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Visual Methods and Beyond:
Exploring the Logics and Influence of Competing Domains of Visual Practice

Cover Photograph by Ray Gibson
Abstract

One of the privileges of being an academic is the freedom to explore new intellectual and practice domains. In my case, I had spent several years encouraging graduate students in the field of public administration to develop visual analytic frameworks to capture the practical and often complex challenges they were studying or advising governments on (e.g. introducing policy reforms, organisational mergers or horizontal challenges working with local, federal, First Nations or non-profit partners), and the insights of diverse literature informing and framing their research questions.

I began to wonder why, despite the great advances in a range of digital tools and visualization techniques in CAD systems, animation and film that produce amazing visual representations, governments had not relied more heavily on them to show the complexity of policy and administrative challenges to engage the public when debating issues and solutions, and for the purposes of accountability. This also raised questions about the extent to which governments use various visual tools to undertake analysis, advise political leaders, develop new approaches to public policy and service delivery, and monitor progress. Although this will come as no surprise to readers of this journal, I soon discovered that identifying what counts as ‘visualization’ was itself a complex undertaking.

Keywords: visual techniques, methods and domains; public policy and administration; engagement; democratic values.
My exploration began with visual practice commonly associated with displaying and analyzing data, as well as various approaches to facilitating and recording strategic dialogue. I reviewed the literature and soon became aware of three distinct, but overlapping, domains of visual practice: information visualization, graphics and visual display, and visual facilitation and strategic thinking. I attended conferences, met practitioners, and considered how the tools and the resulting visual representations might intersect with the policy-making process (Lindquist, 2015). Interestingly, despite the widespread enthusiasm and excitement about the contribution of visual practice to informing the public and clients, regardless of the tradition, I soon learned that few (if any) observers had considered these domains together nor had much thought been given to what the implications might be in aggregate when these tools were more fully used in policy-making. Later I became aware of the Visual Methods conferences and its community of scholars, and I sought to learn more by participating in the 4th Annual International Conference on Visual Methods in Brighton in September 2015.

Like my other forays into domains of visual practice, I encountered a vibrant, diverse and committed community of practitioners and scholars keen to share and reflect on the visual methods they were working with – film, photography, video, drawing, community mapping, multi-media, storytelling, and other approaches – and their applications to host of issues, causes and groups. This exposure certainly broadened my thinking. Conversely, some of the questions I have been probing about the relationship between visual practice and policy-making, along with perspectives on the discourse and logic behind visual practice, might stimulate debate in the Visual Methods community. What follows briefly introduces the high-level framework for categorizing visual practice and how I propose it be modified and then explores some of the underlying similarities among the diverse visual practice domains.

**Visualization: Diverse, Overlapping Practice Domains**

This section first provides an overview of three domains of visualization practice – information visualization and data analytics, graphics and information display, and visual facilitation for thinking and strategy – recognizing that there are overlaps among them.

**1. Information Visualization and Data Analytics**

The field of ‘information visualization’ is well-established, informed by a succession of developments in digital technologies at the intersection of the fields of computing, engineering, graph analysis, data analysis and management, cognitive psychology, software development, human-computer interface, etc. (e.g. Friendly, 2008; Thomas & Cook, 2005). Contributors come from the full range of scientific, social science and humanities disciplines interested in different challenges in visually representing increasingly large data-sets generated or accessed by diverse academic disciplines, corporate and government data on clients and operations, and social media, as well as means to enhancing how humans can analyze and learn from these tools and information. The ‘InfoVis’ field institutionalized with conferences, journals (e.g. Information Visualization) and university research centers, courses, programs, and texts (Ward et al. 2010). Many of these conferences proceed under the auspices of the IEEE Society, but what is striking is the diversity of disciplines, techniques, and application to every imaginable substantive and policy domain (e.g., geosciences, biology, medical imaging, physics, health, monitoring social media, etc.) as well as issues arising from those applications. Readers of public affairs magazines will be aware that top consulting firms advertise their capabilities to assist with data mining and visual analytics to woo and retain clients. All of these actors are collectively driven by a fundamental and shared premise: access to data, which – when found, accurately transformed, well represented, and properly matched with other streams of data – will help inform and improve awareness of issue, analysis, and decision-making. Finally, there have been persistent and increasing calls for more education and training in information visualization for practitioners, particularly for novices and generalists (e.g. Chen 2006; Grammel, Tory & Storey, 2010), and a proliferation of dedicated programs and specialized courses in other professional programs.

