Social Movement Information Design and A Curriculum of Proper Knowledge Consumption

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Abstract. Narrowing in on two contemporary social movements as a case study, this analysis will use a mainstay of information design, Edward Tufte, as well as a lesser-known pioneer in the field, Otto Neurath, to consider the ways in which the infographics associated with those movements can be looked at critically. Using Tufte's popularity and commercial success as an indication of his strong influence on this field, questions about the appreciation of efficiency or validity of message at the expense of craft, nuance, and meaning making will be raised, eventually concluding that a new approach to the consumption of information design is necessary.

1 Graphic and Information Design & Social Movements

A review of the relationship between social activism and graphic design over the past century [16] illustrates the ways in which graphic designers have integrated themselves into or extracted themselves from the active participation in social movement design. From radical movement publications on the Left at the turn of the century, through to the emergence and dominance of the commercial design field, ties between design and activism were strengthened as the former became a commercially driven discipline, providing the talent and distribution channels necessary for mainstream attention.

The modern "information design" discipline under the umbrella of the graphic design field has, perhaps, a misleadingly broad name. Arguably, information designers are those who focus on using maps, charts, illustrations, graphs, and other graphic-heavy visual elements to convey their message—with a strong emphasis on the simplification of that message [6]. With a brief nod to DaVinci's *Vitruvian Man*, William Playfair's *Commercial and Political Atlas*, and Dr. John Snow's work mapping the cholera outbreak in London in the 1850s, we observe information designers' use of visualized data to convey messages in a universal form—imagery [29].

Considering this universality, especially combined with information design's ability to quickly handle large amounts of data, it is logical that commercial designers are looking to the field as a way to improve corporate communication [6]. But while documentation of Snow's maps or Playfair's atlas is relatively commonplace, there is little written about the use of information design in contemporary social movements. In order to gain a critical understanding of social information design, therefore, it

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would follow as worthwhile to apply contemporary information design principles to those graphics being produced for social movements today.

2 A Tuftean Framework

To begin, it would be helpful to review the work of perhaps the most prominent information designer of our time, Dr. Edward Tufte [2]. His *The Visual Display of Quantitative Information*, originally published in 1983, presents a thorough overview of the history of information design, as well as a set of principles to be used in effective graphics which maintain the integrity of their respective data. Since the publication of *Visual Display*, he has built up an empire of self-published work and self-orchestrated seminars. The *New York Times* noted in 1998 that, "his skills seem uniquely suited to the moment: he knows how to turn seas of information into navigable—even scenic—waterways" [24]. His "Sparklines" and other mechanisms have made him a mainstay in the information design field, providing him the opportunity to have significant influence over the way corporations and government organizations present data [2].

In his fourth and most recent volume, *Beautiful Evidence* [28], Tufte presents a list of six principles: Comparisons; Causality, Mechanism, Structure, Explanation; Multivariate Analysis; Integration of Evidence; Documentation; and Content Counts Most of All. A critique using these principles can be useful in helping to dissect a visual language from an analytical perspective—how well an argument is presented via the design of the data associated with that argument, or, as Tufte notes, "to appraise their quality, relevance, and integrity." The fact that social movement design's subject matter may differ from traditional corporate or scientific presentations is moot according to Tufte's assertion that "the fundamental principles of analytical design apply broadly, and are indifferent to language or culture or century or the technology of information display." He goes on: "Human activities, after all, take place in intensely comparative and multivariate contexts filled with causal ideas: intervention, purpose, responsibility, consequence, explanation, intention, action, prevention, diagnosis, strategy, decision, influence, planning."

For Tufte, applying his modernist approach to any social movement information design would provide a fruitful understanding of those designs' "quality, relevance, and integrity." But what does this application look like using real-world examples? This analysis takes two movements featuring widespread use of infographics and data visualization—the Occupy Wall Street and the anti-SOPA/anti-PIPA movements—and attempts such an application.

