

## EDITORIAL

# Research Notes: Communication Design

*Communication Design* is the official publication of the International Council of Design (ico-D). It was formerly *Iridescent* – an online peer-reviewed research journal, which sought to establish a benchmark for design research and to make this available to a broad international audience. *Communication Design*, like its predecessor, was born out of the Council's strategic aim to support the development of communication design education including all facets of theory, practice and research. *Iridescent's* first supervising editor (2009–2011) was the Dutch writer Max Bruinsma who proposed that *Iridescent* should be a 'prism on design research' in that it would 'filter the luster and see what it is composed of' (Bruinsma 2011, 10). My tenure as Supervising Editor began in 2011 and saw the publication through its change in branding. Whilst the name may have changed, the journal's remit remains much the same: *Communication Design* is a lens through which emerging discourses in contemporary communication design research and professional practices are made manifest, critically examined and developed.

We can trace these goals even further back into ico-D's publishing history. The biannual magazine *Icographic*, for example, founded in 1971 by John Halas and designed and edited by Patrick Wallis Burke (1), actively sought to bring to the attention of a wide design audience a diverse range of research projects and reports about the visual world. This included scholarly research into sign perception, typefaces for bilingual printing, new technologies of laser holography, the role of the book designer, changing responsibilities of the typographic designer, problem-solving in the man made environment, and design from the perspective of a woman designer. *Icographic* was notable for the publication of articles by both practitioners and academics, and for rich graphic imagery from designers around the world.

As we begin with a new volume of *Communication Design* and a new publisher, it seems timely to revisit what we mean by the term 'communication design'. In his book *Communication Design: Principles, Methods and Practice* (2004) Jorge Frascara (president of Icoграда from 1985–1987) acknowledges the difficulties of pinning down a single definition. He problematizes the use of the term 'graphic design' as having too much emphasis on the physical nature of what we do and less emphasis on the profession. Frascara proposes instead the term 'visual communication design' where 'the three essential elements of the profession: a method (design); an objective (communication); and a medium (vision)' are contained. (Frascara 2004, 4) However, in recent times, visual communication design has become an expanded practice. The remit of the designer has necessarily broadened from the design of the visual to also include the design of sound, haptics, experiences and services. And as a result, it might be argued that the term 'communication design' better describes and supports a range of new kinds of practices, processes, and methods.

The board members of ico-D and this journal's editors thought long and hard about what to name our publication. We came up with several iterations before resting on the title of 'Communication Design'. We added the subtitle to ensure clear articulation of our interest in broadening out the scope to 'Interdisciplinary and Graphic Design Research'. In our view, the title better reflects where contemporary design practice and research is heading, and it allows space for the definition to evolve.

The breadth of approaches is made evident in this issue. James Branch's article 'Mapping the Mast (2014)' examines communications infrastructures through a case study research project focusing on a 'contested mobile mast' situated in Winchester, UK. The project takes as its

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# icographic

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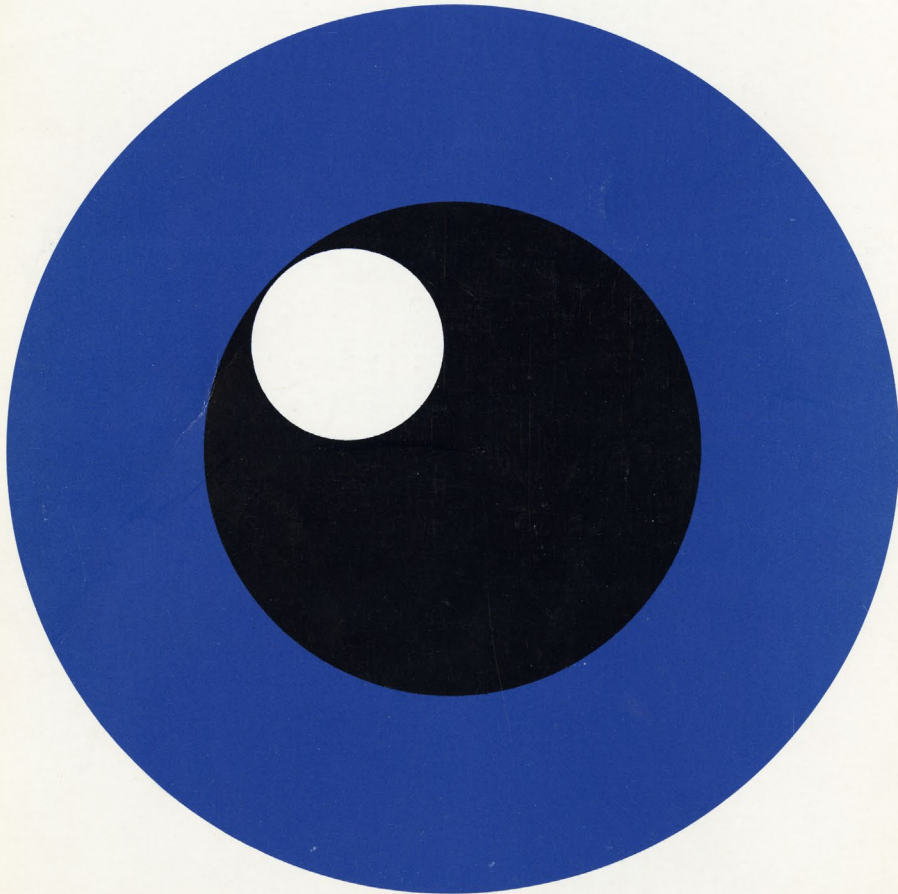
Special issue on VisCom 71  
the Congress and Exhibition on  
the Learning Industry

Contents

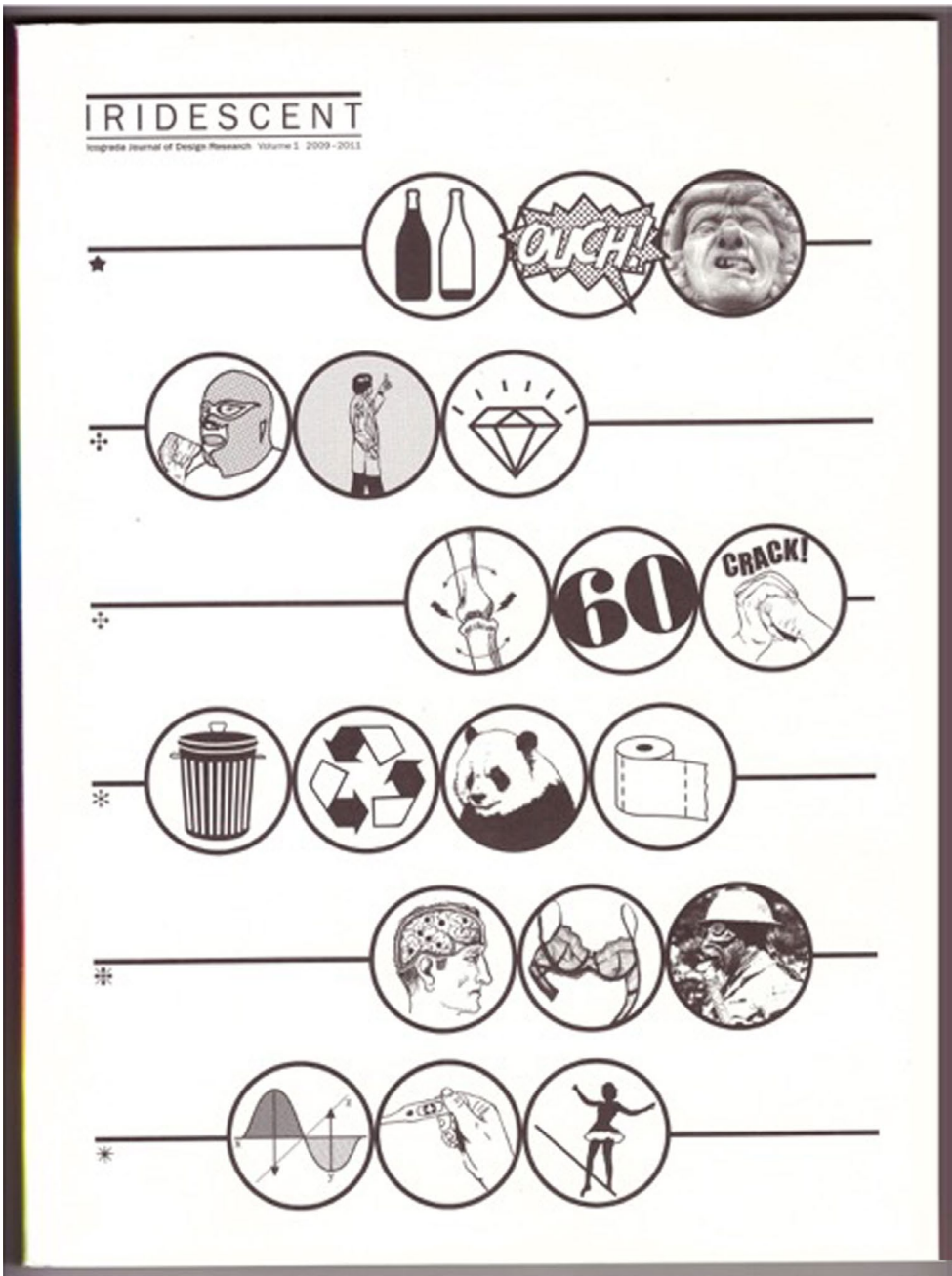
Speakers at VisCom 71  
Congress and Exhibition  
Computer animated movies

Differentiating images  
Symbol design in the GDR  
Two Belgian designers  
Armin Hofmann  
Design and Science

Holography  
Icograda exhibition in Prague  
Audio-visual hardware  
Definition of Cybernetic  
Design organisations in Sweden



**Figure 1.** icographic: A quarterly Review of International Visual Communication Design. Issue number 1, June 1971. Design: Patrick Burke and Geoff White. Image courtesy of ICOGRADA Archive, University of Brighton Design Archives.



**Figure 2.** Cover from *Iridescent: Icograda Journal of Design Research*, Autumn, Volume 1 (2009–2011). Design: Fabbrica: Arianna Di Betta, Michela Povoleri; Creative Direction: Omar Vulpinari. Copyright: International Council of Design (ico-D).

theoretical starting point research undertaken by media scholar Lisa Parks on the deliberate act of disguising mobile masts as trees in the US and what this means for artists and communities. Branch extends Park's analysis (and others, including Bruno Latour with Actor Network Theory) by asking what is the role of communication design in representing mobile masts and infrastructures 'in a way that encourages citizens to participate in sustained discussions and decisions about ownership, development and access'? His findings reveal a context of local politics and DIY protest, where ultimately what is exposed through a process of mapping are the explicit interactions among people, objects and systems.

Typography and type design continue to be a key area of scholarship for design researchers. Articles on type appeared frequently in the early issues of *Icographic*, and Michele Buchanan's piece titled '@facevalue // expanding our typographic repertoire' continues this tradition. Here Buchanan proposes a new set of typographic glyphs using existing punctuation marks to denote tones as a way of enhancing communicating through text-based media (e.g. IM, social media, email and texting). Buchanan takes her research directly to the focus groups who are practiced users: a group of high school students in Winnipeg, Canada. Through a survey method she is able to test the 'intent and interpretation' so as to 'advance the clarity of our text-based dialogues.'

The reading of images and their meanings as formed in popular culture establishes a foundation for exploring brands and urban subcultures in an article by Bobby Campbell titled 'Hot Sauce and White Chocolate: And1 and Ghetto Style in Basketball'. Campbell contrasts the advertising campaigns and branding of the American sport apparel company And1 with the perceived opportunism of other athletic brands who have co-opted inner-city cultural expressions including graffiti and hip hop music. His analysis determines that a 'credible' relationship to the streetball community is made explicit, in part, through the aesthetics of And1's branding and marketing of 'urban black anti-hero style'.

