online video is "a global antidote to ignorance"," *International Journalists' Network*, August 6th, 2013
<https://ijnet.org/en/story/digital-journalism-professor-online-video-global-antidote-ignorance#:~:text=Video%20can%20be%20very%20emotionally,culture%20and%20the%20people%20themselves.>

McAdams, Mindy, *Ethics for Digital Journalists: Emerging Best Practices*, Routledge, 2015

McClung, Steven & Johnson, Kristine "Examining the Motives of Podcast Users," *Journal of Radio & Audio Media*, 17:1, 82-95, 2010

Pavlik, John V., "Innovation and the future of journalism," *Digital Journalism*, 1:2, 181-193, 2013

Plewe, Christoph & Fürsich, Elfriede "Are Newsgames Better Journalism?" *Journalism Studies*, 19:16, 2470-2487, 2018

Singer, Jane B. "Getting past the future: journalism ethics, innovation and a call for flexibility first," *Comunicação e Sociedade*, vol. 25, 67–82, 2014

Steensen, Steen, "Online journalism and the promises of new technology: a critical review and look ahead," *Journalism Studies*, 12:3, 311-327, 2011

Tufte, Edward R., *Visual and statistical thinking: displays of evidence for making decisions*, Graphics Press LLC, 1997

Usher, Nikki, *Interactive Journalism*, University of Illinois Press, 2016

Uyan Dur Banu İnanç, "Interactive Infographics on the Internet," *Online Journal of Art and Design*, 2:4, 2014

Weber, Wibke, "How design is giving meaning to journalistic artifacts. A multimodal analysis." 2017, <https://digitalcollection.zhaw.ch/handle/11475/1529>

Weber, Wibke, "Exploring Narrativity in Data Visualization in Journalism," 2020, <https://digitalcollection.zhaw.ch/handle/11475/19886>

Wen Tiffanie, "This Is Your Brain on Podcast: Why do Audio Stories Captivate," *The Atlantic*, 2015, <https://www.theatlantic.com/entertainment/archive/2015/04/podcast-brain-why-do-audio-stories-captivate/389925/>