3 Comparing The Social Movements

3.1 Occupy Wall Street

Generally speaking,[1] the Occupy movement (sometimes called "Occupy Wall Street" or "OWS") refers to a global protest against the economic and social injustices caused by what its members believe to be capitalism's power over government and the individual—a power which the movement posits has led to a severely skewed distribution of wealth throughout the developed world. Of particular note is the movement's emphasis on "horizontal" organization, governed by consensus processes: decisions are made at "general assembly" meetings[2] via predetermined methods that are designed to ensure broad agreement across the group. In September of 2011, occupations—or camps of protestors in public locations—began appearing in hundreds of cities around the world. After the majority of camps were evicted by local authorities, the movement continued as a network of smaller groups, planning direct action protests and awareness campaigns. Each camp and associated social action share a general theme (representing the "99%" of the population who are affected by the aforementioned unfair distribution of wealth) but there is no official body which governs each one as a collective [1].

3.2 Anti-SOPA/Anti-PIPA

In October 2011, the Electronic Frontier Foundation[3] began encouraging constituents to contact their Congressional representatives to voice concern over legislation being debated on the floors of the U.S. House of Representatives and U.S. Senate, the Stop Online Privacy Act (SOPA, formerly Combating Online Infringement and Counterfeits Act, or COICA) and PIPA (Protect Intellectual Property Act) [3], [22], [27]. The organization expressed fears over what they felt were over-reaching measures to protect intellectual property—measures that would, according to them, invade users' privacy and censor free speech online. The following month, Congressional mark-up hearings were held, featuring five representatives from the media industry and one representative from technology giant Google. Taking note of the lack of representation, more technology companies—Facebook, eBay, and others—joined together in opposition of the legislation [10].Google itself hired "at least 15 lobbying firms" to counter the bills [31].

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[1] Note that, due to the disparate nature of the Occupy movement, there is no official manifesto or handbook to reference.

[2] General assembly refers to "a time and place for Occupy Boston announcements and proposals." It is open to anyone and is governed by consensus process—proposals are made and passed via broad agreement, hand signals are used to indicate various points of process, and a team of at least 11 facilitators ensure the process is executed as previously agreed upon. For more, see: http://bit.ly/tsBIoE.

[3] A non-profit advocacy group, described as committed to "confront[ing] cutting-edge issues defending free speech, privacy, innovation, and consumer rights" [26].

On November 16, the efforts of the technology lobby crossed over into mainstream attention when the online micro-blogging site, Tumblr, began "censoring" user dashboards by blocking out text on the site with black squares. Soon after, other online giants made similar gestures—all to protest SOPA and PIPA [7]. As coverage of SOPA and PIPA moved into the mainstream, more content regarding the legislation and the movement against it was being produced and distributed, especially online.

3.3 The Comparison

Looking at these two contemporary social movements and their respective use of information design is an exercise that could prove useful to both social and political actors, as well as designers. The comparison between these two movements in particular, however, can also prove a bit complicated.

On the one hand, there are concrete variations between the two movements: Occupy presents itself as a horizontal movement, while anti-SOPA/anti-PIPA began as a technology lobby initiative, eventually gaining broader support via specific for- and not-for-profit organizations (i.e. Tumblr, Wikipedia, et al.). Additionally, the former resists assigning itself one singular message or goal, whereas the latter rallied constituents around defeating two very specific pieces of legislation [23], [7].

The two movements are not, however, mutually exclusive. In fact, one of the tenets of the Occupy movement is to support freedom of speech and resist censorship. As such, various groups within the movement expressed support for the SOPA/PIPA opposition, going so far as to encourage activists to "Occupy SOPA" by contacting local representatives [20]. Even though members of the movement had previously expressed resistance engaging with the political system, the threat posed by these bills was enough to inspire action [13].

Beyond the complications in comparing the two movements, a thorough investigation of every infographic associated with each movement is, arguably, impossible; neither movement has an "official" producer or repository for promotional or informational content, let alone the specifically visual. One collection of Occupy related graphics (including a number of anti-SOPA/anti-PIPA focused designs) resides at OccupyDesign.org, whose administrators describe the site's goal as "building a visual language for the 99 percent" [19]. Produced and maintained by a group of volunteers, the site presents itself as a toolkit for both those who do and do not self-identify as designers. It provides visual elements that can be reproduced and distributed on signs, banners, or online. Initially, the focus of the group was on producing infographics and iconography for the movement—sometimes using data-sets received from constituents. Eventually, the site expanded into posters and other designed pieces related to the movement. When asked how "infographics" are classified as such by site administrators, team member Max Slavkin [25] noted, "I guess it's been more of a 'know it when we see it' approach."