Design education is at the heart of what we do and research into the delivery and development of our curricula remains an important focus. Grant Ellmers' article builds upon existing models of project-based learning: 'The Graphic Design Project: Employing Structured and Critical Reflection to Guide Student Learning' takes us through his research process and toward the development of a reflective learning framework. His research is tested in the classroom with final session undergraduate Graphic Design majors at the University of Wollongong, Australia. Another form of reflective practice is explored in Andreas Luescher's visual article 'Poster as Design Dialogue'. He engages with the idea of a visual dialogue by using the poster as a tool for evaluating the final semester experience of senior architecture Design Studio students. The results are a series of dynamic portraits of studio culture using collage as a methodology.

The history and theory of graphic design continues to be an underdeveloped area of academic study. Our hope is that by highlighting a different archive in each issue related to communication design, we could spark not only an interest in the history of artefacts but also in how archives can inform design practice. In this issue, Catherine Moriarty provides insights into the organizational history of ico-D in her article on 'The Archive of the International Council of Graphic Design Associations at the University of Brighton'. Whilst the work of prominent designers is important, so too, she argues, is 'an equally fascinating but less spectacular paper trail' that is found behind the scenes and gives us insights into the processes, business and design decisions that are taken in order to produce the work. Archives are not only repositories of artefacts but also of knowledge, and they warrant featuring, which we will be doing in each issue.

An academic journal would not be complete without a reviews section. Our reviews editors are reaching out internationally to cover a broad range of exhibitions, conferences, films, policy documents and much more. In this issue Rebecca Ross reviews an exhibition held at London's Barbican Centre titled 'The Last Digital Revolution' where she highlights amongst other points, the importance of archiving digital history. 'Craft values', with a practitioner-based approach

to research, is the subject of Philip Luscombe's review of the University of Falmouth's two-day conference: 'All Makers Now? Craft Values in Twenty-first Century Production'.

Future issues will build upon the directions established here. We are very pleased to be publishing with Routledge/Taylor and Francis as the next chapter of ico-D's publication history begins.

### **Notes**

1. Patrick Wallis Burke was a Principle Lecturer at Ravensbourne College of Design and Communication in Chislehurst, UK. At the time ico-D was known as the International Council of Graphic Design Associations (ICOGRADA) and then as now, was committed to promoting the profession and design education internationally.

### **References**

Bruinsma, Max. 2011. "Iridescent: A Prism on Design Research." In *Iridescent: Icograda Journal of Design Research, Autumn, Volume 1, 2009–2011*, edited by Max Bruinsma, 10–11. Montreal: Icograda.

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## Mapping the mast (2014)

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### ABSTRACT

There is currently widespread popular, professional and academic interest in communications infrastructures, particularly with the material networks that enable our seemingly immaterial systems to function. For example, Andrew Blum's book *Tubes* takes us inside places like the former AT&T telephone exchange on 60 Hudson Street, New York, to reveal the overlooked physical stuff that comprises the Internet. Similarly, Timo Arnall's recent film, *Internet Machine* (2014), reveals something of the 'cloud', in cloud computing, via a filmic tour of a giant *Telephonica* data-centre in Alcalá, Spain. These works echo a concern within media scholarship for the materials and infrastructures of the 'network society' and the power relations that surround and shape these systems. In this article, I discuss how designers are involved in efforts to make infrastructures more legible and report on a practice-research project that explores a contested mobile mast in Winchester, UK. The project responds to media scholar Lisa Parks' call to analyse mobile media networks by paying close attention to specific nodes in the network, local stories of development and the practices that surround mobile telecommunications infrastructure systems once they are activated.

### ARTICLE HISTORY

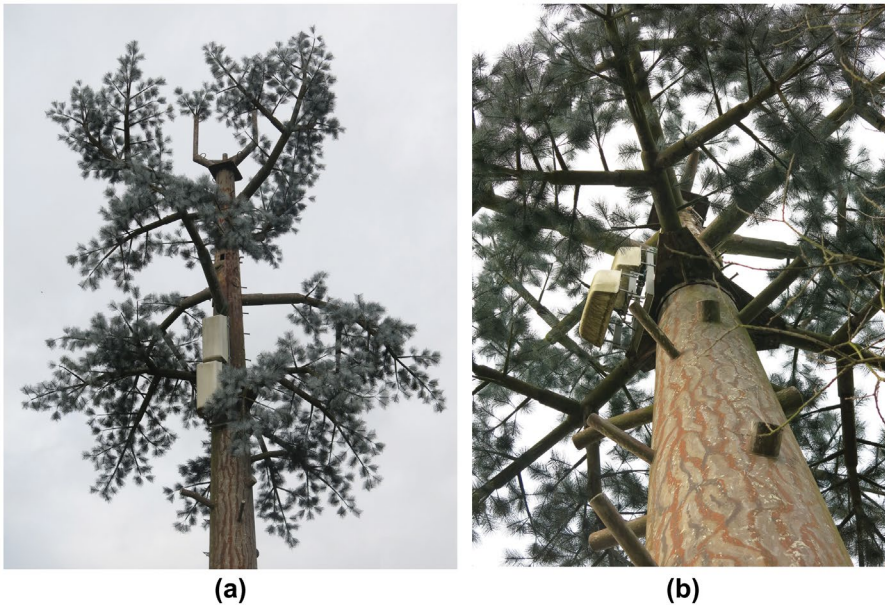
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### KEYWORDS

Actor-network theory; mobile media; communications infrastructure; infrastructure literacy; practice-research; communication design

## Introduction

My interest in the mobile mast on Byron Avenue developed after reading Lisa Parks' *Around the Antenna Tree: The Politics of Infrastructure Invisibility*.<sup>1</sup> In the article, Parks uses the uncanny sight of mobile masts disguised as trees (see Figure 1) popping up in the American landscape, to ask what issues are revealed by the (attempted) concealment of communications infrastructure? As Parks<sup>2</sup> points out, although it is necessary to make certain infrastructures invisible for the purposes of workable urban planning, one of the effects of this 'infrastructural invisibility' is that citizens are kept quite naive about the systems surrounding them, that they rely upon and subsidize. However, in a strange twist, these 'trees' that are deliberately designed to be inconspicuous have actually ended up becoming discursive focal points for various artists (such as the photographer Robert Voit) and citizen groups. Instead of blending into the background, these odd specimens have become a site for generating further public knowledge about wireless and other network systems.<sup>3</sup> This prompts Parks<sup>4</sup> to ask how we might find other ways to 'visualize and develop literacy about infrastructures



**Figure 1.** Communication infrastructure photographed in Cheltenham, UK. Source: Author 2014.

and the relations that take shape through and around them'. Which presents a compelling question for communication design, that is, how we might find ways to represent mobile masts and other infrastructures in a way that encourages citizens to participate in sustained discussions and decisions about ownership, development and access.

## Literature review

Study a city and neglect its sewers and power supplies (as many have), and you miss essential aspects of distributional justice and planning power (Latour and Hermant 1988). Study an information system and neglect its standards, wires and settings and you miss equally essential aspects of aesthetics, justice and change. Perhaps if we stopped thinking of computers as information highways and began to think of them more as symbolic sewers, this realm would open up to us.<sup>5</sup>

In focusing on mobile media infrastructure the project aligns with a broader shift within mobile communications research towards analysing 'stuff', or 'things', which is described by Horst<sup>6</sup> as a third wave of critical work. This third wave of research, aims to move beyond a traditional concern for users, consumption and meaning to focus, instead, on the 'dynamics of power as they emerge through the technical, social, political, and regulatory infrastructures'.<sup>7</sup> This concern to address the materiality as a part of the mix of social, cultural, political and economic practices in the study of communications media contrasts the tendency to overlook the physical nature of these technologies. For example, when we make a call, or use the Internet on our mobile phones, the infrastructure systems required to make this possible are rarely visible, we are only abruptly reminded of our dependence on these larger networks, when we pass under a bridge and lose signal. The very word 'mobile' implies unencumbered movement and freedom, in contrast with the fixed locational constraints of its



**Figure 2.** In-store advertisement for a mobile network operator. Source: Author 2014.



**Figure 3.** A telephone tower in Stockholm, Sweden with 5000 connected lines in use between 1887 and 1913. Source: Swedish National Museum of Science and Technology 2012.

predecessor, the landline telephone. Commercial narratives reiterate this perception of the infrastructure network as invisible or immaterial, as exemplified in the advertisement for a

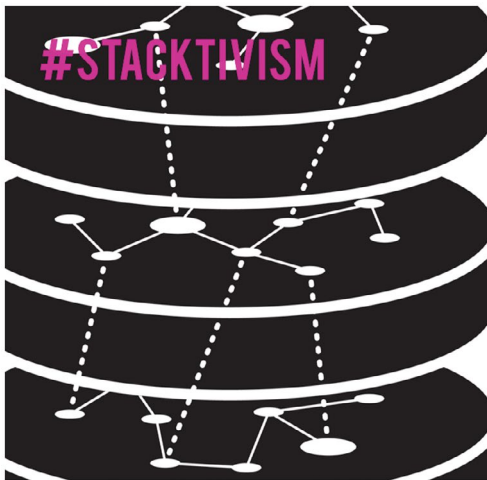


mobile network in Figure 2. In this scene a child holds a device that emits cute little clouds that stand in for the vast, ramifying, material infrastructures that enable the portability of these mobile devices.<sup>8</sup>

These widely upheld tropes of immateriality are not new, as Blanchette<sup>9</sup> describes, the myth is prevalent in the history of electronic communications dating back to the telegraph. Quoting Rosenheim,<sup>10</sup> the promise of the telegraph is described as a metaphysical one – ‘by the annihilation space and time, it allows humankind to escape physical limitations. The power and ubiquity of electricity networks are metaphorically attached to a newly disembodied consciousness.’<sup>11</sup> Bringing the discussion into the digital era, he draws a connection with the emergence of networked computers, where we see a rise of similar discourses,<sup>12</sup> that provide further momentum to the idea of communications technology as unbound from the material world. In the context of Internet connectivity, Mattern citing Mackenzie,<sup>13</sup> describes a similar narrative at work but as Mackenzie<sup>14</sup> points out, our wireless access to the network, via Wi-Fi, at work, home and school is neither as untethered or as ethereal as it seems. Being wireless, or ‘wirelessness’, actually requires a vast amount of wires looping the globe and traversing underground through towns and cities.

Debunking what Timo Arnall<sup>15</sup> describes as this ‘myth of immateriality’ surrounding communications infrastructure and technologies has become quite a popular territory for practice-led critical enquiries. These projects can broadly be described as attempts to counter the consequences of a process that Cubitt<sup>16</sup> (2014, 1) outlines as, the ‘technologization of communication’ from letter post to electronic network, that implies diminishingly visible communications channels with progressively greater influence in our everyday lives. In other words, these projects could be seen to aim at what Mattern<sup>17</sup> neatly summarizes as ‘infrastructure literacy’, that is, they attempt to enable us to see and better understand disappearing technologies that we are increasingly called to work with and are reliant upon. A number of these contemporary projects and texts concerned with a broader range of infrastructures can be found via the #stacktivism hashtag and are also elaborated in Jay Springett’s blog (Figure 4). Shannon Mattern’s<sup>18</sup> *Infrastructural Tourism* article on the *Design Observer* website is also a useful resource for critical insight into similar art and design projects in the US and Europe. However, for this article the focus is on communication infrastructure and in the following section I discuss two projects that I felt represented two prevalent themes regarding the legibility of communication infrastructures.

