The Importance of Explanatory Infographics in Journalism

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By

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Informational graphics, visual representations that blend data and design to present complex information quickly and clearly to the viewer using charts or maps, has been around for centuries and is widely used today by news media. But in the past five years, U.S. newspapers and news magazines have downsized their staffs and cut back on newsprint to counteract the effects of the nation's struggling economy and other forces affecting the print news industry. Because of this, a very important aspect of covering the news in print called *explanatory graphics* — a type of informational graphic also known as editorial, diagrammatical, enterprise, or stand-alone graphics — is being published less. In an ever-increasing visual world, explanatory graphics convey information to readers clearer than mere words can, and do so by engaging readers with finely rendered artistic content. Many times they are the visual entry point to news content that may be overlooked if covered only with a written story. With the media landscape now shifting and the business model that served newspapers no longer viable, and with more than 166 U.S. newspapers closing since 2008[1], the use of space-consuming explanatory graphics in print might continue to decrease. An analysis of the evolution and value of explanatory graphics in print news reporting will help provide a feasible plan on how to integrate them in today's downsized newsroom environment.

Large explanatory informational graphics are a form of visual storytelling combining layers of illustration, statistical data, and/or mapping with few words. Whether accompanying a news story or published as a stand-alone presentation,

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[1] Roy Greenslade, "166 US newspapers vanish in two years," *The Guardian*, July 6, 2010, http://www.theguardian.com/media/greenslade/2010/jul/06/uus-press-publishing-downturn (accessed June 21, 2013).

they had become a popular medium used by U.S. newspapers and news magazines to visually cover the news during the last decade of the 20th century. In the 1980s and 1990s, explanatory graphics were first created to cover large national news stories such as the Space Shuttle Challenger disaster, Operation Desert Storm, and wind storm coverage of Hurricane Andrew, and were later featured with softer, more illustrative "non-breaking news" stories. These large infographics were more in-depth and space consuming than traditionally smaller maps and charts, which had been used until then. Explanatory infographics achieved equal visual play with photojournalism and garnered respect from journalists as a valuable resource for disseminating the news. Because of this, there became a need for a different type of talent in the newsroom: one that could combine research, writing and art. Photographers and writers were no longer the only journalists that reported the news. Therefore, art departments were renamed "graphics" departments, and staff artists were renamed "graphics reporters," as they became regarded as an important part of news reporting.

But in the late 1990s and early 2000s, as explanatory graphics were becoming a staple of news reporting, the future soon would be a humbling one as the U.S. economy struggled and difficult financial times hit the newspaper and news magazine industry. To counter the loss of revenue due to increasing paper costs, decreased advertising, and declining readership with the arrival of the Internet,[2]

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[2] Stephanie Chen, "Newspapers fold as readers defect and economy sours," *CNN,* March 16, 2009, http://www.cnn.com/2009/US/03/19/newspaper.decline.layoff (accessed August 13, 2013).

newsrooms started cutting back on the space allotted for large graphics, as well as the staffs that produced them. Charles Apple, former graphics director of *The Virginian-Pilot* and *The Des Moines Register*, and currently the Focus page editor for *The Orange County Register,* believes the desire to cut costs was more important than the coverage of news using explanatory graphics:

> There was a huge interest in reducing the cost of producing news. That interest trumped the traditional interest, which kept the focus on needs of the reader and in finding effective ways of telling stories in new and interesting ways. Fact is graphics aren't cheap. Salaries, software and training are expensive, as is the additional time it takes to plan and execute good visuals.[3]

Magazines such as *TIME* and *Newsweek*, which regularly had a two-page spread infographic in more than half of their weekly issues, reduced their well-staffed graphics and research departments to a minimum. *Newsweek* reduced their graphics staff of five to two, and eventually eliminated it altogether. At *TIME,* the graphic staff was downsized from seven artists and two researchers to just one artist. Thus, large explanatory graphics at these magazines were the first to be cut back, as described by Lon Tweeten, Graphics Artist at *TIME*:

> It was late 2008 when all hell broke loose at *TIME*. The magazine lost Jackson Dykman (Graphics Director at *TIME*, 2001-2008) and Joe Lertola. *TIME* was

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[3] Charles Apple, e-mail interview, October 8, 2013.

shifting to a much-simplified "New York Magazine" style of graphics that would complement the photography of the magazine, not compete with it for dominance. The new philosophy was a lot cheaper too — no need to hire high-end 3D illustrators.[4]

This trend of limited resources continues, and currently many U.S. newspapers and news magazines rely mostly on traditional maps and charts to help explain the news in graphic form, even when events require more to visually explain a story. Although large metropolitan dailies such as *The New York Times*, *Washington Post*, *The Wall Street Journal* and *USA Today* still occasionally run explanatory graphics, most newspapers around the country have cut back because of their downsized graphics departments. A recent survey of 50 of the leading newspapers in the U.S. conducted by Jeff Goertzen, Senior Associate and Consultant for *The Orange County Register*, showed that graphics departments have been reduced in size by more than 54% since 2011 — and nine of those newspapers eliminated their graphics departments altogether. [5] Of those that still have a graphics department left, they don't have enough staff to produce large explanatory graphics, let alone enough space in the newspaper to display that type of work. Mario García, world-renowned designer and CEO/Founder of García Media, noted:

This [reduction in explanatory graphics] is partly due to an economic situation that has rendered many media organizations in a state of crisis, with many newsrooms letting go of people, doing buyouts and overall reducing human resources. Unfortunately, while most designers know the

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[4] Lon Tweeten, e-mail interview, October 7, 2013.
[5] Jeff Goertzen, e-mail interview, October 10, 2013.

importance of visual storytelling, infographics and data visualization is an area where personnel are first identified as expendable.[6]

A reduction of explanatory graphic use in the past decade can be traced back to several other factors that slowly began affecting the news industry in negative ways, apart from the downward economic spiral of the late 1990s, which led to the aforementioned loss of advertisers and staff downsizing.

First, the dot-com bubble that spanned 1997-2000, financially affected news organizations that had initially invested in new technologies. Also, in the early-to-mid-90s, the cost of newsprint and magazine paper began its steepest rate of increase since World War II, leaving the news industry paying more for the cost of paper but not able to pass that expense to the readers. The cost of newsprint typically accounts for 20 percent of a newspaper's costs and is the second-largest expense after labor.[7]

The arrival of the Internet in the early 1990s made media newsrooms change their approach on how to cover the news as readers became more accustomed to being scanners, quickly skimming through news stories. To keeping in step with the new Web technology, newsrooms resorted to redistributing some of their resources to creating graphics for the Web and taking away resources from the print side. With the smaller window space available for content on the Web, and having to

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[6] Mario Garcia, e-mail interview, October 6, 2013.

[7] Michael Rozansky, "The Philadelphia Enquirer Newspapers And Magazines Feel Pinched By Paper," *The Philadelphia Enquirer*, February 27, 1995, http://articles. philly. com/1995-02-27/business/25706991_1_paper-producers-pulp-paper-week-paper-association (accessed August 24, 2013)

introduce it in segments instead of as a whole, graphics became much smaller and packaged differently than before. Plus, newspapers and magazines now had to compete with a medium that gave readers instant access to information, as opposed to waiting for the next day's paper or the next week's issue. Along with this came the rise of the "scanner," readers who became accustomed to digesting visual content in smaller parcels.

The loss of advertising as companies merged and consolidated ad purchases contributed greatly to the financial hardships that the news industry faced, which also led to staff downsizing, starting with the cuts to art departments. Newspapers such as the *South Florida Sun-Sentinel* and *The Miami Herald* have gone from having graphics departments that had up to a dozen infographic artists to presently just one or two, making the creation of explanatory graphics challenging.

In 2012, due to the lack of staff, the *Sun-Sentinel* stopped producing its popular News Illustrated Sunday full-page graphic — one of the last newspapers to dedicated such space solely to graphics on a weekly basis. *The Miami Herald* seldom produces large explanatory graphics since its graphics staff consists of just two artists relegated to handling smaller daily charts and maps, as well as interactive graphics.