**2. Graphics and Information Display**

A second domain encompassed the ongoing efforts to creatively and better display concepts, ideas, complexity, and data by means of graphs, graphic design and other forms of visual renderings (e.g. Tufte, 2001). This domain includes not only the broad field of graphics, which continues to explore ways to convey information for scientific, professional and advertising purposes, but also the increasing number of magazines, web site capabilities, and newspapers investing in ‘infographics’ or visual representations of complex phenomena. Graphics and visual renderings have long been in architectural, planning, engineering, and other scientific publications over many decades, but excitement continues because all of this has been enhanced by digital platforms and software for production and display. Web sites and books proliferate showcasing the most intriguing efforts on, again, almost any topic imaginable (e.g. McCandless, 2009; Baer, 2008; Steele & Iliinsky, 2010). These visual traditions are broad and diverse, ranging from the exploration of new programs and algorithms for producing visualizations, to showcasing the
remarkable and beautiful examples of visualization, to exploring applications in an ever-increasing array of fields, to developing theoretical constructs, and to exploring the cognitive dimensions of processing and interpreting visualizations. If information visualization is about analyzing and rendering data, graphics and information display are more about aesthetics, beauty and impact. Practitioners include graphic designers, information architects, interaction designers, user experience designers, usability and human-factors specialists, human-computer interaction specialists, and plain language experts (Baer 2008, 12-15). An important focus of this domain is to engage or persuade audiences with presentations, animations, and narratives, the latter either animating creation of the visualization or necessary for sharing its meaning and relevance (e.g. Duarte, 2010; Segel & Heer, 2010).


Another rapidly growing community of visual practitioners are visual and graphics artists who assist clients in grappling with complexity by means of sketching, often involving elaborate renderings of challenges and strategies. They are often known as graphic recorders, graphic facilitators, and visual practitioners – but essentially they sketch in an engaging manner the evolution and key conclusions of meetings and conferences over a day and more, often in substantial and dynamic diagrams attempting to capture the movement, enthusiasm and vision of participants (e.g. Sibbet, 2013). Others specialize in using sketches to get to the essence of complex issues (e.g. Roam, 2009) or to generate ideas (Walny, Carpendale, Venolia, & Fawcett, 2011). A key vector for this community, among others, is the International Forum of Visual Practitioners (IVFP), founded in 1995, which sponsors an annual conference. However, I also include diverse professional practice areas which have long used visual techniques: systems thinking facilitators working with clients to discuss and better understand complex challenges, broader contexts, and promising interventions, often using ‘rich pictures’ and other kinds of sketches (Senge, 1990; Checkland, 1999; Checkland & Poulter, 2010; Chapman, 2004); education and therapy facilitators using drawing techniques to encourage children, youth and adults to evince feelings and develop broader perspectives (i.e. Hyerle, 2009; Winkel & Junge, 2012); foresight experts working with clients to imagine different contingencies and futures using visual tools to identify issues, trends, actors, and get them to think broadly and creatively (e.g. Ringland, 1998; Mueller & Schwarz, 2016); simulations and gaming on how markets, social, organizations, natural systems work and evolve (Johnston 2015); and performance models linking inputs and activities of programs to outputs and desired outcomes to gauge performance (McDavid & Hawthorn 2006). Most practitioners in these areas would not consider themselves ‘visualists’ but use visual tools to facilitate sense-making and strategic dialogue about complex challenges, capture complexity, surface tacit knowledge and diverse perspectives (Schon, 1993; Margulies & Valenza, 2005; Blackwell, Phaal, Eppler, & Crilly, 2008).