The first theme of concern for practitioners is the visibility of communications infrastructure and technologies and for Arnall<sup>19</sup> this concern is framed in terms of the implications for interaction design practice and research. Specifically, he seeks to counter the notion that invisibility is an inevitable and desirable quality for ubiquitous computing, Human Computer Interaction (HCI), interface technologies and parts of interaction design. As an example of this ‘invisibility’, he points to the smooth surfaces of Apple iOS software that bears little relation to the technical infrastructures below and expresses a concern that all this smoothing over, or ‘black-boxing’ of natural edges, seams and the transitions that constitute technical systems, leads to a loss of agency for both designers and users<sup>20</sup>. In response, he posits the concept of ‘immaterials’ to describe the invisible aspects of interface technologies such as radio-frequency identification (RFID) and aims for us to consider them as ‘compositional’, that is, part of mix of physical materials in the design process. The concept also operates as a call to subject these ‘immaterials’ to ‘investigation, exploration, and communication of technical and interactional phenomena’ in other words; ‘for the opening up of black-boxes’.<sup>21</sup>



*we cannot have a conversation about something whilst it remains unseen*

#stacktivism is a term that attempts to give form to a critical conversation & line of enquiry around infrastructure & the relationship we have to it

there are many people beginning to shape/have this conversation ::

**Keller Easterling** : *Extra Statecraft*

**Jo Guldi** : *Roads to Power: Britain Invents the Infrastructure State*

**Timo Arnall** : *No to NoUI*

**Benjamin Bratton** : *Geopolitics of The Cloud*

**Artist/Critical Engineer** : *Julian Oliver*

**Vinay Gupta** : *Simple Critical Infrastructure Maps*

**Jay Springett** : *Who owns the means of not dying?*

**\*\*JULY 13 2013 LONDON UNCONFERENCE\*\***

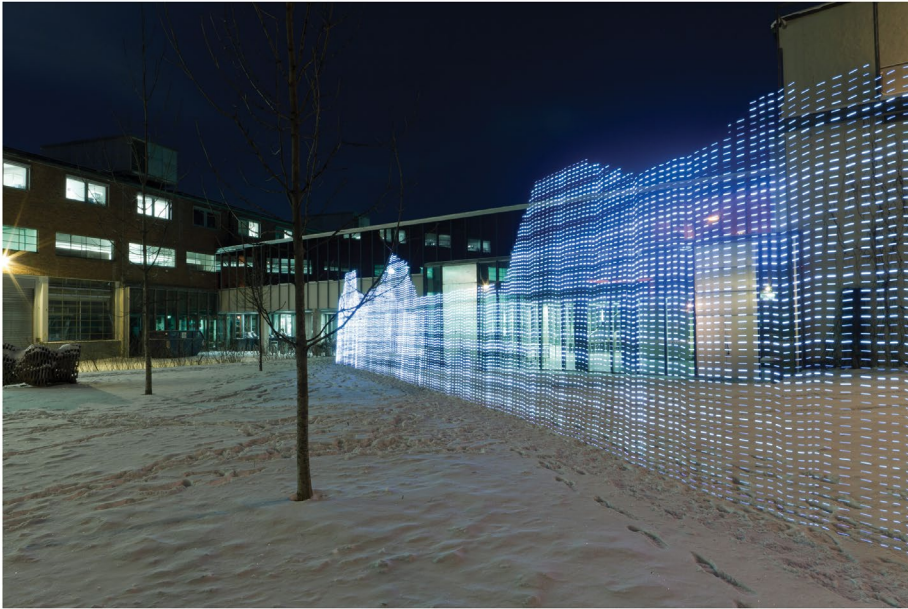
**stacktivism.tumblr** for a curated collection of links  
follow **@stacktivism** to join the conversation

Figure 4. Stacktivism website by Jay Springett and Andrew Brown. Source: Jay Spriggett 2013.



Figure 5. Light Painting WiFi by Timo Arnall, Jørn Knutsen and Einar Sneve Martinussen. Source: Timo Arnall 2010.

For Timo Arnall and collaborators Sneve Martinussen, Jørn Knutsen, Jack Schulze and Matt Jones working with these immaterials through interaction design practice research is the method that opens up or renders visible these technical systems. As an example, an output from their *Immaterials: Satellite Lamps* (2014) project is a film showing a series of large flickering spherical lights mounted on wooden tripods standing on city streets, that change brightness according to the accuracy of received signals from Global Positioning System (GPS) satellites overhead. The shimmering lights remind us of our immersion



**Figure 6.** Light Painting WiFi by Timo Arnall, Jørn Knutsen and Einar Sneve Martinussen.  
Source: Timo Arnall 2010.



**Figure 7.** Border Bumping by Julian Oliver uses location data gleaned from mobile devices as people cross national borders. The moments of slippage, when network coverage jumps across national boundaries (often before we do) are used to redraw borders on a map.  
Source: Julian Oliver 2013.

in unseen signals and point to the inconsistencies and what Chalmers, MacColl, and Bell<sup>22</sup> call 'seams', in what is usually considered a ubiquitous and pervasive network. In the *Immaterials: WiFi Light Painting* (2011) project (Figure 5 and 6), a series of LED lights attached to a mast

also respond to the Received Signal Strength of Wi-Fi networks that permeate an urban environment. The subsequent long-exposure photographs of the mast being carried through the streets, reveal something of what Dunne and Raby<sup>23</sup> call the 'hertzian space' of devices, in environments, invisibly communicating via electromagnetic radiation all around us. In both examples, the process of working with these immaterials is a way to learn about their properties to inform future design work and counter the notion of technology as seamless and invisible by evidencing its materiality.

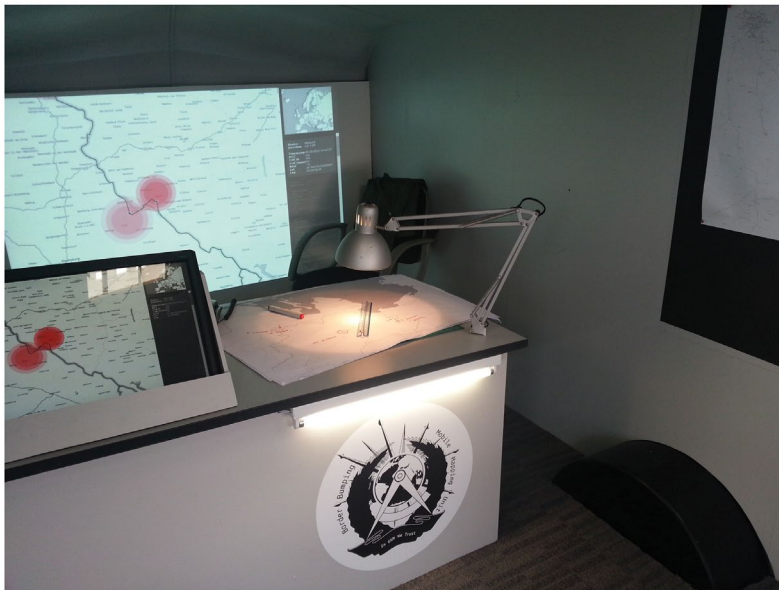
If the first theme concerns visibility and materiality of infrastructure, a second theme that emerges in textual and practice-based enquiries into communication infrastructure is how these networks work for and against the networks of nation states. This topic is the focus of theorist Benjamin Bratton's (2014) *Stack* concept, which he derives from the modular layering of software infrastructure<sup>24</sup> and uses to describe different scales of 'planetary computation', from vast global energy grids and urban software, through to self-quantification technologies. In keeping with the theme of legibility and mapping, he describes the stack as a schema, a hypothetical plan that attempts to make the composition of new structures of power 'more legible and more effective'. To put it another way, he has drawn up this conceptual tool to try to make sense of what is happening as modern states, territorial, legal and political run with and at times against the grain of global material-information systems that comprise a Stack.

Bratton's<sup>25</sup> interest in how infrastructures distort and deform traditional modes of political geography, jurisdiction, and sovereignty, is shared by Keller Easterling,<sup>26</sup> who describes the phenomena as 'Extrastatecraft' (examples can be found on a website of the same name). In the context of communications or mobile media infrastructure, this theme is taken by critical engineer Julian Oliver's *Border Bumping* (2012) project. The Border Bumping application runs on a smartphone, collecting data on mobile masts and the location of the device as a user approaches, or crosses, national borders. Oliver was particularly interested in the moments of slippage, when a cellular device hops from one network to another, often crossing national borders before we do so ourselves. These moments of discrepancy, when one country's mobile network transgresses the national borders of a neighbouring country are gleaned from the device and uploaded to a central 'Border Bumping' server. The data sent by 'agents' running the Border Bumping application was then used by Till Nagel and Christopher Pietsch to design and develop a map that plots redrawn national boundaries based on these moments of slippage between the national border and the borders of the mobile network (Figures 7–9). In an early iteration of the project in the UK a caravan was re-purposed as a mobile cartography office, that enabled visitors to view the map as it was updated with border deforming or bumping incidents. The ongoing collection and rendering of these disparities results in a map that plots juxtaposed borders drawn by mobile networks over those drawn by states.

Moving on from the work of Arnall<sup>27</sup> and Oliver<sup>28</sup> my own research aimed to pursue a more situated account. That is, a study that focussed on a particular instantiation of the mobile media network, a specific mobile mast. This approach follows Parks<sup>29</sup> assertion that studies of media infrastructure should adopt localized or 'more node-centric and materialist approaches' to open up the normally invisible social-cultural and political issues enmeshed with these technological objects. As infrastructures tend to be innocuous and, on the surface at least, frankly rather boring, I began to trawl the Internet for controversial pieces of infrastructure as a 'way in' to the project. This approach is informed by Madeline Akrich and Bruno Latour, two theorists concerned with understanding or describing technical objects.



**Figure 8.** Border Bumping by Julian Oliver uses location data gleaned from mobile devices as people cross national borders. The moments of slippage, when network coverage jumps across national boundaries (often before we do) are used to redraw borders on a map.  
Source: Julian Oliver 2013.



**Figure 9.** Border Bumping by Julian Oliver uses location data gleaned from mobile devices as people cross national borders. The moments of slippage, when network coverage jumps across national boundaries (often before we do) are used to redraw borders on a map.  
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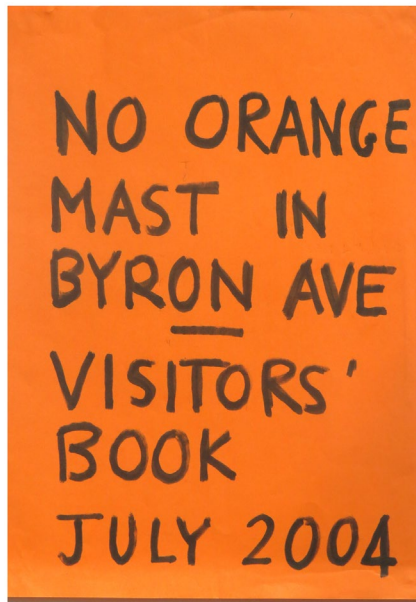
As Latour<sup>30</sup> puts it in his Rules of Method; ‘we either arrive before the facts and machines are black-boxed, or we follow the controversies that reopen them.’<sup>31</sup> Or, as Akrich<sup>32</sup> suggests, we need to find circumstances in which there is disagreement, negotiation and the potential for break down, so that adjustments between different actants are rendered visible. In the case of a mobile phone mast, which would qualify as a ‘stabilized technology’, Akrich<sup>33</sup> points out that it is vital we study disputes, to look at what happens when things go wrong. Fortunately, I did not have to look far for controversy, as Winchester played host to a lengthy five year dispute between a mobile operator and local residents concerning the siting of a mobile mast on Byron Avenue, which subsequently became the focus of my work.