This relatively liberal approach is noted beyond OccupyDesign, as well, when observing each movement's respective design subject-matter (one can find graphics describing the purpose of a movement, descriptions of its members and makeup, its goals and effects, and so on) and content (both movement's causes are represented in

a quantitative or qualitative manner). An attempt to contextualize each movement's visuals by aesthetic is similarly evasive: one observes a range of aesthetics from large blocks of text to pictograms, graphs, and even Rodchenko-esque "voice ripples".[4]

4 Application Of The Tuftean Framework

The highly varied nature of the information graphics produced for and by the Occupy and anti-SOPA/anti-PIPA movements is rather revealing in itself. Even the pure volume of designs from which to pull a sample to analyze is an indication of the popularity of the infographic form among these particular movements. But does the value placed on the form distract from the motives or meaning behind the design?

According to Tufte, "Evidence is evidence" [29]. Encouraging a "comparative and multivariate" approach certainly makes sense for economic or scientific considerations—fields in which empirical data drives much of what is taught. But what this approach ignores are considerations such as—among others—the intangibility of movement objectives, the multichannel nature of graphic presentation (in movement literature, on posters, during collective action), and the importance of anonymity for some movement actors (especially those supporting contentious causes).

For instance, an application of the Tuftean principles suggests that OccupyDesign's information graphics are relatively weak: they normally only contain few pieces of data, they are presented with very simple visual cues (in black and white, without more than a few different icons, etc.), and they are much stronger (in a Tuftean manner) when a number of them are viewed together at the same time. These designs, however, were prepared for use in collective physical action—occupations and protests. The pioneers of information design were not able to take the channels and media we have available today into consideration: Playfair and Snow were sending their designs to be printed in books or journals. But as the use of information design moves beyond the medical and economic—and into commercial advertising, social advocacy, etc.—the ways in which we evaluate this design must adapt accordingly.

Concurrently, a reevaluation of the field's approach to "integrity" is also in order. Tufte promotes documentation as a requirement for strong analytical design—an assertion that is hard to refute when considering the importance of delineating between fact and fiction. But at what point does an emphasis on documentation overshadow an expression of belief? Does improper citation of sources regarding a movement's reach, distract from the designer's intent to portray a large scale action? On the other hand, an emphasis on expression through design—rather than on solely conveying scientifically accurate information about or for a movement—leaves perhaps too much in what Milton Glaser calls "the category of consciousness-raising." He goes on to argue that "How can you penetrate people's immunity is always the fundamental question of a designer's work" [8]. Does penetration without an emphasis on fact—turning to shock value—further polarize an already dichotomous discourse?

[4] Copyright and space considerations precluded the inclusion of the actual graphics referenced here. Please see http://occupydesign.org/gallery/all?field_type_tid=3 and https://google.com/takeaction/past-actions/end-piracy-not-liberty/.

5 Challenges To Information Design's Inherent Objectivity

To be sure, Tufte's strong emphasis on science and empirical information in the design field has drawn indirect criticism from a number of designers. Two in particular, Jessica Helfand and William Drenttel, write in 2002 [4] of the dangers of applying principles of what Tufte might call "well-designed graphics" to the scientific. "The appeal of information designis that it offers instant credibility." They continue, "But it's a false authority, particularly because we buy into the form so unquestioningly."

Robin Greeley has also presented a similar warning, though she approaches the dangers from the perspective of the designer, rather than the observer. In her 1998 review of designer Richard Duardo's "Aztlan Poster" [9], she offers an interrogation of cultural hegemony in graphic design. She argues that "Design in our present decade cannot be thought of solely in terms of an object or product; rather, it must be considered as a process carried out with a nexus of particular social relations (cultural, economic, symbolic)." Further, she encourages current designers to consider the field's "metapraxis", a place where meaning becomes attached to objects, images, and words: "The ability to engage in this metapraxis is part of what sets designers off from nondesigners, especially in this age of personal computers and cottage industry design, when professional status alone no longer defines a field."