Add to the mix the introduction of animated and interactive data visualization as a graphics medium becoming popular, which led to up-and-coming graphic artists creating them more routinely. Data visualization, however, relies heavily for the most part on being able to animate the data, creating imagery that stimulate and entertain the viewer. For the most part they are beautifully rendered,

but end up looking more like abstract pieces of fine art (Fig. 1) that take a lot of time to decipher and fail at what is the main purpose of an explanatory graphic: to communicate information clearly and quickly.
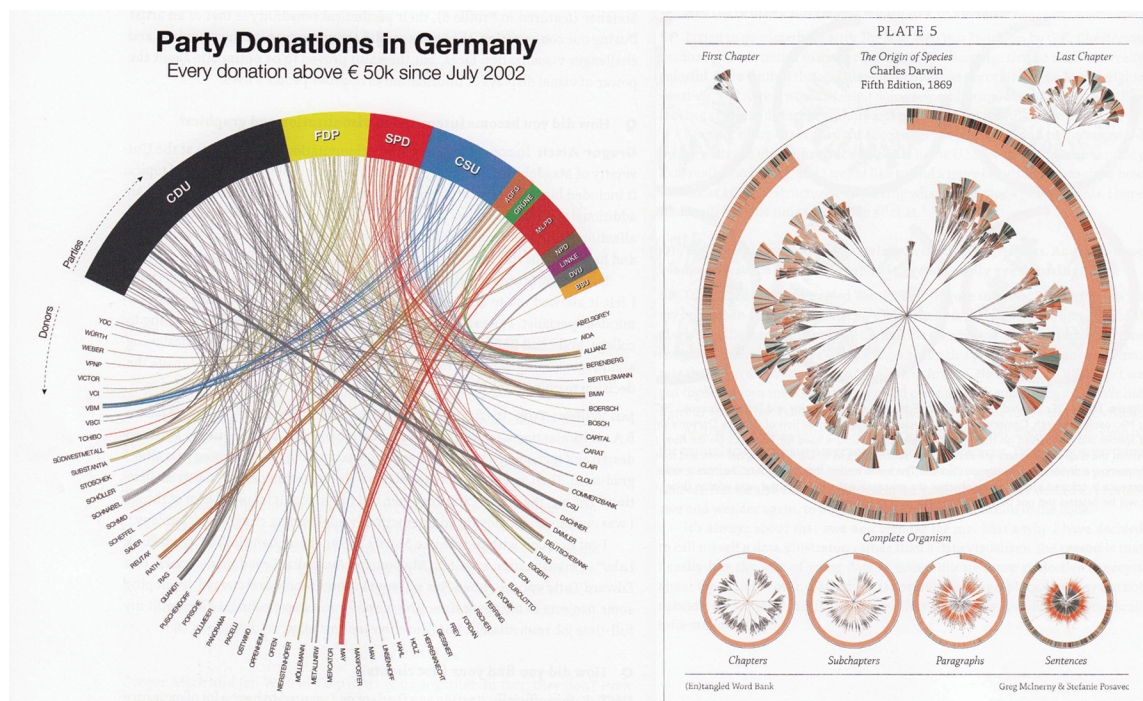
Figure 1. (left) Gregor Aisch, *2011, Party Donations in Germany*, and (right) Greg McInerny and Stephanie Posavec, 2009, in Alberto Cairo, *The Functional Art: An Introduction to Informa*tion *Graphics and Visualization*, 328 and 350.

Juan Velasco, the Art Director at *National Geographic* who worked at *The New York Times* from 1996 to 2001, believes that newspapers moved to data visualizations and away from explanatory graphics because of the influence of *The New York Times*, which slowly reduced the presence of large explanatory graphics, especially illustrated ones, during the 2000s. Data-driven and unadorned charts replaced them, and over time, this trend was widely imitated as illustrated graphics came to be seen as less "serious." Due to that trend, many newspapers stopped

hiring people who could draw well, or who can design complex infographics with multiple elements. Developers are preferred to personnel with artistic and design skills. Velasco believes that graphics are resolved as "data visualizations" even at times when an illustrated graphic would be better, due to lack of vision and skill.[8]

Jeff Goertzen adds that complicated immersive interactive graphics often don't get the traffic that justifies the amount of time spent to produce such graphics:

> The reading habits of people consuming information or news online are much different than the time that would be required to consume it in print. People scan and browse at a phenomenal pace. They don't stay in one place for long. If a graphic has too many layers of information to process, the reader will give up and move on to something else. Graphics online have to get to the point and be done with it. That's why many of the PDFs or jpegs that *The Orange County Register* posts online get better hits than the interactive counterparts. One also has to consider the content. An interactive map that ran in *The Denver Post* tracking the whereabouts of a mountain lion in a neighborhood got thousands of hits. It took an afternoon to produce that. Whereas an interactive graphic that took 100 hours to create about car and truck sales in Colorado got only a few hundred hits. [9]

Another example of an interactive explanatory graphic that speaks to the problem which data visualizations appeared Oct. 22, 2013 on *The Washington Post* Web site. "Preventing radioactive leaks at Fukushima Daiichi" by Patterson Clark and Emily Chow (Fig. 2) is an interactive graphic that covers content over 12
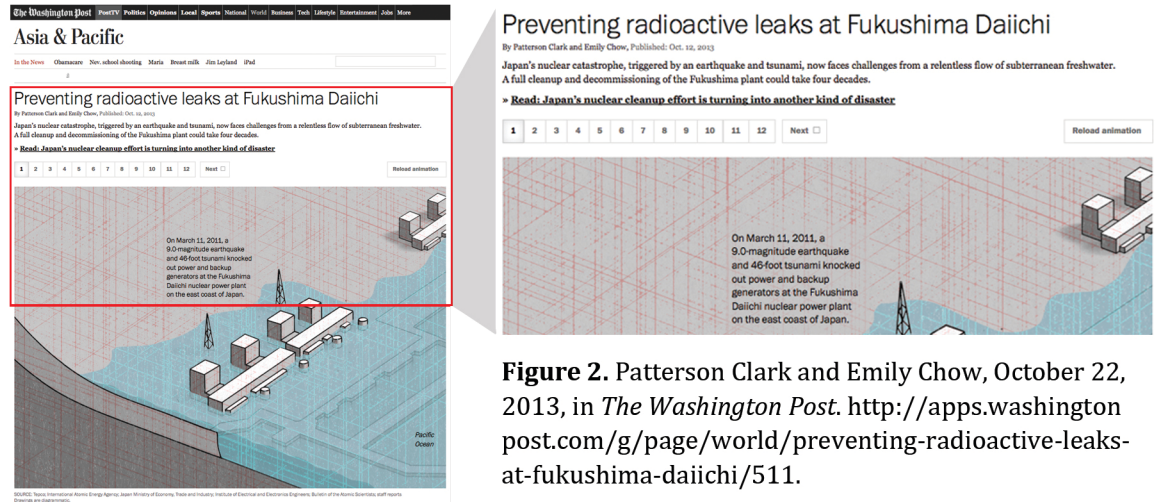
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[8] Juan Velasco, e-mail interview, Oct. 15, 2013.
[9] Jeff Goertzen, e-mail interview, October 10, 2013.

individual links, one after the other. At first glance the graphic overwhelms the reader by showing that the interactive graphic takes 12 pages of information to view, although the amount of data covered is not as extensive. At seeing these numerous links the reader may click away and move on. A traditional print graphic displaying all of the information at once allows the reader to see the scope of the content, and allows for more space to attract the reader with better design and illustrations.

Figure 2. Patterson Clark and Emily Chow, October 22, 2013, in *The Washington Post*. http://apps.washington post.com/g/page/world/preventing-radioactive-leaks-at-fukushima-daiichi/511.

Beyond data visualizations, some of the larger dailies have continued to display print explanatory graphics because they believe in their importance, but they do not publish them to the degree they used to because of the lack of resources. And certainly small to mid-size newspapers — as well as news magazines — have not been able to keep up, thus leading to an overall reduction of explanatory graphics in the U.S.

Yet in other parts of the world, such as some countries in Europe and Latin

America, large explanatory graphics are still widely used. In Germany, for example, there are several news organizations and many freelancers that still produce explanatory graphics regularly. One of those organizations is Golden Section Graphics, an agency specializing in infographics run by award-winning infographics artist and journalist Jan Schwochow. He has almost a dozen employees producing infographics, data visualizations, interactive and motion graphics for news, government and educational purposes. They also publish *In Graphics*, a bi-annually magazine dedicated solely to infographics — the first of its kind — full of explanatory infographics that were either previously published in newspapers and some created just for the magazine.

Mario García, CEO/Founder of García Media believes that the popularity of infographics in Germany also has a lot to do with their culture:

Germans are a disciplined and structured culture. While newspaper readership is showing signs of decline, as it is elsewhere, they are still more devoted newspaper and magazine readers there. Infographics do well in all print publications, and it may be this desire for a no nonsense straightforward, focused way of presenting information that makes them popular. *Bild am Sonntag*, the Sunday edition of *Bild*, the largest circulation daily in Germany, has very good use of graphics on a variety of subjects.[10]

Apart from Germany, there is also a lot of interest in explanatory infographics — and perhaps more in data visualization — in the Netherlands,

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[10] Mario Gacía, E-mail interview, November 3, 2013.