## Methodology and practice process

To approach the question of how to render visible the material, social and political issues that surround the mobile mast in Byron Road, my approach was a mix of practice and textual research. On the one hand I was keen to use design practice to get to grips with the affordances of mobile technology itself. On the other hand, I also utilized desk research to explore in more detail the relations enmeshed with this piece of mobile infrastructure. The theoretical framework I used to guide my practice and understanding of this technical object was Bruno Latour’s actor–network theory (ANT). As Law<sup>34</sup> explains, actor–network developed as a theory to account for how scientific knowledge is produced from ordered networks of *both* social and technical ‘bits and pieces’ or actants. Of particular utility for this project is Latour’s<sup>35</sup> definition of the actor–network as transforming a substance from a matter of fact to ‘matters of concern’. From his perspective the network is a concept that recognizes dynamic interaction among actors, rather than a fixed organizing structure and as methodological tool it should be seen as ‘a mode of inquiry that learns to list, at the occasion of a trial, the unexpected beings necessary for any entity to exist.’<sup>36</sup> In other words, taking an actor–network perspective the mast is a network of relations, my research process was then ‘to follow the actors’ or actants<sup>37</sup> and gather as much material as I could about the mast as an actant in a dynamic network. To do this, I explored the dispute on Byron Avenue via news articles, planning regulations, and Government reports. Key to this research process was an extensive archive kept by local campaigner Karen Barratt, who also generously gave her time to be interviewed and discuss the protest. In this paper it is not possible to cover the research process from beginning to end, instead, I pull out interesting strands with resonance for communication design. The first strand concerns how design was employed by the protesters against the siting of the mast and network operator. The second concerns the design of maps or the process of mapping as an attempt to grasp the relations enmeshed with the mast and as an approach to understanding infrastructure in general.

## DIY tactics

An intriguing photograph in Lisa Gittelman’s<sup>38</sup> *Holding Electronic Networks by The Wrong End* shows a weathered wooden telephone pole punched with densely packed metal staples. As Gittelman describes, these rusting staples are all that is left of countless notices posted up by local residents to advertise yard sales, missing pets, election posters, advertisements for language lessons and laundry services. Notices with the bottom edge of the page cut like a fringe allow passers-by to tear off contact details. The leaflets, she explains, are rather like



**Figure 10.** Posters affixed to the contested mobile mast by local residents. Source: Karen Barratt 2004.

graffiti, a sort of trespass, 'communications smuggled into public'. The comparison is apposite, as Gittelman points out, fly-posting leaflets on telephone poles in the US is illegal under an anti-littering ordinance. So part of what is interesting about this image, is that the leaflets highlight a contrast between owners and others, the prescribed structural conditions of the urban environment and the array of 'DIY tactics of everyday life by which people respond'.

On reading the Gittelman<sup>39</sup> article it became clear that a similar set of contrasts and tactics were operating at the site of the mast and subsequent protest on Byron Avenue. The residents and campaigners also adopted DIY tactics to oppose the siting of the infrastructure, putting up posters on the mast to draw attention to their campaign and communicate with each other. In contrast to its conventional role as an inconspicuous bit of communications infrastructure designed to blend into the environment, with concealed radio equipment and dark green coloured paint. The campaigners turned the mast into an object of display, and in doing so the mast itself became a form of communication. Also, the site of the mast became a gathering point for the residents, a place for vigils and a focus for protest practices, that included the formation of a human chain from the mast to the local primary school (Figures 10–13).

What I felt was interesting about the residents alternative uses for the site of the mast and their graphic interventions pinned to the mast, is that they raised the question of how these infrastructure sites and objects are articulated, or not. How should these technical objects in our environment be treated? Pretending they do not exist, or disguising them seemed to be at one end of a spectrum – and the protesters interventions suggested an alternative that looked to promote an understanding of these technologies. Taking Gittelman's<sup>40</sup> article and the activities of the residents as a cue, I started to question through design practice how the infrastructure itself could become, as Parks<sup>41</sup> puts it, a site for generating public knowledge



**Figure 11.** Local resident Karen Barratt with her son during a sit-in protest at the site of the mobile mast. Source: Karen Barratt 2004.

about these systems and dialogue. In an attempt to answer this question I produced a quick prototype mobile web application using cut and paste bits of jQuery Mobile code, far from a polished piece of design work this quite rudimentary sketch (Figure 14) served as a thought experiment to consider how mobile masts could become objects of display that demystify themselves. Very much in the spirit of the DIY tactics used by the residents a poster was put up near the mast pointing users to a web application that one could access via a smartphone to find out information about the mast.

Although the outcome of this attempt to give form to the idea of infrastructure literacy and raise the visibility of the mast was very basic, I was able to draw insights from the design practice process about the technology. For example, the actual process of making a mobile application made apparent how different proprietary software and hardware infrastructures make for an incredible complex and difficult terrain to negotiate. Before arriving at the solution to produce an HTML based application and a simple URL posted on the mast, I had ploughed a lot of time into trying to use the location sensors and Near Field Communication stickers via MIT's App Inventor. However, in the end, I adopted a slightly more straightforward approach as the non-compatible software, devices and constant tyranny of little or no backward compatibility began to hinder progress and energy. This practical experience of working with mobile media seemed to have resonances with Beer's<sup>42</sup> account of Graham and Marvin's<sup>43</sup> work on urbanism that identifies the city as a place increasingly reliant on complex, competing and at times incompatible infrastructures. In this sense the practice of design was useful in calling forth some of the issues concerning infrastructures that I may not have reached without this practical engagement.





**Figure 12.** Local residents protest at the siting of a mobile mast near to a local primary school by forming a human chain from the mast to the school.  
Source: Karen Barratt 2004.

## Mapping

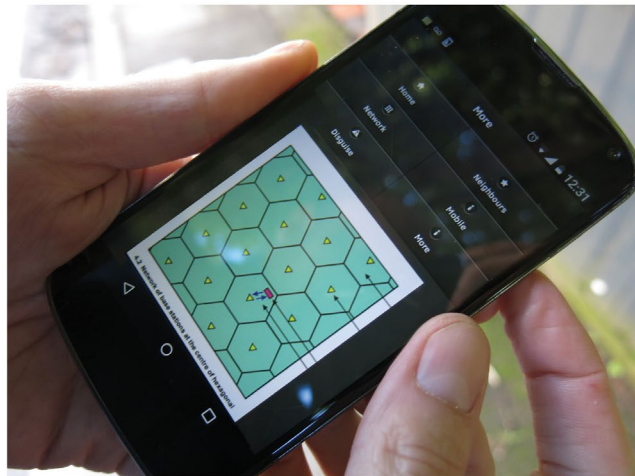
The second strand I want to pull from the project concerns my attempt to map infrastructure and the role that design could play in this endeavour. A key challenge to the mapping process is access to communication infrastructure is not easy, as these systems are often tucked away, hidden from view and hard to reach. In this sense they are not entirely dissimilar to orbital space, the subject of Parks<sup>44</sup> discussion of mapping, in which she points out that the communication networks have become quite remote both physically and intellectually. Therefore Parks<sup>45</sup> suggests that struggles over these sorts of domains, such as networks, that are inaccessible and imperceptible to most people, must take place in the symbolic



**Figure 13.** Karen Barratt and local residents during a sit-in protest at the site of the mobile mast. Source: Karen Barratt 2003.



**(a)**

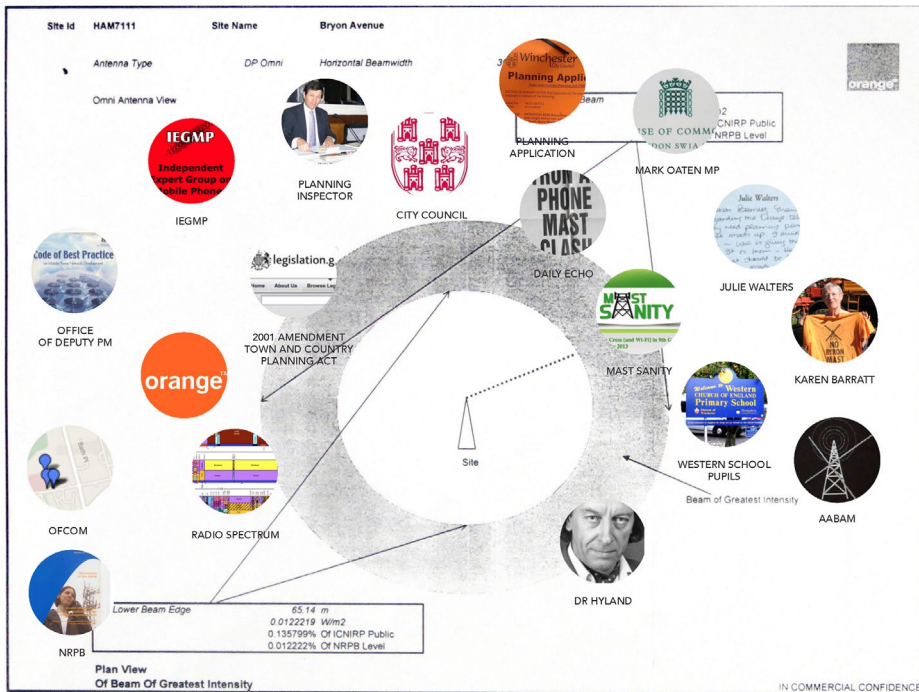


**(b)**

**Figure 14.** A quick prototype mobile web application that provides information about the contested mobile mast on Byron Avenue. Source: Author 2014.

economy. Through processes of mapping and visualization techniques, she argues, we can begin to render these places intelligible within discourse.

Initially I approached the process of mapping the mast, via a listing of the assortment of ‘things’ or actants I had discovered through the resident’s printed archive of press-cuttings concerning the protest. This listing process follows Shannon Mattern’s<sup>46</sup> description of Ian Bogost’s text *Alien Phenomenology* and his discussion of ‘ontographs’. Bogost<sup>47</sup> defines



**Figure 15.** A visualization of the human and non-human actants revealed by the controversy.  
Source: Author 2014.

ontographs as a way of describing the world, or general inscriptive strategy similar to that performed by a registrar, a way of cataloguing object relationships without necessarily offering clarification or description of any kind. He suggests the simplest approach to this task of 'cataloguing things' and 'the couplings of and chasms between them'<sup>48</sup> is the composition of verbal and visual lists. Importantly, this simple ontographical method brings to attention that 'things exist not only for us, but also for themselves and one another'. In 'a group of items loosely joined not by logic or power or use but by the gentle knot of the comma.'<sup>49</sup> My initial experiments with ontographs included image and text lists of the actants revealed by the controversy (Figure 15, 16), as well as groups of photographs of the mast taken over a number of years (Figure 17), all of which were collected on a blog: [byronavenue.wordpress.com](http://byronavenue.wordpress.com).