In raising the various considerations which must be acknowledged while designing information, and in focusing on the specific value of the professional designer, Greeley calls into question the very nature of Tufte's mission, one which the *New York Times* describes as "proselytizing, winning converts and turning a profit in the process." Tufte, in the same article, notes that he is "expanding [his] teaching to reach people directly" [24]. This willingness to open the task of information design to the masses—a willingness upon which his entire business model is predicated—stands in direct contrast to the work of a philosopher whose influence on the information design field dates back to nearly 60 years before the publishing of *The Visual Display of Quantitative Information*.

6 Otto Neurath, Isotype, and The Transformer

As a founding member of the Vienna Circle's logical positivist movement, Otto Neurath believed that the expression of fact was of utmost importance, especially in a Europe having recently been ravaged by World War I. During his tenure as director of various local museums in Leipzig and Vienna, Neurath designed exhibits for citizens that explained statistics and policies about local communities and their various economic and social concerns [15]. Confounded by the complexities of expressing statistical knowledge through verbal language and the rules which accompany it, Neurath turned to a system of pictograms, designed and arranged (sometimes alongside written language) with a logic he felt unattainable through words alone. These pictograms addressed, too, his struggle to convey relevant information in a clear manner, to be consumed and understood by an international audience—a "de-babelzation" of sorts.

Neurath eventually titled this mode of information transfer the *International System Of TYpographic Picture Education*, or *Isotype* [15], [18].

To be sure, Isotype presented a way for Neurath to balance his struggle with the form of language—the rules and considerations associated with the written and spoken word—and his belief, as a logical positivist, that language could still convey universal fact. In his introductory text to Isotype, Neurath notes that "To make a picture is more responsible than to make a statement, because pictures make a greater effect and have a longer existence" [18]. Considering the devastating effects of World War I on the world around him, it is no surprise that "responsibility" is a priority of Neurath's. Developing a language based on the universality of imagery was of utmost importance to him, as he believed it could usher in, according to designer and educator Ellen Lupton, a more "egalitarian culture," one in which "pictorial information would dissolve cultural differences" [15]. As Marie Neurath (née Reidemeister), Otto Neurath's wife and colleague, writes, Neurath wanted to develop "charts meaning something for everyone," he wanted to make sure "that they excluded nobody, that they allowed several levels of understanding…as a means of education that is neutral, provides objective facts and leaves judgement and evaluation to the viewer" [17].

This seemingly utopian vision required overcoming many obstacles. Neurath set out to take on the practicalities of building Isotype into a truly international language (all the while dodging the oppressive regimes of the pre-World War II nations of Europe) by building a team of designers–most notably of whom, Gerd Arntz, had significant influence on the eventual look and feel of Isotype's famous wood cut aesthetic [15]. Nearly 80 years after Neurath's introduction of Isotype, the language's staying power is, arguably, evident only in this aesthetic's influence on current information design and data visualization pictography and, perhaps, in the addition of the term "isotype" to design's lexicon. In 1972, 27 years after Neurath's death, Marie retired, depositing the full cache of the project's documents and publications into an archive at the University of Reading, outside London [15].

But Isotype may have more to teach us, particularly on a philosophical or theoretical level. Neurath's system was built around the premise that language exists as an object tied to nature, though still formed by the observer of this nature [15]. This belief can be explicitly seen in Isotype's strong emphasis on the role of what Neurath called the "transformer." As Robin Kinross writes in his book [12] *The Transformer*, "Neurath developed the notion of transformer (it was 'Transformator' in German) to describe the process of analysing, selecting, ordering, and then *making visual* [emphasis his] some information, data, ideas, implications."