Holland, Belgium and Italy, countries in which infographics and visualization still have some precedents in the news industry, as stated by Alberto Cairo. [11]

In Latin America, graphics staffs have become smaller in the past few years because the economic crisis has struck everyone in every single country there. Yet in some of the larger countries, such as Brazil, they are still producing great work, according to Cairo:

> If one goes to the larger newspapers in Brazil, they still produce large infographics. Sometimes double truck [two-page spread] infographics on a regular basis, every single week or every couple of weeks. They produce quite impressive work. And the same can be said about most other countries in Latin America. So news organizations are suffering, but they are enduring the hardship of the crisis. [12]

Alberto Cervantes, informational graphics designer at *The Wall Street Journal*, believes that in South America and Spain and other countries in Europe, journalism is much more visual:

> Over there people read less than in the U.S. Also, in the United States, there are many more news wire agencies processing and delivering news and data. In Latin America and in Spain, newspapers have to take up more of that load of information and communicate it in different ways to make it interesting, informative and yet fun for readers.[13]

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[11] Alberto Cairo, audio interview, October 13, 2013.
[12] Alberto Cairo, audio interview, October 13, 2013.
[13] Alberto Cervantes, e-mail interview, October 9, 2013.

News design industry experts also point to newspapers in the Persian Gulf region, such as *Times of Oman*, *Al Bayan*, and *Gulf News* setting championing the use of large explanatory graphics, as well as some Asian newspapers like Hong Kong's *South China Morning Post*.

But in Spain, the situation is much more dire as infographics in general have mostly disappeared from newspapers and magazines. And the economic crisis has hit harder as the number of newspapers in circulation are dwindling. According to Cairo, there are conversations going on about that flagship newspapers of the news industry such as *El Mundo* may be sold in the future or may disappear in the near future.

As explanatory graphics seem to still have a good shelf life in other parts of the world, the future appears grim for print explanatory graphics in the U.S. But this form of visual storytelling, dating back hundreds of years, can remain a useful tool in disseminating information to the masses. Although written language has been around for thousands of years and has evolved mightily, the purest form of visual communication has always been through art, whether as symbols or illustrations. The earliest form of informational graphics can be traced back to late Stone Age cave paintings circa 30,000 B.C., when humans during the Paleolithic period began painting animal portraits and hunting scenes on cave walls in the south of France. But explanatory graphics' origins date back closer to 1350, when Medieval French philosopher Nicole d'Orseme (1320-1382) created one of the first graphs to help

explain how to measure a moving object. [14] It is Italian renaissance painter, sculptor, architect and mathematician Leonardo da Vinci (1452-1519) who is widely known as the true father of explanatory graphics, blending written instructions with illustrations to create a comprehensive guide of the human anatomy (Fig. 3).
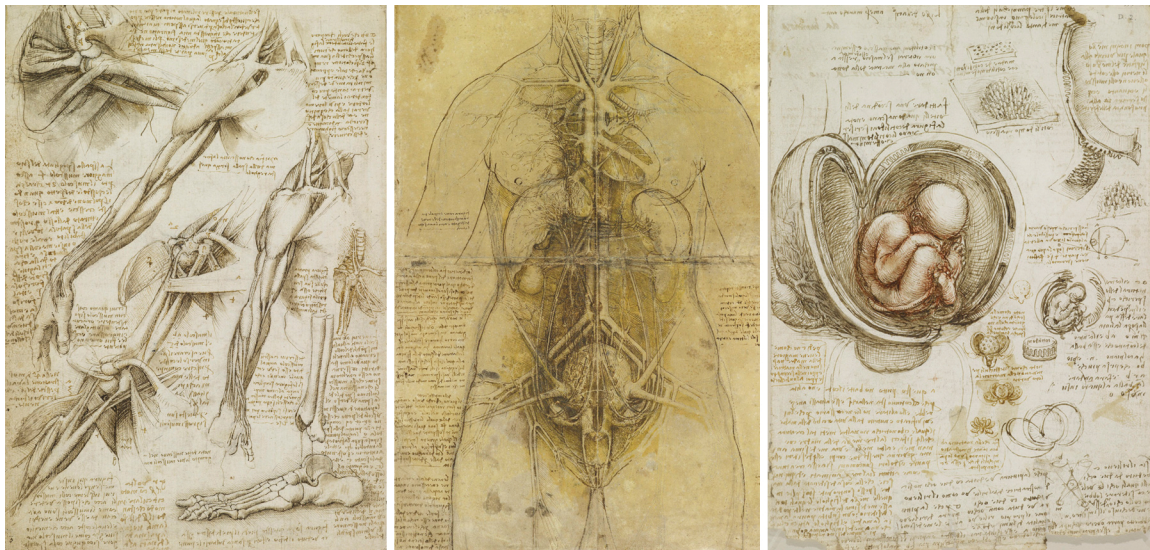
Figure 3. Leonardo da Vinci, *Myology of Shoulder Region*, *Genito-Urinary System*, *Embryology*, in Leonardo da Vinci, *Leonardo's Anatomical Drawings,* (Mineola, N.Y.: Dover Publications, 2004), 20, 55 and 57.

Others who laid the foundation for the use of explanatory graphics were William Playfair (1759-1823), Charles Joseph Minard (1781-1870), and Florence Nightingale (1820-1910). [15] They used what would become traditional forms of infographics (charts and maps) to explain information to readers. Playfair was a Scottish engineer and political economist credited with inventing the bar chart and pie chart, which he used to better communicate data that, at the time, was traditionally presented in tables. His graphics published in 1786 in *The Commercial*
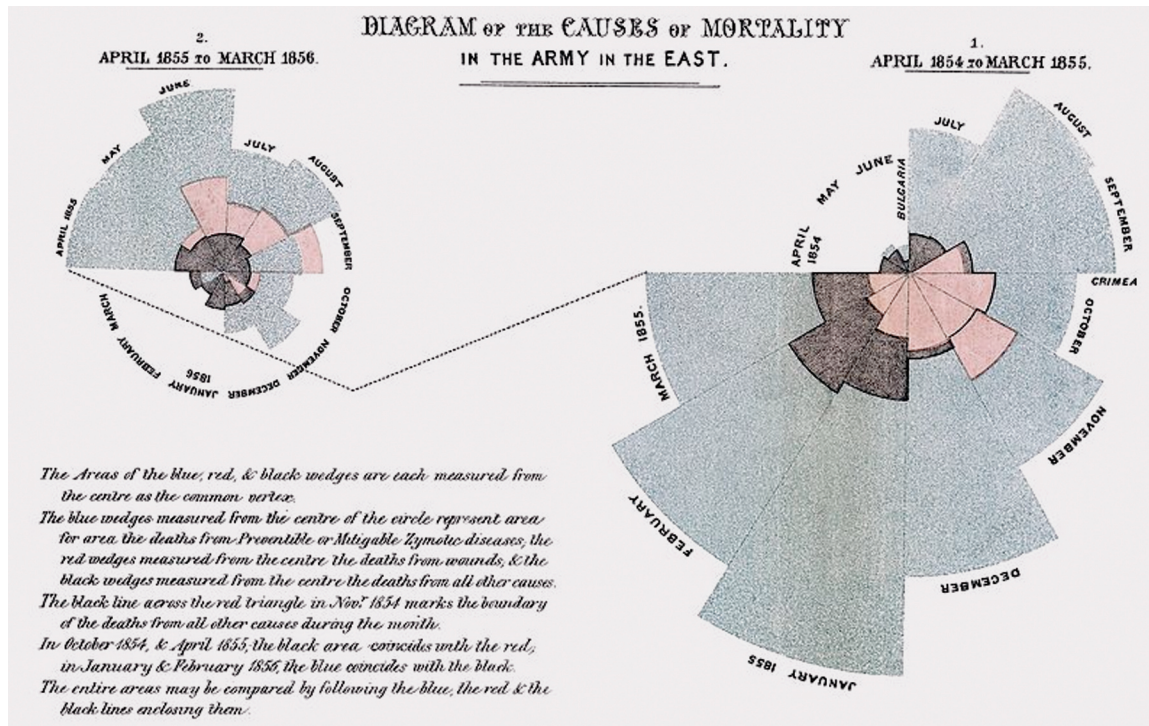
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[14] Mark Smiciklas, *The Power of Infographics: Using Pictures to Communicate and Connect With Your Audiences* (Indiana: Que Publishing. February 2013), 8-9.

[15] Smiciklas, 8-9.

and Political Atlas that showed data displayed over time and various other charts

— 43 in all — has been described as the first major work of writing to contain

statistical graphs. Minard, a civil engineer from France, is famously known for his

flow map published in 1869 illustrating the causes of Napoleon's failed attempt to

invade Russia from 1812-1813 (Fig. 4).

Figure 4. Charles Minard, *1869, Carte figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813*, in Edward Tufte, *The Visual Display of Quantative Information,* 2nd Ed. (Connecticut: Cheshire Press, 2007), 41.

And Nightingale, the founder of modern nursing, also was a celebrated

statistician who combined stacked bar and pie charts to illustrate the monthly

number of casualties and causes of death during the Crimean War to convince

Queen Victoria to improve conditions in military hospitals[16] (Fig. 5).

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[16] Smiciklas, 9.

Figure 5. Florence Nightingale, 1858, *Diagram of the causes of mortality in the Army in the East,* in Jason Lankow, Josh Ritchie, and Ross Crooks, *Infographics, The Power of Visual Storytelling* (New Jersey, John Wiley & Sons, 2012), 15.