... Hampshire Constabulary,  
 Electro-magnetic radiation,  
 TimesOnline,  
 Winchester City Council,  
 Environmental Health News,  
 Charger,  
 Mast Sanity,  
 The Liberal Democrats,  
 Action Against Byron Avenue Mast,  
 Mobile Phone,  
 National Radiological Protection Board,  
 Caroline St.Leger Davey,  
 Orange Personal Communication Services Ltd.,

...Hampshire Constabulary,  
 Electro-magnetic radiation,  
 TimesOnline,  
 Winchester City Council,  
 Environmental Health News,  
 Charger,  
 Mast Sanity,  
 The Liberal Democrats,  
 Action Against Byron Avenue Mast,  
 Mobile Phone,  
 National Radiological Protection Board,  
 Caroline St.Leger Davey,  
 Orange Personal Communication Services Ltd.,  
 Office of Communication,  
 Diane Harrison,  
 Radio spectrum,  
 Battery,  
 Numbers,  
 Independent Expert Group on Mobile Phones,  
 Pulse,  
 Department of Health,  
 Voice,  
 Texts,  
 Health,  
 Microcell mast,  
 Contacts,  
 Wire,  
 The Town and Country Planning Act 1990,  
 Office of the Deputy Prime Minister,  
 Signal,  
 Julie Walters,  
 The Mid Hampshire Observer,  
 All Party Mobile Group,  
 Cell, Minutes,  
 The Planning Inspectorate,  
 Leigh Day and Co.,  
 Dr G Y Hyland,  
 Hampshire County Council,  
 The Court of Appeal,  
 McNicholas Construction Services,  
 Smartphone,  
 Calls,  
 Billing,  
 Microphone,  
 Microwave,  
 House prices,  
 Adam Homes Associates Limited,  
 Planning Inspector Martin Pike,  
 Deloitte and Touche,  
 Electricity,  
 Daily Echo,  
 MP Mark Oaten,  
 Karen Barratt,  
 Speaker,  
 Western Primary School,  
 Handset...

**Figure 16.** An ontograph or list of the human and non-human actants revealed by the controversy.  
 Source: Author 2014.



(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)



(i)

**Figure 17.** Photographs of the site of the mobile mast on Byron Avenue taken by local residents over a period of more than 10 years.  
Source: Karen Barratt 2014.

Office of Communication,  
Diane Harrison,  
Radio spectrum,  
Battery,  
Numbers,

Independent Expert Group on Mobile Phones,  
Pulse,  
Department of Health,  
Voice,  
Texts,  
Health,  
Microcell mast,  
Contacts,  
Wire,  
The Town and Country Planning Act 1990,  
Office of the Deputy Prime Minister,  
Signal,  
Julie Walters,  
The Mid Hampshire Observer,  
All Party Mobile Group,  
Cell, Minutes,  
The Planning Inspectorate,  
Leigh Day and Co.,  
Dr G Y Hyland,  
Hampshire County Council,  
The Court of Appeal,  
McNicholas Construction Services,  
Smartphone,  
Calls,  
Billing,  
Microphone,  
Microwave,  
House prices,  
Adam Homes Associates Limited,  
Planning Inspector Martin Pike,  
Deloitte and Touche,  
Electricity,  
Daily Echo,  
MP Mark Oaten,  
Karen Barratt,  
Speaker,  
Western Primary School,  
Handset ...

Once the mobile mast became the subject of a dispute, portions of the vast network of relations that it was a part of, became visible. As my attempts to map the mobile mast reveal, all kinds of people, objects, regulations and relations came into view at this point. Whereas before the dispute, all of these actants were the invisible parts of the 'black-box' or mobile mast. In this regard, choosing a local site and protest proved to be an effective approach, in particular, the primary research I conducted that engaged the 'local' community, council and planning on one hand, and the 'global' networks, operators and systems on the other hand – and how they came together in the specific site and protest was potentially rich.

Returning to the actor–network theorists that initially guided my work, they understand power to be the product of a set of (strategy-dependent) relations rather than a possession.<sup>50</sup> A key part of Latour's actor-network theory is the notion that actants become weaker or stronger as a result of their alliances, however in my verbal and visual mappings of the mast I found that it was more difficult to express those alliances or relations between the

different actants. A feature of the Wordpress platform I was using to build the website was the requirement to split content into discrete fields of content and pages. In retrospect, I question how I could have found a way to make these links or alliances between the different actants more explicit within the map, so that the relations were prioritized.

## Conclusion

Beer<sup>51</sup> drawing on Benjamin's<sup>52</sup> *The Arcades Project* suggests that infrastructures can be viewed as material instantiations of wider social and political movements. This is a perception echoed by Dourish and Bell,<sup>53</sup> but they also highlight a second 'experiential perspective' that calls to attention how embedded infrastructures shape individual actions and experience. Taking this as a cue, the central question this project asked was how to render visible that shaping, or to draw on actor-network theory, how to account for the material artefacts of mobile media infrastructure and social, political economic issues alike?<sup>54</sup> As discussed, this attempt to address the materiality of mobile media infrastructure is apposite when their status as infrastructure, the 'technologization of communication',<sup>55</sup> 'myth of immateriality'<sup>56</sup> and commercial narratives seek to diminish the visibility of these material infrastructures.

In thinking about the role of design in promoting the visibility of communication infrastructures, the project highlights an opportunity to map these complex systems and make them legible to citizens. Also, the DIY approach taken by the residents and evidenced in the work of Arnall<sup>57</sup> highlights the need for designers to work with these seemingly immaterial aspects of technologies/infrastructures to expose and demystify them. In terms of an approach to research, this seems to chime with Ratto's<sup>58</sup> description of critical making, in which the emphasis is not on the outcome so much, as the shared construction activity as a site for 'enhancing and extending conceptual understandings of critical socio-technical issues'. I would frame my own engagement with designing a mobile application in this way and point to the value of using practice-led research (Smith and Dean<sup>59</sup>) to gain literacy not only of the technology, but also to test or explore the critical or theoretical components of a project.

In closing, the importance of thinking about infrastructure is underlined by Graham and Marvin<sup>60</sup> when they suggest that the networked character of modern urbanism is perhaps its single dominant characteristic. Technological networks, such as the mobile phone network, form part of what Beer<sup>61</sup> describes as a vision of the city as a place reliant on an increasing dense and complex infrastructure and infrastructure related processes. For Graham and Marvin<sup>62</sup> the key question in this context is; how do we imagine these massive technical systems that interlace, infuse and underpin cities and urban life? This project sought to map a small fraction of a technical system or infrastructure by focusing on fissure or break, when 'normal service' was disrupted, a moment when the invisible infrastructure became visible. I wanted to use that instance to describe some of the actants that comprise the network. The value of the localized perspective adopted, is that it highlighted how we experience infrastructure as being something highly contingent and that infrastructure and technologies 'don't have simple, definitive, and universal urban impacts in isolation',<sup>63</sup> As Lievrouw<sup>64</sup> points out, technological forms develop in highly situation-dependent ways. The human actants, ideas and symbols associated with them, as well as material artefacts considered by ANT as interlinking webs of relations are dynamic, meaning that technical systems evolve, stabilize, breakdown or reorganize in unexpected ways.<sup>65</sup> This was made apparent by the

protest on Byron Avenue and when the mast was eventually chopped up and hauled away, not because of residents' concern, but because it was deemed no longer required after the merger of two mobile networks to form Everything Everywhere.

## Notes

1. Parks, "Around the Antenna Tree."
2. Parks, "Around the Antenna Tree."
3. Parks, "Around the Antenna Tree."
4. Parks, "Around the Antenna Tree," n.p.
5. Star, "The Ethnography," 379.
6. Horst, "The Infrastructures."
7. Horst, "The Infrastructures," 148.
8. Mackenzie 2002, cited in Thrift, *Non-representational Theory*, 9.
9. Blanchette, "A Material History."
10. Rosenheim, *The Cryptographic Imagination*.
11. (Blanchette, "A Material History," 3.
12. Barlow, "A Declaration."
13. Mattern, "Infrastructural Tourism," citing Mackenzie, "Wirelessness."
14. Mackenzie, "Wirelessness."
15. Arnall, No to NoUI
16. Cubitt, "Telecommunications Networks," 1.
17. Mattern, "Infrastructural Tourism."
18. Mattern, "Infrastructural Tourism."
19. Arnall, "Exploring 'Immaterials'"
20. Arnall, "Exploring 'Immaterials'"
21. Arnall, "Exploring 'Immaterials'"
22. Chalmers, MacColl and Bell, "Seamful Design."
23. Dunne and Raby, *Design Noir*, 26.
24. Blanchette, "A Material History," 9.
25. Bratton, "The Black Stack"
26. Easterling, "Extrastatecraft."
27. Arnall, "Exploring 'Immaterials'"
28. Oliver, "Border Bumping."
29. Parks, "Around the Antenna Tree."
30. Latour, *Science in Action*.
31. Latour, *Science in Action*, 258.
32. Akrieh, "The De-scription," 207.
33. Akrieh, "The De-scription," 211.
34. Law, "Notes on the Theory," 2.
35. Latour, *Reassembling the Social*, 114.
36. Latour, *Reassembling the Social*, 5.
37. Latour, *Reassembling the Social*, 12.
38. Gittelman, "Holding Electronic Networks."
39. Gittelman, "Holding Electronic Networks."
40. Gittelman, "Holding Electronic Networks."
41. Parks, "Around the Antenna Tree."
42. Beer, "Popular Culture," 24.
43. Graham and Marvin, *Splintering Urbanism*.
44. Parks, 2013.
45. Parks, 2013, 62.
46. Mattern, "Infrastructural Tourism."
47. Bogost, *Alien Phenomenology*.



48. Bogost, *Alien Phenomenology*, 50.
49. Bogost, *Alien Phenomenology*, 51.
50. Wajcman, "Reflections," 452.
51. Beer, "Popular Culture," 23.
52. Benjamin, *The Arcades Project*.
53. Dourish and Bell, "The Infrastructure," 413.
54. Lievrouw, "Materiality and Media," 27.
55. Cubitt, "Telecommunications Networks," 1.
56. Arnall, No to NoUI
57. Arnall, "Exploring 'Immaterials'"
58. Ratto, "Critical Making", 254.
59. Smith and Dean, "Introduction."
60. Graham and Marvin, *Splintering Urbanism*.
61. Beer, "Popular Culture."
62. Graham and Marvin, *Splintering Urbanism*, 8.
63. Graham and Marvin, *Splintering Urbanism*, 11.
64. Lievrouw, "Materiality and Media," 30.
65. Lievrouw, "Materiality and Media," 30.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

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## EXHIBITION REVIEW

# All makers now? Craft values in 21st century production

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Visions of twenty-first century production, at least the kind popularized by science magazines and technology blogs, promise a near future in which we, the consumer, become the makers of our own stuff. It is a future foreshadowed by the drag and drop templates of desktop publishing and the filters of photography apps, a future in which specialized design skills become routinized in domestic software. Designs for digital devices may be downloaded, customized on-screen and 3D printed at home. Furniture will no longer be shipped around the world, but cut, bent and assembled to order by computer-controlled machines located in every town. If our objects can be specified digitally, we are told, they may be shared globally and made locally, enabling networks of co-creation and novel business models to emerge. This context formed the foundation of *All Makers Now?: Craft Values in 21st Century Production*, a two day conference presenting academic research with a practitioner-based approach at Falmouth University, UK.

The promise of ‘democratized’, ‘decentralized’, or ‘personal’ production is not without precedent, stretching back at least as far as William Morris’ craft-driven socialism, and forward through Stewart Brand’s *Whole Earth Catalog* of late sixties self-sufficiency. What is new, however, and what inspired *All Makers Now?*, is the ever-increasing access to computer-controlled fabrication equipment, and the digital tools necessary to design for such machines. As 3D printers, laser cutters, open-source electronics and online information sharing provide new opportunities for low-volume production, there is a burgeoning community of craft practitioners and academics claiming this as a key area for future practice. In contrast to the one-size-fits-all nature of industrial design and mass manufacture, the craftsman’s approach to creating bespoke objects is held up as a model for a more individualized world of things.

Despite the question in its title, *All Maker’s Now?* managed to avoid intractable debates over the more radical predictions for twenty-first century production. No one argued for or against an entirely homemade, 3D-printed future. We heard instead from a diverse range of practitioners exploring the potential of existing techniques – how they can be used, modified and shared with others.