4. Adding Visual Methods to the Mix

Figure 1 captures the breadth of all three practice domains for visualization, recognizing that there are many distinct kinds of practice in each domain and that they often overlap – some visual methods are steps along the way in producing others, they resist easy categorization or change because of what they capture, the intended audience or purpose, or new technological possibilities. It has been adapted to include Visual Methods as a fourth domain, recognizing that many methods such as drawing, photography and film have long practice and scholarly traditions associated with them, and that even more recent innovations like video, storyworlds, and community mapping can be seen as extensions of earlier approaches.

Figure 1. Four Overlapping Visualization Domains

Based on my observations of the conference keynote addresses and panels, I have placed the Visual Methods oval in Figure 1 to overlap with graphics and visual display, as well as with visual facilitation and strategic thinking. The presentations
covered how a variety of visual methods were used to develop narratives and stories in support of personal development and political causes, though the latter is often a small scale, and to increase awareness and develop a sense of community with others engaged in similar struggles. Often the applications were connected with promoting social justice, identity recognition, and community development. Many of the methods were used for ethnography and storytelling for specific, often marginalized groups in society. Community mapping was interesting because of its multi-media approach to having individuals from community share perceptions and knowledge on issues, and develop a broader sense of community assets and possibilities, and a useful resource for others. Still others used social media data and images to critically appraise and explore issues and political movements. In contrast to the domains of information visualization (usually drawing on big data sets to illuminate issues at the societal or organization levels) and strategic visualization facilitation methods (often employed by large organizations), the visual methods applications canvassed at the conference were more local, selective, and often personal or working at the community level. Relatedly, the language used to appraise these applications often came from the critical traditions associated with film, photography, and art. We will return to this in the conclusion.

Visualization: Unearthing Logics and Tensions
There is no doubting the enthusiasm of all visual practitioners – working across all three domains – about the possibilities for visualization to increase awareness, inform strategic thinking, public decision-making, and design of services. Nor can there be doubt about the ability of good visual representations to seize and arrest attention. I share this enthusiasm and sense of the possibilities for adding value, but we should also consider what the implications of widespread take-up of visualization techniques will look like and amount to in aggregate.

Client Orientation and Craft Logic
When I first began to explore the diverse domains of visualization, I was struck by similarities with the profession and scholarly practice of policy analysis, which focus not only the ‘analytic toolkit’ but also understanding how to cultivate and manage the client-analyst relationship (Meltzner 1976). Indeed, for the most part, policy analysis was seen as inherently a client-oriented endeavour. Client work was not only problem-driven but also client-oriented, meaning that the product – shaped iteratively and produced under significant time constraints – took on the character of what Wilson (1989) would call a ‘craft’ activity (Meltzner 1976; Bardach 2012).

A similar disposition and sense of craft permeates the work of visual practitioners in all of the four domains. The discourse on how to arrive at good visualizations is as much about fit with client needs and contexts, as on the quality of the representation and whatever informs it. It is important to recognize the aesthetic and creative dimensions to such craft – like the sciences and mathematics there is a hard-to-define notion of ‘fit’, and when a formula or, in this case, a representation accomplishes what it needs to (Vande Moere & Purchase, 2011). Visualizations emerging from all practice domains typically must wrestle with offering context and focus for the purpose at hand, arriving at representations showing the whole and pertinent parts. Because not all representations can possibly show everything, visual practitioners must inevitably distort in order to illuminate (we will return to implications of this below in a macro context).

This client disposition is important to understand because, when estimating the impact and potential of visualization, discourse in the literature rarely goes beyond reflections and insights associated with working with proximate clients, whether individuals, groups or organizations. There is nothing wrong with this, but it means that careful thinking about larger dynamics and impacts on sectors, governance and society is attenuated (but see Lindquist, 2015). Rather, there is a general view that more visualization, more graphics and displays, and more visual facilitation will lead to better understanding, decisions, and service delivery outcomes. Even ‘independent’ actors – such as scholars or public intellectuals undertaking visual representation – see their clients as the ‘public’ and that they serve the public interest by contributing to the marketplace of ideas and information. Here the presumption, too, is that more information is better than less. Stepping back, one can see that such thinking, notwithstanding the different approaches to visual practice, this falls squarely into the broader stream of traditional Western rational thinking about the value of information.