But explanatory graphics remained mostly obscured to the public until *National Geographic* magazine published its first supplement in the May 1918 issue titled *The Western Theatre of War*, which showed the area of war in France and Belgium during World War I, and served as a reference for overseas military personnel and soldiers' families. On some occasions, the National Geographic Society's map archives had been used by the U.S. government in instances where its own cartographic resources were limited.[17] *Fortune* magazine also became one of

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17 Contours, The official blog of Nat Geo Maps, entry posted Dec. 17, 2009. http://natgeomaps.blogspot.com/2009/12/maps-of-news-december-2009-edition.html (accessed October 15, 2013).

the most well recognized early purveyors of maps and charts in editorial use during the late 1930s and early 1940s. [18]

Explanatory infographics were gaining steam from the 1970s through 1990s as they became widely used in mainstream news publications like *The Sunday Times* (UK*), TIME* magazine and *USA Today* to simplify data and make complicated issues and news stories easier to understand for readers. The graphics created by artist Peter Sullivan (1932–1996) for *The Sunday Times* during those three decades, and the first books written by him specifically about newspaper graphics — *Newspaper Graphics* (1987) *and Information Graphics in Colour* (1993) — were a factor in encouraging newspapers to use more infographics. So much so that, at the annual Malofiej competition for information graphics in Pamplona, Spain, the highest prize is named the Peter Sullivan award.

The staff artists at *USA Today*, which opened its doors in 1982, also helped established using graphics to make information easier to comprehend. Especially noteworthy were the colorful weather maps created by George Rorick who pioneered the use of graphics as an important component of news communication. He is best known for his weather maps, which revolutionized how audiences read weather information, and is probably the most imitated news infographic. [19] However, the newspaper was criticized for creating infographics that some perceived to emphasize entertainment over data, which Edward Tufte (1942-), the

[18] Jason Lankow, Josh Ritchie and Ross Crooks, *Infographics: The Power of Visual Storytelling* (New Jersey: John Wiley & Sons, Inc. 2012), 16.

[19] Venkatesh Rajamanickam, "Infographic Seminar Handout" (lecture, National Institute of Design, Ahmedabad, October 10, 2005), 8.

famed American statistician and professor emeritus at Yale University, coined "chartjunk"[20] to refer to graphics that are visually appealing to the point of losing the information contained within them. Tufte attacked the infographics tradition that was taking shape in the United States, especially those in *USA Today* and *TIME* magazine. To make his case, Tufte chose a *TIME* chart (Fig. 6) designed by renowned artist Nigel Holmes (1942-), the magazine's art director at the time, as an example of what he detested in infographics at the time:

> Lurking behind chartjunk is contempt both for information and for the audience. Chartjunk promoters imagine that numbers and details are boring, dull, and tedious, requiring ornament to enliven.[21]

Figure 6. Nigel Holmes, 1982, chart for *USA Today*, in Alberto Cairo, *The Functional Art: An Introduction to Informa*tion *Graphics and Visualization*, (California: New Riders, 2013), 63.


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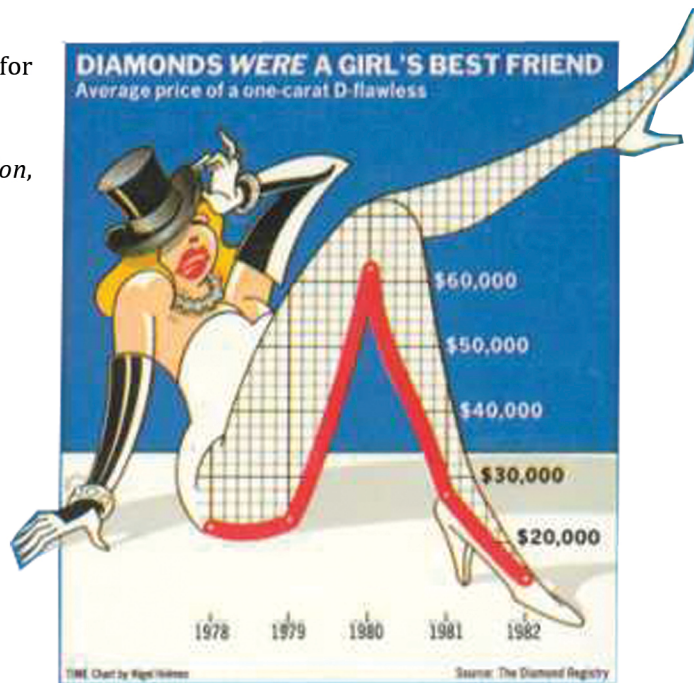
[20] Alberto Cairo, *The Functional Art: An Introduction to Information Graphics and Visualization* (California: New Riders. 2013), 62.

[21] Alberto Cairo, 62.

Holmes himself said that the chart chosen was not one of his most inspired works, but also contended that Tufte chose one graphic among hundreds to make his case. Two experts on opposite ends fueled the debate between Tufte and Holmes, but the expansion of infographics as a proper news medium came about as graphic artists found a balance between the two extremes — uncluttered content and great visuals. Many graphic journalists such as Charles Apple believe the work done at *USA Today* and *TIME* back then was the foundation that inspired them to explore the field. Apple writes that Tufte preached content first; Holmes advocated a more visual, illustrative approach, and that the best practitioners of the art bridge the gap between the two. Apple also cited the "groundbreaking stuff" *USA Today* did in the 1990s which was very illustrative a la Holmes, and that it was easy to make fun of the "USA Snapshot" graphics, which were often empty of important content. But Apple believes the larger work that *USA Today* did — specifically the explanatory graphics that Jeff Dionise did at the bottom of the weather page (Fig. 7) — expanded the field for other artists.[22]

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[22] Charles Apple, e-mail interview, October 8, 2013.
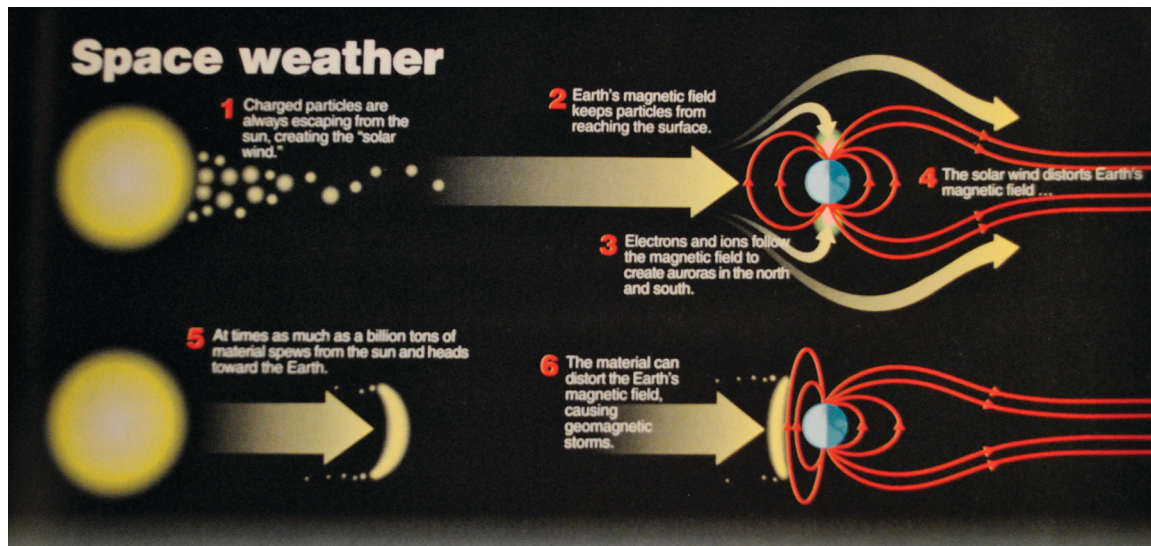
Figure 7. Jeff Dionise, Space wreather for *USA Today*, in USA Today, *The Weather Book* (New York: Vintage Books, 1997), 17.

Other events that helped infographics become recognized as an official news resource were the creation of organizations developed to further the use of graphics and the advent of desktop publishing. John Grimwade, Graphics Director at *Conde Nast Publications*, and a cotemporary of Tufte and Holmes, believes that what led to a higher evolution of infographics during the 1990s was improved technology and supporting organizations like SND and Malofiej, which set a high standard for infographics.[23]

Society for News Design (SND), a U.S.-registered non-profit international organization for news media professionals and visual communicators who create print/Web/mobile publications and products, was founded in 1979 as the Society for Newspaper Design. It currently has about 1,500 members worldwide and hosts an annual Best of News Design competition open to newspapers and magazines

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[23] John Grimwade, e-mail interview, October 6, 2013.

from around the world, as well as a yearly conference (rotating through various cities) that brings in visual journalists from all over the world.

In 1992, the Spanish branch of SND founded the annual international competition for print and online information graphics, Malofiej, named for Argentinian infographer Alejandro Malofiej (1938-1987). The Malofiej competition attracts entries from around the world, especially Latin America and Europe, and is seen today as the pre-eminent infographics competition.