There were those pushing the limits of the machines they worked with, designing their own, or modifying mainstream software to provide idiosyncratic results. Keynote speaker Fred Beyer gave an insightful history of computer-aided design and manufacture, from his perspective as a furniture maker. Beyer’s struggle with the limitations of digital design in the early 1980s, whilst now humorously ‘old-fashioned’, still resonated

with attendees. For those attempting to coax ceramic slip from a CNC syringe, programme lasers to fuse textiles, or print on glass, working experimentally at the intersection of the digital and physical world continues to reveal the resistance of materials.

As well as exploring how things can be made digitally, practitioners also demonstrated how digital technologies can be incorporated into artefacts, thereby extending their palette as craftspeople. Keynotes by Jayne Wallace and Chris Speed offered an insight into how digital devices can move beyond the realm of consumer electronics, providing more meaningful, personal links between digital networks and the physical world. In this, it is the craftspeople's response to individual needs, and their ability to foster new forms of user engagement, that has been repurposed for contemporary making.

Hosted by Falmouth University's Autonomic Research Group, *All Makers Now?* also made a valuable contribution to the emergent issue of how best to support practice-based research in an academic conference setting. As with the *Research Through Design (RTD)* conference (2013, Newcastle Gateshead, UK and 2015, Cambridge, UK), the richness of practice-based research inspired a wide variety of discussion. Whilst a presenter may have planned to consider overarching research goals and achievements in a seminar session, fellow practitioners were often as interested in the minutiae of a project, the details of how exactly something was made. Both *RTD* and *All Makers Now?* managed these diverse interests by encouraging conversation across three formats – through an exhibition of artefacts; thematically grouped seminar presentations; and workshops hosted by a selection of presenters. It is a model that provides a good fit with practice-based research. Seminars took on the familiar feel of art and design school 'crit' sessions, often with an emphasis on the future direction of practitioners' work. And the *All Makers Now?* workshops proved particularly engaging – presenters had gone to great lengths to transport manufacturing equipment, setting up temporary versions of their real workshops in order to demonstrate their techniques and works-in-progress. Future conferences looking to present practice-based research might benefit from taking a similarly literal approach to the *workshop* session.

Throughout the conference, the focus on 'craft values' at *All Makers Now?* brought to mind the discussions that emerged with the advent of desktop publishing. As advances in 3D production technologies enable more people to design and make things, questions regarding criteria of quality, expertise and the distinction between professionals and amateurs will no doubt continue. Conferences like *All Makers Now?* offer an important vehicle for craftspeople to steer the development of digital manufacturing tools early on in their development, pushing the possibilities of low-volume production techniques and exploring their potential as expressive media. And for design research more generally, *All Makers Now?* showed that, where debate is structured around designed *things*, both made and in the making, the academic conference can become a valuable forum for practice-based research.

## Notes on contributors

*Philip Luscombe* is a product and furniture designer, with a deep interest in the processes of making and their relationship to design. His current PhD research investigates the improvisatory nature of workshop practice. In the context of increasingly digitized manufacturing processes, Philip explores the contrast between understandings of production that prioritize accuracy to a predetermined form and those that rely on step-by-step adaptation. He teaches, as well as designing furniture for production.

## The last digital revolution?

Rebecca Ross 

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The Barbican Centre's 'Digital Revolution' exhibition (3 July–14 September 2014) has generated a fair amount of debate in mainstream newspapers as well as on more specialized corners of the Internet, in particular the DevArt section, commissioned by Google.<sup>1</sup> Its critics, including the instigators of the 'Hack the Artworld' alternate virtual exhibition, argue that Google behaved exploitatively in inviting less established developer/artists to labour for free competing for a commission, ultimately awarded to Cyril Diagne and Béatrice Lartigue, where more established developer/artists including Karsten Schmidt and Zach Lieberman were funded from the early stages of their projects.<sup>2</sup> Its defenders argue that rather than corporatist manipulation, in this case the work was facilitated by well-meaning individuals employed by Google who perhaps mis-judged a few details.<sup>3</sup> This debate, and the curation and partnership arrangements behind the show, involving Bloomberg and the Technology Strategy Board in addition to Google, are important because they call attention to an increasingly pervasive slippage in how we perceive art, business and technology.

The title 'Digital Revolution' is a somewhat cringe-worthy contradiction in 2014. Such a cliché begs the question of what motivations underlie the decision to host this kind of exhibition, if not to convey some new or distinct insight. Over the past few years, the Barbican Centre has been establishing a pattern of large scale digital installations installed in the Curve Gallery and the foyer spaces with works and events such as 'Various Self Playing Bowling Games' by Cory Arcangel (2011), 'Rain Room' (2012) by Random International and 'Momentum' (earlier in 2014) by United Visual Artists. The joyful and accessible experiential qualities of 'Rain Room' in particular drew massive crowds and one could imagine that this inspired the Barbican to look for ways to expand their profile as a large scale cultural institution that can carry off projects with extreme technological underpinnings. Part of the reason that the on the ground experience of 'Digital Revolution' was less than satisfying, however, was a breakdown of the Centre's ability to cope with the technology. At almost every point during what was a large and ambitious exhibition some portion of the work was malfunctioning or down for one reason or another. Some of this was due to the need to display software on consoles and PCs corresponding to the times in which they were originally developed.

Where it was working however, in this regard, the exhibition served as a reminder of the importance of how we archive and document our digital history. Actually getting to try *The Aspen Movie Map* (Andrew Lippman, 1978), navigate the first pages of the *World Wide Web Project* (Tim Berners Lee, 1991) on a genuine Next or re-experience the anarchy of the original experiments of *jodi.org* (Joan Heemskerk and Dirk Paesmans, 1995)

was both personally pleasurable and a productive reminder of how easy contemporary culture allows the kinesthetic experience of pixels and programs to slip through its fingers. The wide scope of the eight sections, titled 'Digital Archeology', 'State of Play', 'We Create', 'Creative Spaces', 'Sound+Vision', 'Our Digital Futures', 'DevArt', and possibly the most modest but meaningful section, the 'Indy Games Space', is best described as concurrently overwhelming and incomplete, albeit with enough examples of interesting and important more and less known works (too many to list here) to make it worth a visit.

The only specific questions that 'Digital Revolution' raises however are about the blended relationship between independently initiated work and corporate production. This was partially addressed by the curators directly in their decisions, for example, to showcase the computer generated special effects in Alfonso Cuarón's blockbuster film *Moon* (2013) in the same exhibition as the work of Anttirom's 'interface as medium' experiments (1994). This aspect of the exhibition was exciting for its celebration of a perceived porosity and enthusiasm for the agency and inventiveness of independent creators. This idea is not scrutinized carefully enough though, especially when one notes that, in addition to providing support for the exhibition and commissioning/curating work, with the inclusion of Chris Milk's video for Arcade Fire's *The Wilderness Downtown* (2010), which is the best and most famous of Google Creative Labs' Chrome experiments, Google is a de facto exhibitor. This positioning of artistic practice as corporate crowd-pleaser is reinforced by the dedication of an entire room to *Pyramadi*, a musical projection-based installation by Will.i.am and Yuri Suzuki that celebrates a future of high velocity collaboration between musicians, music technologists, and the music business (2014). The imaginary of such a well lubricated and uncritical interchange between artistic production, technological transformation, and corporate power is of deep concern because it places in jeopardy the role of art in future revolutions. 'Digital Revolution' will travel to museums and galleries internationally over the next three years.

## Notes

1. Jonathan Jones, 'Hack the Art World: The Dissident Techies Tackling Google' *The Guardian, On Art Blog* (21/07/14) <http://www.theguardian.com/artanddesign/jonathanjonesblog/2014/jul/21/hack-the-art-world-digital-revolution-barbican-protest> (accessed 01/09/2014).
2. See 'An open letter to Larry & Sergey' <http://hacktheartworld.com> (accessed 01/09/2014).
3. See <http://pastebin.com/0pbbL72y> (accessed 01/09/2014).

## Notes on contributor

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## The Archive of the International Council of Graphic Design Associations at the University of Brighton

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Histories of graphic design are often image led, inevitably so: the work itself and the identity of its designer take centre stage. Yet behind the absorbing and often dazzling outcomes of selected commissions, competitions and projects there can lie an equally fascinating but less spectacular paper trail that reveals how work was won and embarked upon, how it was conceived and costed, produced and printed, how it circulated and then, often after an interval, the ways in which it resurfaced as slides for lectures, as illustrations for yearbooks, or framed for retrospectives. Certainly, the archive of the designer or design partnership tends to comprise some of these elements to varying degrees. What is retained varies from small scraps of paper with a note or a sketch, to extensive runs of files and folders, particularly in the case of complex corporate identity projects. However, alongside the monographic form of the designer's archive – student work, early projects, mid-career triumphs and failures, the distinction or disappointments of seniority – we should also consider other bodies of documentation that frame the designer in a rather different way.

One perspective would be from that of the organizations established to represent the design professions. Often specific to designers from a particular discipline, or from a particular country or region, these bodies played a vital role in collective representation, in securing professional identity, and in providing a forum for debate over shared concerns. At the next level we could consider the organization to which these national bodies were affiliated. In the case of graphic design this was established in London, in 1963, as the International Council of Graphic Design Associations. Icograda sought to represent graphic designers on the world stage and to speak of the work and concerns of its membership with a united voice.

Such a multi-tiered footprint of the profession presents a way of thinking about graphic design in different ways, with designers as connecting elements between other members of the profession in other countries, as ambassadors for a national viewpoint, and as representatives of collective values rather than theirs alone. Shared concerns about professional identity and conduct, design education and the challenges of communicating in an unequal world are powerful narratives that Icograda's activities and reports articulate across the decades. They also thread through the archive continually, through the voices of its elected board and its membership.

Like all archives, the form of the Icograda archive is determined by the structures of governance and administration that ensured its functioning as an organization and the delivery of its activities. For example, communications with member associations are filed by country. The letterheads reveal how different organizations presented themselves, and hand- and typewritten correspondence in a variety of languages and modes of expression provides a textual and visual trace of the personalities of those designers elected to speak for their regional and national membership, the chronologies of correspondence reflecting the evolving shape of this international community over considerable distance and over many years.

Alongside membership records sit the series of papers relating to Icograda’s governance: the meetings of its executive board and its minutes, and the general assemblies and congresses where policies were debated and ratified and where presidents were elected. Moving to different cities at, generally, two-yearly intervals, the files reveal of the logistics of mobilizing a membership for meetings on this scale and the responsibilities of host organizations. The records include the core elements – the programme, the formal business, transcriptions of keynotes – as well as the menus of conference dinners, delegate badges and a few surviving T-shirts. (Figures 1 and 2)

Some of the richest material relates to the projects and concerns of members at particular times. The debate over design education is intense and sustained, and the voices of the protagonists project strongly from transcriptions of lectures and discussions. So too, does the long term commitment of those whose work ensured the smooth running of the organization, notably Marijke Singer (Secretary General 1970–77 and 1981–87) and Mary Mullin (Secretary General 1987–99), who brought administrative expertise and an insistence on high standards of governance. Similarly revealing are the challenges of

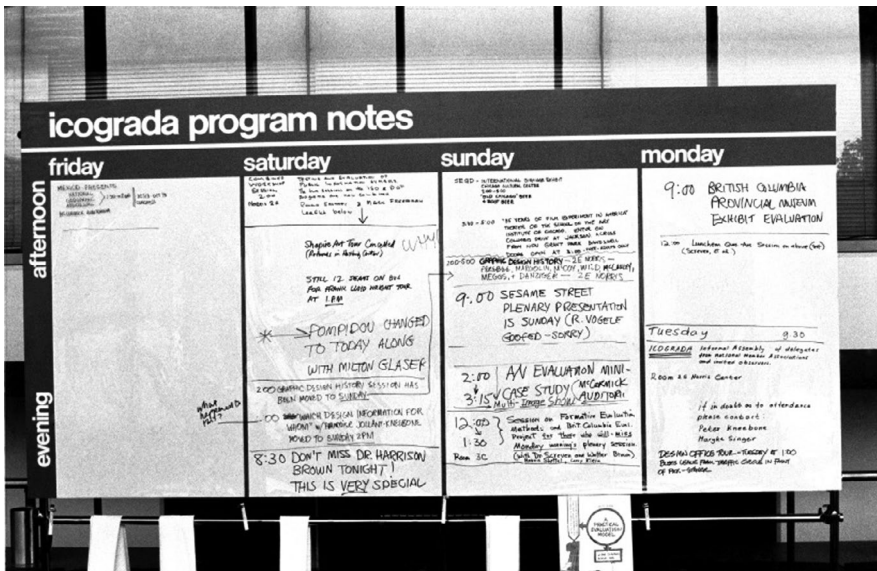


Figure 1. Information board, Icograda Congress, Chicago, 1978. Icograda Archive, University of Brighton Design Archives.