A Multiplicity of Values: From Social Justice to Aesthetics
Many visual practitioners – regardless of which domain they might be associated with – would argue that the client orientation described above does not do justice to their craft and what motivates them. Many would strongly argue that their goal is social justice, bringing people together, facilitating expression and recognition of all voices in an organization or community, or broader democratic values, such as fostering constructive and informed dialogue, and producing final representations and reports which can influence a larger circle of stakeholders. For others, the aesthetic or creative impulse looms large, they expend great effort getting representations just right, which shows the quality of their craft. And, for
others, it could be about the data or the people, communities or phenomena the data captures, with the craft simply a means to uncovering the meaning or patterns they contain. Finally, there can be the motive of profit or expansion of activities. All of these values are at play in varying degrees in all domains of visualization practice and not necessarily inconsistent with the others. We should recognize this is the case, regardless of the visual tool, client and intended audience.

The Macro Context: Power and Persuasion
There is a presumption in all of the visual practice domains that more visual representation will lead to better outcomes. And, to be sure, visualization and facilitation techniques can be used to inject new perspectives and to map, explore and even aggregate diverse views. But this is not the same thing as considering the overall effect of having more actors rely on visualizations for analysis, communication, and influence in a governance or society.

Client logic is proximate in nature: it does not explore the reality of interests, agency and power in broader contexts. Many visual practitioners develop and promote visual practice for causes or growing enterprises, focused on assisting those nearby but without tracking eventual influence while claiming visual representations are more effective than other approaches. Moreover, many clients seek out such services to gain a competitive advantage, and more powerful actors can purchase or support bigger investments in visual products, which stands in contrast to the more bottom-up inclinations of the Visual Methods community. Looking at the larger context it seems clear that the many streams of visual practice not only compete with each other for the attention of policy-makers and citizens but also other streams of information and argument.

An important claim for visual representations is that they can convey perspective and insight more efficiently, richly and often viscerally, and therefore can pierce through the information overload we all contend with. But if more actors seeking influence – whether from the bottom-up or at the top of our governing systems – are using visual tools of one kind or another, the intended audiences will become increasingly inured or sophisticated when consuming visually-conveyed information, with the attention-spans of journalists, citizens and policy-makers getting ever shorter. In the larger context of competing beliefs and interests, that visual practitioners inevitably strike balances in representations, or draw attention to issues against larger backdrops, can lead to their interpretation as partial perspectives or misrepresentation, and representations, no matter how skilled, can be discounted and distrusted as a result.²

Implications: Visual Methods and Democratic Governance
A macro perspective of the diverse domains of visual practice and the larger governance environment leads to a more sobering perspective on the potential of any one visual product for influencing in politics, policy and society. But this is not just a challenge for visual practice: it equally stands for other enterprises such as social science research and policy analysis from inside and outside government seeking to inform or influence how we and policy-makers think. The distinctive feature of the Visual Methods community is its commitment to use and experiment with diverse ways to capture and share the conditions and stories of the less powerful and to empower clients. Bottom-up perspectives matter in democratic societies, and can become part of larger changes, even if these influences are difficult to ascertain, and it remains that making a difference to those most proximate to visual practitioners is an important accomplishment.

This leads me to a final point. Much of the discourse at the conference naturally relied on ideas, language, and theories associated with the fine arts, critical studies, and related traditions for assessing popular culture, often focusing on specific methods for certain purposes, and then making connections to larger cultural and social effects and trends. It leads to rich, interesting discussions. The intellectual traditions I am familiar with are very different, and include work that explores things such as the indirect effects of social science research on policy-makers (e.g. Weiss, 1977; Nutley, Walter & Davies, 2007), the role of values and beliefs in policy-making systems which filter information but also induce investments in order to contest those with contending beliefs (e.g. Sabatier, 1987), and how policy entrepreneurs and precipitating events can open ‘policy windows’ which could lead to policy change (e.g. Kingdon, 1986; Baumgartner, Jones & Mortensen, 2014). These perspectives are not offered as substitutes for current frameworks used in Visual Methods, but might be relevant for those seeking to fully delve into the pathways of influence of the work produced by this community of practitioners.

References


2 Web sites and debates have emerged which contest and critique visualizations of certain actors, along with those that celebrate good visualizations.