While SND and Malofiej were helping advance the use of infographics, the arrival of desktop publishing in the late 1980s and early 1990s helped make the production of them easier, faster and more colorful. Software illustration programs such as Aldus Freehand, Abobe Illustrator and Photoshop, helped artists create a complex graphic in one day that before would have taken a week to produce using paper-cutting and pasting techniques. And newspapers invested in production and press technologies that worked hand-in-hand with this new software, printing more detailed and colorful graphics than they had in the past.

Alberto Cairo, author of *The Functional Art: An Introduction to Information Graphics and Visualization*, and a multimedia professor at the University of Miami, also attributes the rise in explanatory graphics to the first Iraq War in 1990. He stated that during that conflict, because there weren't photographers embedded with the troops during the first Iraq War as they do so now, many news organizations had to find a way to bring visuals into the reporting because photos were not available. Because of this, many newsrooms had their graphics staff create illustrations of how the soldiers were outfitted, what aircraft and tanks were being

used, and other similar infographics. It was the only way at that time to cover the news visually.[24]

Juan Velasco, Art Director of *National Geographic* magazine, agrees:

In 1990-91, the Gulf War starts an avalanche of large information graphics with war maps, weaponry diagrams and so on, like never seen before. Many newspapers are using color for the first time and are motivated to use large graphics. At the same time, Spanish newspapers — new like *El Mundo* and *El Sol,* and existing like *El Pais*) start a trend of large quality graphics that receives numerous international awards and is quickly imitated.[25]

During the 1990s and 2000s, large daily newspapers such as *The Detroit News, The Miami Herald, New York Times* and *Los Angeles Times*, as well as magazines like *U.S. News & World Report, TIME, National Geographic, Fortune* and *Newsweek,* widely used explanatory graphics, and their art departments were staffed with layers of editors, artists and researchers dedicated to producing them. Explanatory graphics became an essential part of the newsroom's toolkit — along with words and photographs — for telling stories clearly. In an ever-increasing visual world, this type of infographic conveyed information to readers clearer than only words could, and did it by engaging the reader with finely rendered artistic content.

An example of how an explanatory infographic helps explain news events better than mere words was *The Miami Herald* graphics coverage of the Elián

[24] Alberto Cairo, audio interview, October 13, 2013.

[25] Juan Velasco, e-mail interview, October 15, 2013.

Gonzalez raid in Miami on April 22, 2000. In the pre-dawn hours of that day, eight U.S. Border Patrol agents approached a house where a young Cuban boy (Elián), who had recently arrived on a raft, was staying with U.S. relatives. The agents forcibly entered the home using pepper spray and mace against those who attempted to interfere, and took Elián away passing an angry crowd outside. In the chaos that ensued, a reporter and photographer were able to enter the house and see what occurred within. The information was used to create a breaking news explanatory graphic that detailed the step-by-step movement through the home of the people involved in the raid using a cutaway representation of the home that had been previously created days before. The infographic was part of *The Herald*'s Pulitzer prize-winning coverage of the story. Beyond the article, the graphic visually portrayed the chaos that occurred and how the events unfolded inside (Fig. 8). [26]

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[26] Herald staff reporters, "How It Happened — Lightning Move Took Agents Just 154 Seconds," Pulitzer.org, April 23, 2000, http://www.pulitzer.org/archives/6399 (accessed June 24, 2013).
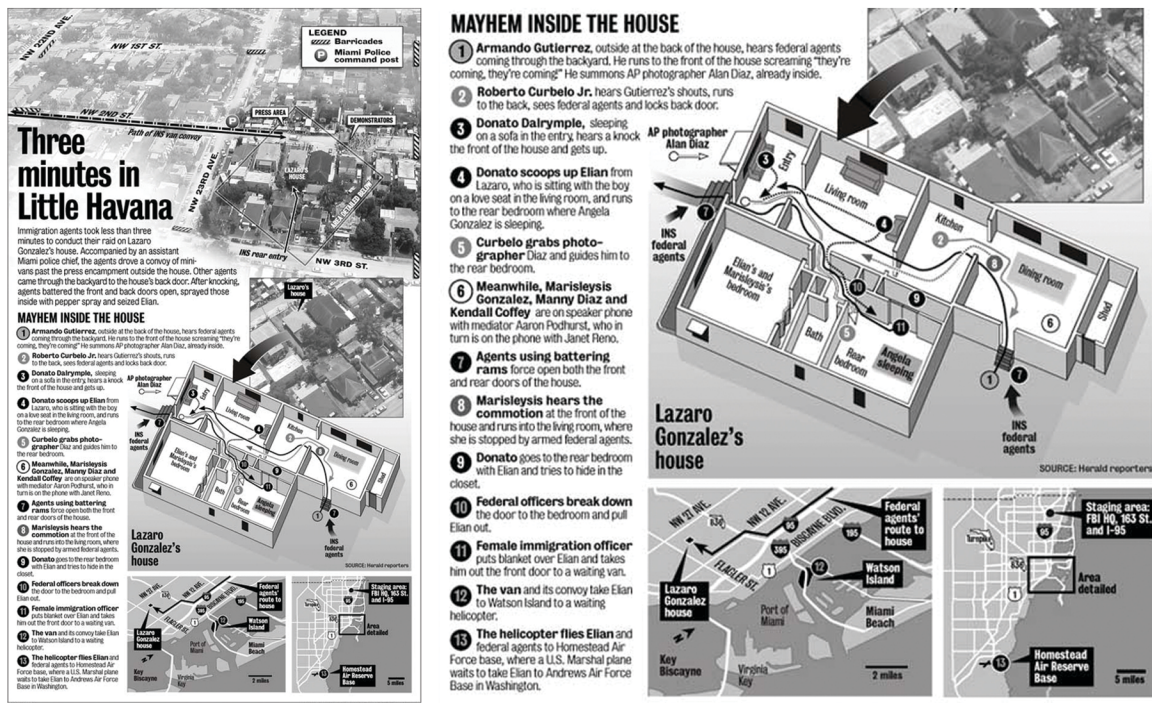
Figure 8. Hiram Henriquez and Jere Warren, *Mayhem Inside the House*, 2000, Pulitzer, Columbia University, New York, N.Y. Pulitzer.org archives, JPG, http://www.pulitzer.org (accessed Oct. 1, 2013)

There are many other examples of well-conceived and successful explanatory graphics that have been present in the past 30 years surrounding local, state and national stories. In the aftermath of Hurricane Andrew (Aug. 24, 1992), *The Miami Herald* graphics coverage was unprecedented for a story of such magnitude and force. Graphics coverage not only helped readers cope with devastation, but also showed how lax zoning, inspection and building codes had contributed to the destruction, which led to a Pulitzer Prize for public service. Newspapers around the country have emulated this sort of coverage during similar events such as Hurricanes Katrina and Wilma in 2005. This infographic reporting helped the readers understand the issues facing them and helped forge a bond between the newspaper and the community during a troubling time.

Another example of excellent explanatory graphics was *The New York Times,*

Associated Press and KRT News graphics coverage of the events of Sept. 11, 2001, when a series of four coordinated terrorist attacks were launched by the Islamic terrorist group al-Qaeda against the United States in New York City, Washington D.C., and Pennsylvania. Their graphics in the following days, weeks and months covered every detail of the destruction and its aftermath. *The New York Times* was awarded a Pulitzer for public service for "A Nation Challenged," a daily special section covering the aftermath of the September 11 attacks, the war in Afghanistan, and America's campaign against terrorism. And the wire graphics, at the time staffed with many talented infographic artists, provided content to newspapers across the country that may not have had readily available access to the information or a graphic staff to produce such graphics. They similarly helped the community and readers and helped forge a bond between newspapers and their audience.