**Figure 2.** Delegates at the Icograda Congress, Bled, 1966. Front Row: Peter Hatch, Suzanne Tandy, John Tandy. Second Row: Stuart Rose, Dorothea Rose. Icograda Archive, University of Brighton Design Archives.

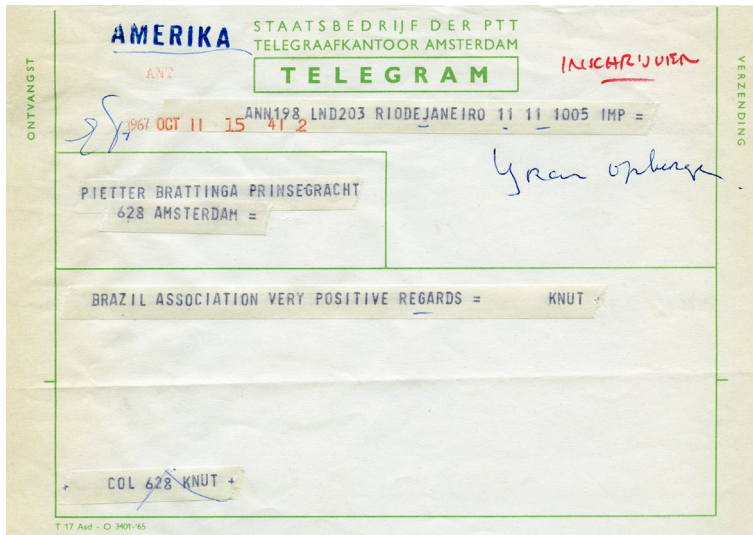
communicating with member associations behind the Iron Curtain during the Cold War, and of securing permissions to allow their representatives to travel when letters and the occasional telegram were the only mechanisms available. In this way, too, the contents of the archive speak of their time and of the prevalent technologies of communicating and recording (Figures 3 and 4). Nowadays, the shift from paper to digital presents challenges for all organizations in terms of record management both on a daily basis and for those with responsibility for what is sent to the archive. While the international archive community has been aware of the issues around the preservation of digital content and software for some time and while we are aware that the archive of the present and the future will take a different, hybrid form, the paper archive seems to grow all the more fascinating. As one runs one's finger over raised lettering, or the indentations caused by aggressive typing on airmail paper, we know this isn't going to be repeated.

Some designers may leave a significant trace in the Icograda archive. Perhaps because of their sustained involvement as a board member, or perhaps as a one-off congress participant, or because the organization acquired an example of their work as part of the body of material – largely posters – it was passed from the annual Modern Publicity. And it should be remembered that Icograda also leaves a trace in the archives of designers. Hans Arnold Rothholz (1919–2000) kept an invitation which incorporated his portrait of fellow émigré designer, George Him (1900–82). The gathering, hosted by Him, was held during an early meeting of Icograda, in London, in April 1963 (Figure 5). Likewise, the archive of FHK Henrion (1914–1990), also at Brighton, includes files relating to his work for the student seminars he regarded as such an important part of Icograda's work. Others will have copies of reports, or minutes, or souvenirs from congresses, perhaps Zurich (1977), or Dublin (1983), or Punte del Este (1997), or La Habana (2007).

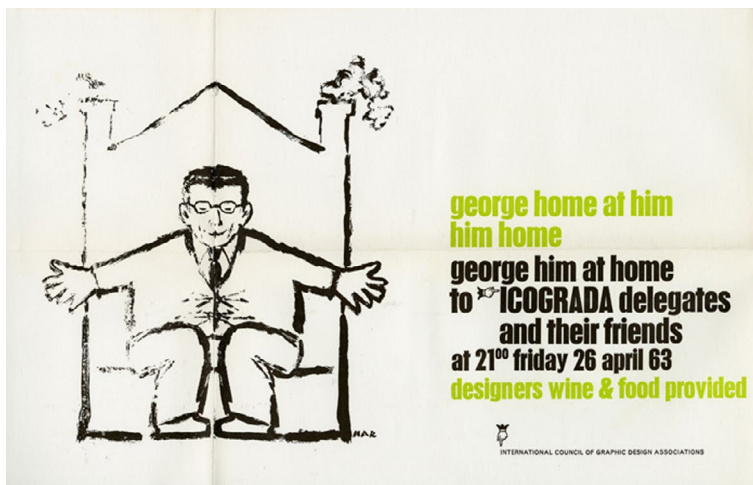


**Figure 3.** Members Directory of the Landsforeningen Norske Yrkesteegnere, 1964. Cover design by Fridtjof Falk Abelsen. IcoGrada Archive, University of Brighton Design Archives.

The IcoGrada archive is a legacy of a hub of communication, a system of connections that were maintained over time and space, and within which numerous voices can be heard. It is a significant body of material but it is also just one element of a wider story that embraces national histories and individual biographies. For this reason, its research potential is of great significance, for it is a starting point rather than end point, a place where stories may



**Figure 4.** Telegram from Knut Yram (President) to Pietter Brattinga (Secretary General), sent after a meeting in Rio de Janeiro, October 1967. Icoagrada Archive, University of Brighton Design Archives.



**Figure 5.** Invitation from George Him to Icoagrada delegates, 1963. Hans Arnold Rothholz Archive, University of Brighton Design Archives.

intersect. A mechanism for demonstrating collaboration and upending design histories that focus on the one rather than the group, and on the outputs rather than their process or context.

All images from the University of Brighton Design Archives.

<http://arts.brighton.ac.uk/collections/design-archives>

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

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# The graphic design project: employing structured and critical reflection to guide student learning

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## ABSTRACT

This study investigated a structured and critical approach to reflective practice, and how this can support graphic design students in a project-based learning environment to learn from their projects. Graphic design education has traditionally adopted a project-based learning approach where students are introduced to the principles of design through a series of projects. While there are many advantages to project-based learning, research suggests that in this environment, learning can become overly bound to the project with the risk that students have difficulty identifying and articulating what they have learned. Reflection offers a means to support students to connect their learning through a more deliberate engagement with the design process and the learning opportunities this presents. A learning intervention in the form of a structured and critical approach to reflective practice was designed, framed by theories of reflective practice and cognitive psychology. The aim was to prompt students to reflect on their project in ways that supported them to identify their learning and challenge their approach(es) to the project. A case study strategy of inquiry was employed, drawing on a mixed-method research approach. The findings from this study demonstrate that when supported by a structured and critical approach to reflective practice, students reflected in a critical manner and consistent with the principles of reflection-on-action. Whilst in this study not all students critically reflected, nor did students critically reflect all the time, it is concluded that reflective practice applied in a structured and critical manner can play an effective role to guide graphic design students to learn from their project. This article presents a detailed description of the research method and the structured critical reflective practice (SCRIP) developed for the study. A summary of the overall findings are presented.

## ARTICLE HISTORY

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## KEYWORDS

Structured reflection; critical reflection; project-based learning; graphic design education

## 1. Introduction

The application of project-based learning in graphic design education is widespread.<sup>1</sup> In this learning environment students are typically introduced to the principles of graphic design through a series of projects, with the aim that their level of expertise increases as they

progress through a programme of study. This approach has similarities with other design education disciplines (for example industrial design) and aims to educate students in an environment and a manner that parallels an industry context.<sup>2</sup> Students learn about design through the process of creating solutions to the introduced design problem(s), rather than through deliberate and separate study of the problem itself.<sup>3</sup> Guided by feedback from teachers and peers, these typical learning approaches engage students in increasingly complex design projects as they advance through a course. This learning-by-doing approach reinforces a traditional pedagogical belief that the best way to learn how to design is through the act of designing.<sup>4</sup>

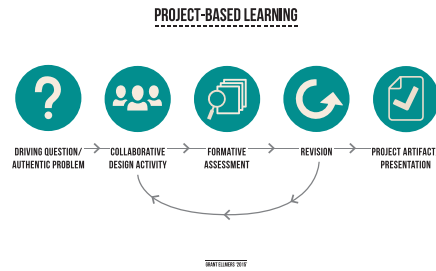
Project-based learning has been described as a 'comprehensive approach to classroom teaching and learning that is designed to engage students in investigation of authentic problems'.<sup>5</sup> By placing students in realistic, contextualized problem-solving environments, project-based learning can serve to establish bridges between knowledge gained in the classroom and real-life experiences.<sup>6</sup>

A generalized representation of project-based learning is illustrated in Figure 1, and draws on the work of Blumenfeld et al. and Barron et al.<sup>7</sup> The first step typically involves the articulation of a driving question, for example a design or project brief, from which the students then enter into the activity of designing. This activity is often collaborative in nature. As the project develops, the student(s) pauses from the activity of designing while the work is critiqued/discussed by staff and the student(s), before the student(s) returns to the design activity. This process is cyclic in nature and can occur numerous times during the development of the project. In the final stage the student(s) presents the final outcomes of the project.

While project-based learning is an effective way to approach the often complex and ill-structured<sup>8</sup> and/or ill-defined<sup>9</sup> nature of design problems, researchers have highlighted limitations to this approach.<sup>10</sup> Project-based learning typically has a primary focus on the artefact, and there can be a lack of engagement with the design process underpinning the artefact. This can leave the student at risk of learning little from the design process itself.<sup>11</sup> There is also potential for the learning to become overly bound to the project, where it is not always clear to the student what exactly they have learnt, nor can they express explicitly what it is they did learn.<sup>12</sup> If a student is not clear about what they have learnt, then it is likely to impact on their ability to transfer their learning to other projects.

For a design curriculum that employs project-based learning to be effective, it is important students transfer learning between projects as they progress through a programme of study. To achieve this it is critical students prepare the learning from their project in ways that foster the conditions for transfer.<sup>13</sup> One way to support transfer is to guide learners to think about their project in ways that encourages them to abstract general principles from the learning experience.<sup>14</sup> Reflective practice has been identified as a strategy that can provide direct support for transfer.<sup>15</sup>

The benefits reflection offers to learning have been examined in the broader design literature, for example, Valkenburg and Dorst, Dorst and Dijkhuis, Dorst, Reymen et al. and Lauche, with Schön's concept of the reflective practitioner<sup>16</sup> widely used as a conceptual basis. However, there have been few empirical studies that specifically investigate how reflective practice can support learning from projects in a design education setting, and searches of the literature specifically relating to graphic design education reveal this is a latent area of research.