This process was a detailed one, with the transformer working with stakeholders and subject matter experts, gaining a strong understanding of an issue before building the Isotype pictograms to represent it. This included considering the audience of the language and what symbols would better resonate with them [17]. When a disciple of Neurath's, Rudolph Modley, took his knowledge of Isotype to the United States in the 1930s and 1940s, he opted not to include the role of transformer. Instead, his goal was to reach as broad an audience as possible by bringing, for example, the pictograms to school children as "symbol sheets." In doing so, he alienated Neurath. As Eric Kindle, curator of The Otto and Marie Neurath Isotype Collection at the University of Read-

ing, noted, "it led to [a reduction in] the richness of presentation of information" [11]. By removing the transformer and attempting to bring the principles of Isotype to the masses, much was lost in the development of and the resulting meaning of the language. As such, Neurath and his team sought to control every element of the design and production of Isotype.

7 Moving Away From A Focus On The Design Side

It can be said, perhaps, that this focus on control of production led to Isotype's eventual downfall. This is not to detract from the system's influence on the generations of designers who came after its inception amidst a war torn Europe. Neurath's approach is contextualized when viewed alongside more contemporary theorists such as Robin Greeley; attempts at controlling or changing the way design or media is made is nothing new. This phenomenon is what Neil Postman refers to in his work, *Technopoly: The Surrender of Culture to Technology*, when he notes that "no one can reasonably object to the rational use of techniques to achieve human purposes." He goes on to call out the precise subject matter of Neurath's efforts: "…Language itself is a kind of technique—an invisible technology—and through it we achieve more than clarity and efficiency. We achieve humanity—or inhumanity. The question with language, as with any other technique or machine, is and always has been, Who is to be the master? Will we control it, or will it control us? The argument, in short, is not with technique. The argument is with the triumph of technique, with techniques that become sanctified and rule out the possibilities of other ones" [21].

Information design, certainly, is a technique—one that stands to offer significant aide to those working to understand a complex situation. After all, as media philosopher Villem Flusser asserts "Images are mediations between the world and human beings…the world is not immediately accessible to them and therefore images are needed to make it comprehensible" [5]. But the trust we place in these images becomes dangerous as our critical eyes become lackadaisical and the techniques to produce them become sanctified. "They are supposed to be maps but they turn into screens," Flusser continues, "Human beings forget they created the images in order to orientate themselves in the world" [5].

To attempt a methodical or scientific evaluation of the information graphics produced by Occupy, anti-SOPA/anti-PIPA, or any social movements is a futile exercise—they are infinite, produced by countless designers, distributed, cited, even modified throughout countless channels on a plethora of platforms. As graphics associated with movements, this is both expected and acceptable: the way the pieces are designed, viewed, and spread are all products of the nuance and meaning-making infused into them. The way they are understood is a product of the meaning their audiences seek. They need not be held accountable to the tenets of "truth." We need not scold our designers for not producing them in accordance with Tuftean (or any other) principles. Rather, we must remember what Otto Neurath already knew when developing Isotype: there is a translation that takes place between the feelings, the words,

and the images that make up an information design. Then, perhaps, we can teach design consumers to do so with a critical eye and a willingness to look past technique.

Nearly 15 years after Greeley's "Aztlan" essay, designers are still faced with the fact that their field is inherently commercially driven. But in the era of Apple, Inc.'s dominance in the consumer market, in a time when "design thinking" is part of the business lexicon, and the "Technology, Entertainment, and Design" conference is perhaps one of the most widespread,[5] surely the observers (the victims, even) of all of this technique-celebrated design are ready for a re-education regarding consumption: a framework, not to produce beautiful, "well-designed information," but one to consume it responsibly.

This framework would require the development of a curriculum of "proper" knowledge consumption, one that challenges viewers of design to answer Postman's rhetorical query with an emphatic, "*we* will control *it*, and not vice versa." Certainly, countless design degrees have been predicated on a similar goal. But, taking into consideration the channels available to our next generation of digital natives (even if these channels may be co-opted by purely commercial interests), perhaps there are new ways to reach our design consumers, making sure that they understand what Otto Neurath once did: one must always consider the forces at work on the knowledge around us.

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