There are other examples of explanatory graphics going beyond informing the readers of a news event and having a more important effect on outcomes beyond its intended use. An example of this is the 1990 SND Gold-winning infographic, "Four Witnesses, Four Different Versions of What Happened," by Jackson Dykman and Reginald Myers, at the time graphics artist for *The Miami Herald*.[27] The illustrated graphic, published on Nov. 15, 1989, depicted various possible scenarios of the fatal shooting of a motorcyclist (and the related death of his passenger) by a Miami Police officer, an event that led to three days of civil

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[27] The Society of Newspaper Design, *The Best of Newspaper Design*, *11th Edition*, (Orlando: SND, 1990) 190.

unrest in Miami. Sections of the graphics would eventually be used in court during

the State of Florida vs. William E. Lozano, the police offer involved. Much like *The*

Herald's graphics coverage of Hurricane Andrew that exposed faulty building codes

and practices and led to new stricter laws, parts of this graphic were used by the

Defense to sway the jurors to acquit Officer Lozano of manslaughter, showing that

Lozano shot the motorcyclist in self defense. [28]

Apart from how explanatory graphics help readers clearly understand

complicated information, the popularity of infographics overall should provide an

indication that these explanatory infographics should continue to be used as a viable

source of communication. According to *Graphs.net*, research shows that the search

volume for "Infographics" has increased by 800% between 2010 and 2012. There

has been an explosion of popularity with visual content — from technologies like

Postano to platforms like *Pinterest* — leading to over 15 million *Google* search

results for the term 'Infographic' and production of infographics increasing by 1%

every day.[29] Gathered by *Nowsourcing*, a social-media marketing company, data

shows that infographic posts dwarf traditional posts when it comes to sharing on

social networks. The most popular topics for infographics include: business,

[28] MarkSeidenLaw.com, "Attorney Mark Seiden was directly involved in the successful outcome of the following cases." http://markseidenlaw.com /representative_cases.html

[29] Graphs.net. "Why Infographics are So Popular." http://www.graphs.net/201308/ why-infographics-are-so-popular.html (accessed June 12, 2013).

technology, social media, the economy and health. [30] Statistics from the social network Digg, reveal that since 2007, Infographics on Digg have increased by 250 times. Visual mediums aren't going anywhere and their popularity will continue to grow over the next few years.

But the problem with many of the infographics on the Internet is that they are redundant in their visual style, and follow a design philosophy that brings back Tufte's argument about style over substance. Present-day infographics found on the web routinely have a vertical structure with multitudes of charts and/or maps thrown together, therefore providing a lot of data in a small space without any clear sense of hierarchy or order other than top to bottom (Fig. 9). Unlike explanatory graphics that guide the reader through the content with varying illustrations and/or charts, today's Web graphics generally follow the same structure regardless of content. Yes, infographics are becoming increasingly popular, but they are doing so by sticking to the same format and regressing to a style that explanatory graphics had long evolved from.

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[30] Mashable.net. "Rise of Infographics: Marketing in the Social-Media Age. http://mashable.com/2013/01/26/infographics-marketing (accessed June 12, 2013).

Figure 9. Adam Welsh, March 30, 2012, in *Social media Explorer*. http://www.socialmediaexplorer.com/digital-marketing/marketing-with-images.

But this popularity of infographics suggests that most readers agree the way they prefer to read their news is with articles that have explanatory graphics or just those graphics on their own. The results of a Fall 2013 survey of 100 U.S. Citizens, ages 18-80, that included questions about the use of infographics and explanatory infographics helps support the theory that most readers prefer their news stories with supporting visuals such as explanatory infographics. The survey showed:

- 76% of respondents were familiar with the term infographics.

- 74% said they don't come across explanatory graphics.

- 78% included reading the news on a mobile device.

- 78% preferred reading news stories that had accompanying infographics.

- 81% stop to read an explanatory graphic when they come across one.

- 92% said an explanatory graphic helps them understand the story better.

When the figures are broken down by age groups, the following results still

show that most readers think highly of explanatory graphics:

- 77% ages 18-24; 63% ages 25-34; 92.3% ages 35-49; and 72% ages 50+

preferred reading news stories that had an infographic.

- 71% ages 18-24; 88% ages 25-34; 100% ages 35-49; and 83% ages 50+

stop to read an explanatory graphic when they come across one.

- 88% ages 18-24; 88% ages 25-34; 100% ages 35-49; and 94% ages 50+

said an explanatory graphic helps them understand the story better.

James Abbott, a scientific illustrator with over 50 years at two universities notes several reasons why an explanatory infographic is a better form of communication that words alone: No paragraph no matter how well written can replace a well thought out illustration. With infographic illustrations several aspects of information can be seen at one time; in a paragraph only a few words are perceived at a time. Illustrations transfer knowledge even pictures rarely do.[31]

If explanatory infographics are to rebound in print news media, what is unfolding in a newspaper on the West Coast might hold the key. In the summer of 2012, a company led by two East Coast investors — Aaron Kushner and Eric Spitz — bought *The Orange County Register* amidst print journalism's continuing decline. Unlike the industry's usual solutions, which consist of layoffs, emphasizing the Web over newsprint, and drastic cuts to print editions, the two investors did the opposite of what nearly all papers around the country are doing. Because the online version of the newspaper wasn't making enough profit to justify its expense, they closed

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[31] Becky Fogel, "Show, Not Tell: The Rise of the Infographic." *Science Friday*, Oct. 18, 2013. *http://sciencefriday.com/blogs/10/18/2013/show-not-tell-the-rise-of-the-infographic.html?series=20* (accessed Oct. 18, 2013).

down the paper's large number of blogs and Internet reporters, and its iPad edition, and routed all resources back into the print product.

In an article in *The Orange county Register* regarding the state of the newspaper since Kushner and Spitz took over, it states that industry experts have called this a radical experiment, but that the two investors see it "as playing to the strengths of newspapers: The drawing power of quality local journalism, of striving to cover a community top to bottom and of making sure subscribers know they are valued. That must be a newspaper's contract with its community, they say."[32]

The last year has seen 350 new workers added (including 175 in the newsroom), increased content in the daily newspaper by 71 percent and the weeklies by 162 percent, reopening of the Washington bureau, expanding the community editions to full-size broadsheet format, starting three magazines, and, launching the *Long Beach Register*, the company's third community daily and the first outside Orange County.

As part of its expansion, *The Register* increased its use of large explanatory graphics, up to several a week. To do this, the graphics staff was increased to eight artists, including adding well-known talent such as Charles Apple, Max Henderson, Jeff Goertzen and Fred Matamoros, as well as a full-time graphics researcher. In addition to the staff, the newspaper hires a number of temps and freelancers to fill in the gaps in order to produce the many quarter-page, full-page, and double truck (two-page spread) graphics. And the majority of large graphics only appear in PDF

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[32] Mary Ann Milbourn, "Register owners reflect on their first year." *The Orange County Register*, July 25, 2013. *http://www.ocregister.com/articles/spitz-518480-kushner-subscribers.html* (accessed Oct. 9, 2013).

form online, as opposed to any multimedia work. As an example of how invested the newspaper is related to explanatory graphics, *The Register* ran a continuous six-part series on Native Americans of California from September 22-26, 2013 (Fig. 10).
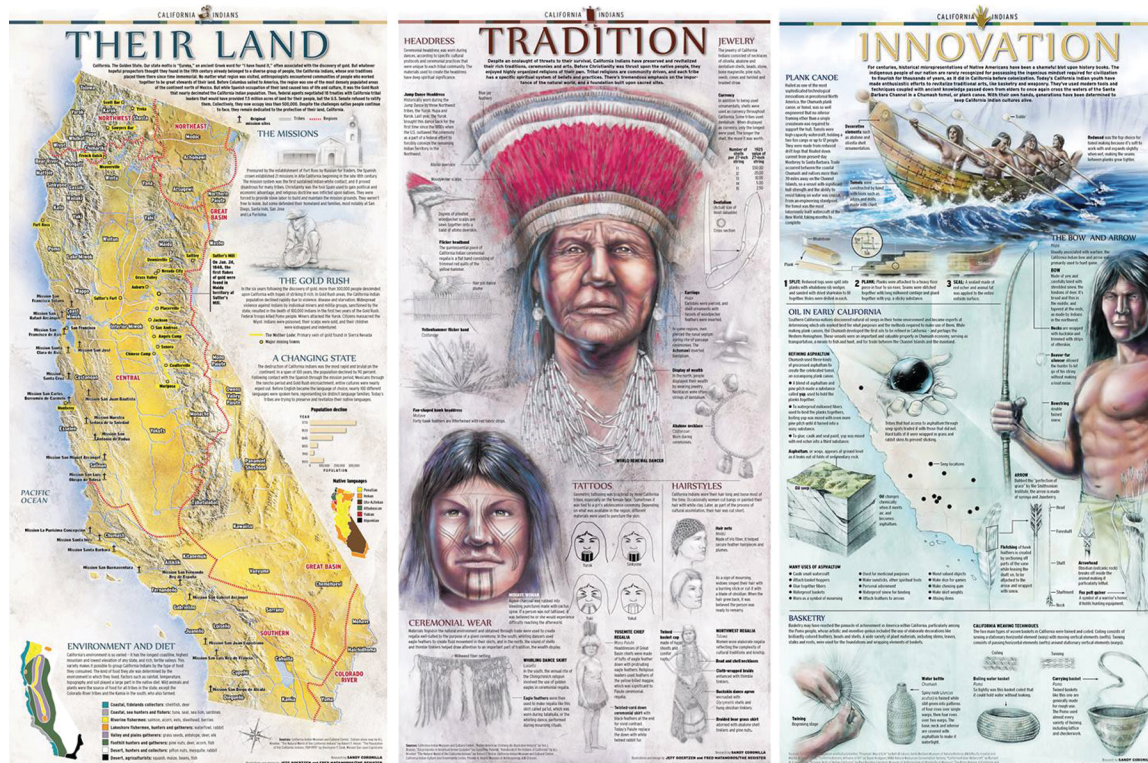
Figure 10. *The Orange County Register* staff, Sept. 2013, *Native Americans of California: Their Land, Tradition,* and *Innovation,* from the *six-part series appearing in The Orange County Register.*

Another graphic, one that got many readers' attention, was published on September 1, 2013 in a special edition of the newspaper's Sunday High School Arts section devoted to high school bands. The section included portraits and an explanatory graphic depicting how a marching band works. Because of *The Register's* pay wall, most people couldn't see the stories or graphic without paying, and certainly no one could pass along links via social media. So instead, they passed links to a blog piece written by Charles Apple about the graphics coverage.

Consequently the blog went viral, because as it turns out, the national community of high school bands was very hungry for coverage. Since then, Apple has been inundated with congratulations and appreciative notes from band directors — and especially band parents — from around the country. Picking the right topics for explanatory graphics such as this one helps the newspaper get in touch with their community at a personal level.

Apple, the Focus editor for *The Register,* creates pages that are graphically designed around special topics — for example, a page on the ongoing controversy over the Washington Redskins mascot, including a look at college mascots that were changed over the past 30 years and the long, long racist history of the man who originally owned the Redskins. Apple says that his editors express how the focus pages are getting tremendous feedback, and meets people in the community who gush over how much they like the Focus page, going into specific examples of pages they liked which shows the visual approach is working. And although it is difficult to make a direct correlation between the newspaper's success and explanatory infographics, *The Register's* newsroom appears to believe in using them as a communication tool because of its extensive use of the medium.

But if most newspapers continue to poorly staff their graphics departments or invest more heavily on Web over print, there are still many ways that they can publish explanatory graphics using proper planning and topic selection, and using alternative production resources such as freelance graphics journalists.

In a low-staffed graphics department, planning ahead on what stories may appear in the news is a way to create explanatory graphics without the pressure of

deadlines. A good example of this was a two-page spread explanatory infographic on oil and gas drilling produced by one artist on the *South Florida Sun-Sentinel* staff in March 2006. Since at the time the issue of drilling always came up every legislative session at the beginning of each year, the artist started researching, illustrating, and designing the presentation three months before. Using any "down time" available between other daily assignments, he slowly pieced together the elements that would create the final piece. A reporter was assigned to write the story the week before the news broke, and when it did, the *Sun-Sentinel* had an infographic (Fig. 11) that visually explained the details of the issue and was right on time with its publication. And this wasn't the first time this type of planning had paid off — a similar graphic on drilling in Alaska's National Wildlife Refuge had appeared the previous year using the same formula. Being ahead of the story when possible in this manner is a good recipe for covering any news, and creating explanatory infographics of such magnitude in a timely manner creates confidence in your audience that the newsroom can deliver a thoroughly reported story.
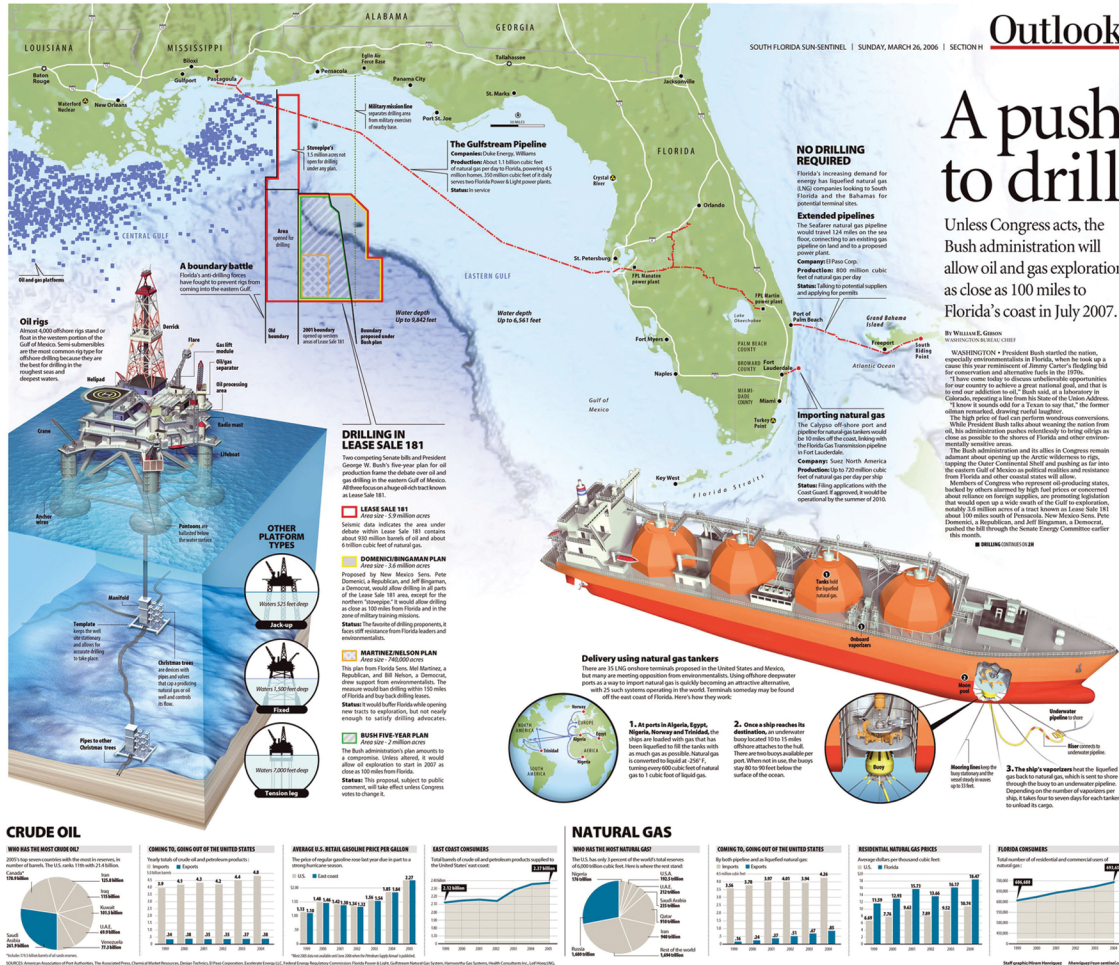
Figure 11. Hiram Henriquez, March 2006, *A Push to Drill*, *South Florida Sun-Sentinel,* private archives.

Proper topic selection is also important in deciding what explanatory graphics should be produced. Because resources are limited in many newspapers, newsrooms should select topics that they strongly believe will have the most interest for their audience, but also have "long legs." Stories with long legs are usually referred to as "evergreen" stories, which cover subjects that seem to reappear in the news — such as oil drilling — so that the effort and time placed into producing them gets the most play and make them cost effective. Portions of those "evergreen" graphics can then be repurposed and used in smaller graphic

presentations later as the story resurfaces. Many stories that fall in this category are related to environmental (tornados, hurricanes, rising seas, sink holes), political (elections, redistricting), and social issues (health care, gun control, education) — all topics important to most readers.

Finally, using alternate resources to produce explanatory infographics such as freelancers can lead to a successful partnership: the freelance artist produces and researches the content, and the newspaper provides the space and produces the online presence they desire. Although there is a cost associated with hiring a freelancer, it is minimal compared to hiring an artist full-time, and with the aforementioned proper planning is not an expense they have to incur regularly. When hiring freelancers, newsrooms should hire artists who not only excel at design, illustration and charting, but also have a strong journalism or reporting background. Those skills and experience will assure that the explanatory graphic presentation will have both visual and journalistic value, and most importantly, be accurate.

An example of a graphic created by a freelancer and then printed by a newspaper, was one published by *The Miami Herald* on September 20, 2013. The full page graphic titled "A vulnerable Lake Okeechobee," (Fig. 12) showed how Florida's Herbert Hoover Dike is susceptible to failure and the state's efforts to repair it. The print graphic, which uses 3D illustration, maps and charts, took two months to produce, and a Web version *(http://www.miamiherald.com /2013/09/20/3639411/ a-vulnerable-lake-okeechobee.html)* was created by *The Herald*'s small graphics staff in a few days. The multiple sections of the infographic were designed so that they

could be split apart and used for future potential stories, such as any possible flooding around the lake, any map updates of sections of the lakes that have been repaired, or show readers once again how water seeps through the dike to cause any flooding that may occur.
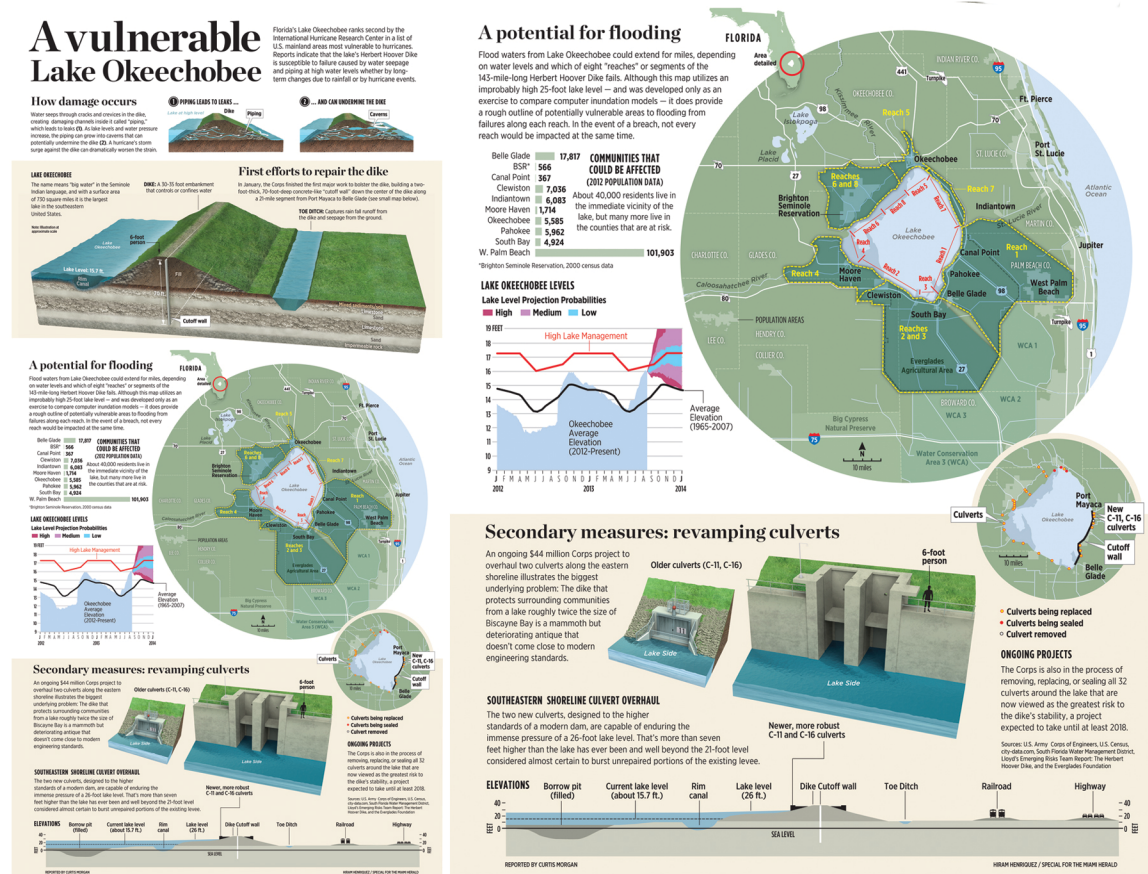
Figure 12. Hiram Henriquez, September 2013, *A vulnerable Lake Okeechobee*, *The Miami Herald,* private archives.

The print graphic was published, and its Web version posted a month after the original story was published, and the findings of reader interest are surprising. From August 16 to September 19, 7,058 people viewed online the original story without a graphic, yet once the interactive graphic was posted, 13,670 people viewed the graphic at the story level from September 20 to October 31; people who

viewed the standalone PDF version was 52. The data suggests that including the graphic drove online traffic to the story.

Another explanatory graphic appeared in *The Miami Herald* in December XX, 2013, related to effects of phosphorus and other unnatural nutrients in South Florida waters on its ecosystem. Using charts, a map, and 3D illustrations, the graphic shows how Phosphorus moves through the rivers and canal system, how it changes the ecosystem, and how it may affect the communities near these waters.

Will have info like the previous story on how readers reacted; user clicks.

Today's news audience is already predisposed to accepting their information in a visual form — whether in print or online — and seeing explanatory graphics in their every day lives, such as in simpler forms like airplane emergency pamphlets, instructions on how to build furniture, or instruction manuals. Using explanatory graphics to help explain the news is a logical tool for communicating the news. And with the added availability of an online presence, explanatory infographics and their content can be shared worldwide. An example of how infographics online can help spread information is Chicago-based infographic creator Lab42, which cites that infographics created for their clients have generated over 5,000 tweets, 2,000 Facebook 'Likes', and hundreds of links back to their website.[33]

Explanatory infographics' combined use of images, words and data operates as a hybrid medium of both the verbal and the visual. They offer the news content gatherer — whether a reporter or graphic artist — the greatest opportunity to

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[33] Scott Winterroth, "The case for Infographics." *Word Press for Public Relations*, August 21, 2011. *http://wpforpr.com/2011/08/21/the-case-for-infographics/* (accessed Nov. 2, 2013).

effectively communicate with the reader and draw them into the story. It has a long history of communicating with audiences, and has evolved to its present form and will continue to evolve — that is, if it is given the opportunity to flourish in newsprint.

The demise of newspapers and news magazines, and print in general, has been reported for quite a while now. And advertising revenue, one of the most important aspects of the newsprint industry, is near an all-time low (Fig. 13). But as Derek Thompson of *The Atlantic* states, this revenue loss shouldn't be read as a "harbinger of the death of newspapers… but as a correction, and adjustment to the new role of print media in an increasingly online-centric world."[34] At $20 billion in revenue, newsprint still has a way to go before it is written off completely as a communication medium. And what is occurring at *The Orange County Register* might be a starting off point to a rejuvenation of the newspaper industry — and a renaissance for explanatory graphics.

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[34] Vlad Savov, "The decline of print visualized: US newspaper ad sales falling off a cliff." *TheVerge.com*, March 20, 2012. *http://www.theverge.com/2012/3/20/ 2886806/the-decline-of-print-visualized-us-ad-sales* (accessed Oct. 31, 2013).
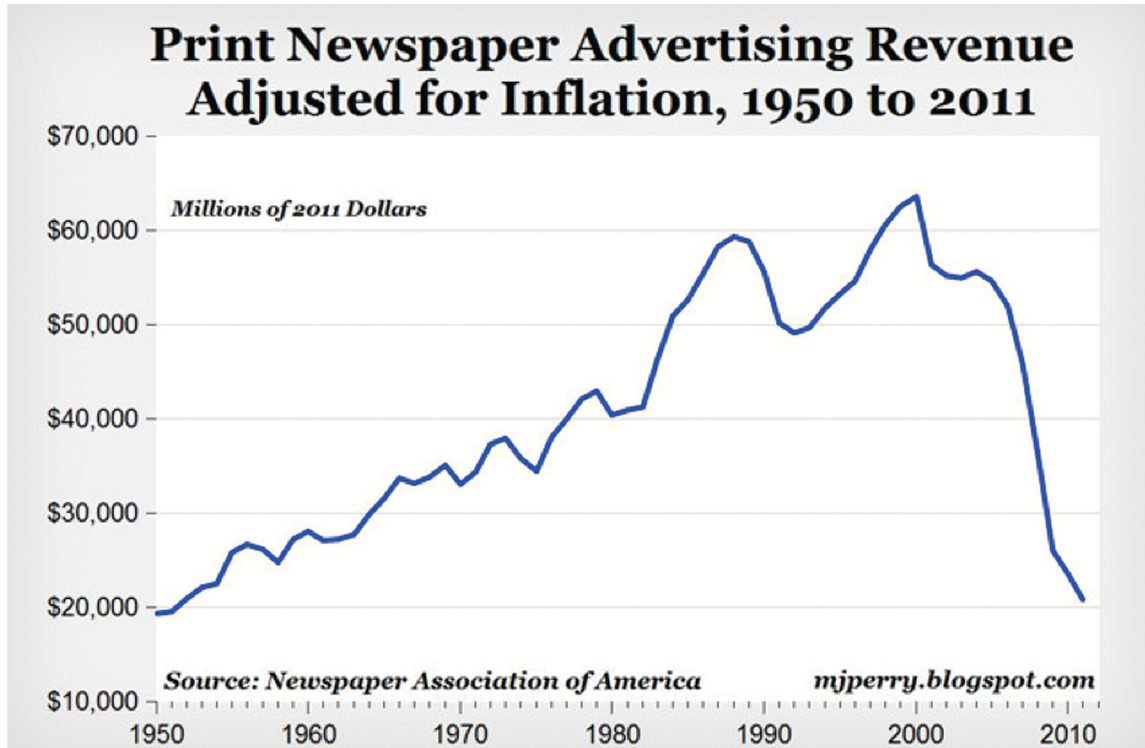
Figure 13. Mark Perry, 2010, in Vlad Savov, "The decline of pront visualized: US newspaper ad sales falling off a cliff.". *http://www.theverge.com/2012/3/20/2886806/the-decline-of-print-visualized-us-ad-sales*

With the decline of print news, and as online and digital publishing continue to take a larger share of the communication market, there is a need to continually search for better ways to disseminate information to readers. Whether it is through newspapers and news magazines, specialty infographics magazines, Internet blogs or the Web, explanatory graphics should be an important part of disseminating the news. In a world full of ever-increasing visual clutter and with different means by which readers can access the news, explanatory infographics can provide a clear and concise way to engage readership and provide essential knowledge.

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