**Figure 1.** Project-based learning (generalized model).

**Table 1.** Definitions of key terms used in this study.

Term	Definition	References
Reflection	A process of conscious detachment from the design activity, with the aim to explicitly engage with the thinking and understandings implicit in the activity of designing	Schön (1987, 1983) Boud et al. (1985), Hatton and Smith (1995), Valkenburg and Dorst (1998)
Structured reflection	'Reflection that is performed on a regular basis during the design process and that is performed in a systematic way'	Reymen (2003, 3)
Critical reflection	The process where learners challenge their thinking by questioning their approach in an analytical manner	Boud et al. (1985), Hatton and Smith (1995), Mezirow (1990), Moon (1999, 2004), Kember et al. (2007)
Reflection-on-action	Where learners engage in a deliberate process of pausing to reflect back over their design process, explore the understandings that they have brought to the handling of their process, and then consider how they might now approach further development of their project or design projects in the future	Schön (1983), Reymen (2003, 2001) Eraut (1994) Lawson (2006)
Transfer	The drawing of observations from the project in a manner that is decontextualized from the project context, typically in the form of a general principle, and articulated in a form that can be applied to other projects or the broader context of design practice	Girk and Holyoak (1983), Perkins & Salomon (1988), Bransford and Schwartz (1999), National Research Council (2000)
The design process (at a fundamental level)	The activity of transforming a design problem or brief, through a sequence of looping and iterative procedures, into a design solution or finished product	Lawson (2006), Best (2006), Design Council (UK) (2005, 2007)
Design practice	The compilation of design strategies and processes a design practitioner typically applies when approaching the activity of designing	Lawson (2006)

This study examined how a structured and critical approach to reflective practice can support graphic design students in project-based learning environment to learn from their project in ways that support transfer to other projects. Informed by the principles of the reflective practitioner,<sup>17</sup> structured reflection,<sup>18</sup> and critical reflection,<sup>19</sup> an intervention was designed and introduced to a graphic design classroom. The intervention aimed to guide students to reflect on their project in ways that stimulated reflections about further project development and, importantly, prompted them to connect these reflections with reflecting about how the learning from the project might inform approaches to other projects.

There are a number of key terms used throughout this study and these are defined in Table 1.

The purpose of this article is to present a detailed description of the research method that was employed for this study. This includes a description of the Structured Critical Reflective Practice (SCRCP) that was designed for this study. A summary of the main results is included in this article. A more detailed account of the results from the research is available online.<sup>20</sup>

## 2. Research method

This section outlines the research method of inquiry employed in this study and the related theoretical background of the methodology. This includes highlighting literature that informed the research design, identifying and describing the data collection procedures, and outlining the analytical framework used to analyse the collected data.

### 2.1 Research design

This research employed a case study approach with a mixed-method research strategy. This research suited a case study approach as the study investigated a contemporary phenomenon within its real-life context, which was located within a bounded system, and was studied in a detailed manner.<sup>21</sup> The researcher developed and implemented an intervention based upon instructional theory. Reigeluth and Frick<sup>22</sup> maintain this approach offers a powerful means for investigating and furthering theories of instruction as it can investigate the effects of an instructional intervention that operationalizes particular theoretical principles in a natural setting.

In a mixed-method research strategy qualitative and quantitative data can be collected and analysed in either parallel or sequential phases.<sup>23</sup> Mixed-method research has been described as the collection and analysis of both qualitative and quantitative data in a single study, in which the data are collected concurrently or sequentially, are given priority, and involve the integration of the data at one or more stages in the process of research.<sup>24</sup>

Creswell maintains a mixed-method approach allows the researcher to respond to the complexities of social phenomena through the inclusion of qualitative and quantitative data collection, which can support the creation of a more in-depth picture and a broader understanding of the case.<sup>25</sup>

When drawing on a mixed-method approach within a single case it is important to identify the principal research method where the supplementary data should inform the analysis that is undertaken in the principle strategy and be verified within the principal focus of the project.<sup>26</sup> For this study a qualitative approach was identified as the principle research method. Qualitative methods are appropriate for research that is designed to provide an in-depth description of a specific programme, practice, or setting and involves a set of interpretative material practices to reveal the world in which the research and observer are located.<sup>27</sup> Qualitative researchers 'study things in their natural settings, attempting to make sense of, or to interpret phenomena in terms of the meanings people bring to them.'<sup>28</sup>

In this study the data was collected concurrently during a single collection phase, where the mixing of the qualitative and quantitative methods facilitated an integration of the information and comparison of data sources. This approach provided two different pictures supporting an overall composite assessment of the data. The integration of the information and comparison of data sources was accomplished in the discussion section. This approach has parallels with what Creswell et al. describe as a concurrent nested mixed-method research strategy.<sup>29</sup> Advantages of a concurrent nested design include: the ability to collect multiple forms of data simultaneously during a single data collection phase; employing the strengths of both qualitative and quantitative methods; and the facility to gain different perspectives not possible with one approach.<sup>30</sup>



## **2.2 Research context for the study**

This study was conducted with undergraduate students enrolled in a graphic design studio subject in the final session (semester) of the three-year Bachelor of Creative Arts (Graphic Design Major) at the University of Wollongong, Australia. The students are tasked to create an individual major design work intended to serve as a graduating signature work in their design portfolio. This work provided the point of focus for the introduced reflective practice (the study intervention). By situating the study within this subject, the following boundaries to the case study were established: participants were limited to those students enrolled in the subject; the researcher was also the lecturer for the subject; the set of learning activities were designed specifically for the subject; and the duration of the subject was fixed.

It was important to acknowledge the relationship between the researcher and participants, as the researcher was also the teacher for the subject in which the study was located. Steps were taken to avoid any conflict of interest. This included employing an alternative person to conduct and record the interview data, which was not released to the researcher until the assessment for the subject was complete. The study was approved by the University of Wollongong's Human Research Ethics Committee before any data was collected, which included accounting for the teacher–student relationship.

Thirty-four students were enrolled in the subject. The student cohort consisted of an equal gender split, with approximately 75% of the cohort aged 18–22, 20% aged 23–30, and 3% aged 30 years and above. Approximately 70% of the cohort entered the programme directly from school having completed the New South Wales Higher School Certificate, 17% with no Higher School Certificate, and the remaining 13% with a range of qualifications from vocational institutions.

## **2.3 Data collection**

The data sources collected for this study included qualitative and quantitative approaches reflecting the mixed-method approach adopted. In this study four forms of data were collected, a survey, semi-structured interviews, written reflective assessment tasks, and researcher observations.

When developing a data collection plan it is important that researchers select techniques that will assist them to answer their research. Employing a multiple data-set approach is important for qualitative research as this provides a data triangulation strategy,<sup>31</sup> which enhances data dependability, credibility, and confirmability.<sup>32</sup> 'Any finding or conclusion in a case study is likely to be much more convincing and accurate if it is based on several different sources of information, following a corroboratory mode.'<sup>33</sup>

The survey instrument was administered at the beginning of the data collection phase. It sought to collect general information about participant backgrounds, and their general views on the design process and reflection prior to the introduction of the intervention. Surveys are commonly deployed in quantitative research and allow an effective collection of data from a sample population.<sup>34</sup> Through the process of generalizing from a sample of the population, inferences can be made about characteristics, attitudes, or behaviors of this population.<sup>35</sup> There are limitations however with a survey approach as the researcher must 'rely on individuals' self-reports of their knowledge, attitudes, or behaviors ... thus the validity of the information is contingent on the honesty of the respondent.'<sup>36</sup> While a survey might

traditionally be employed to study a sample of the population, in this study the aim was to gain an understanding of the participants as a cohort to inform the case study by seeking to enrich the descriptions of the case participants.

The second data source involved semi-structured interviews. These were conducted with eight volunteers at three points during the course of the study with the aim to provide in-depth data from individual participants. Interviewing is a major data collection instrument in qualitative research and is an excellent way of 'accessing people's perceptions, meanings, definitions of situations and constructions of reality'.<sup>37</sup> There are a number of approaches to the interview in qualitative research, structured, unstructured, and group.<sup>38</sup> Semi-structured interviews can include a combination of structured and unstructured approaches.<sup>39</sup>

The aim of the interviews was to gain an in-depth understanding of how individual participants were responding to the intervention (described below) and to document their experience. The interview is an excellent method to access and understand participant's 'perceptions, meanings, definitions of situations and constructions of reality'.<sup>40</sup> The data that emerges from the interview process supports an assessment of the new instructional approach and allows a comparison of the actual outcomes and experiences with those predicted by the theory.

An interview protocol was developed as a means to guide the interview discussion, ensuring similar questions were asked of each participant, while allowing flexibility for the interviewer to explore related issues that might emerge during the interviews. The aim of the interviews was to capture a snapshot of the participant's design experience during the intervention, including their thoughts and observations of their experience with the introduced reflective framework.

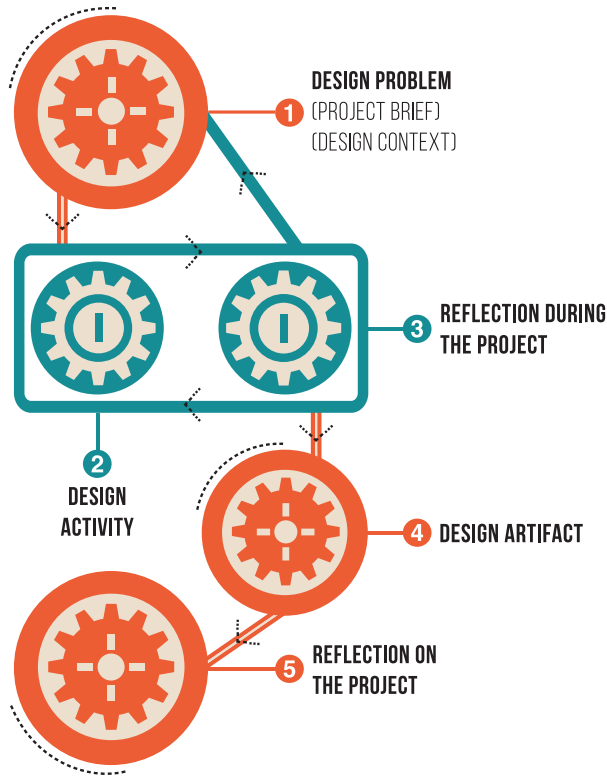
The third data source involved a learning intervention that was designed with the aim to guide students to reflect on their project in a structured and critical way. The intervention, which has been identified as SCRP, was developed in three stages. In the first stage a reflective learning framework was designed for the learning setting of this study to represent the core features of a structured and critical approach to reflective practice. This framework was designed to guide how the intervention was to be applied in the studio class. The second stage involved the design of a four-step reflective process (informed by the framework), which was developed to guide the design of stage three, the reflective assessment tasks that were introduced to the participants. The design and the literature that informed the intervention are described in further detail below.

### ***2.3.1 Stage 1: a reflective learning framework***

The reflective learning framework developed by the researcher builds on a foundation of project-based learning, and was also informed by the principles of reflective practice, and problem-based learning.

The students start by developing a design or project brief (see Figure 2). This approach has parallels with the principles of project-based learning where an authentic problem is initially articulated,<sup>41</sup> and then employed to drive the subsequent learning. While developing their design brief, the students were also directed to establish the design context in which their project will be located. This has parallels with Schön's notion of framing.<sup>42</sup> As the project develops both the design context or frame and the design problem can be re-examined as part of the reflective process.

## REFLECTIVE LEARNING FRAMEWORK



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**Figure 2.** Reflective learning framework.

Once the project brief and context are established, the student enters the stages of design activity and reflection during the project development. This occurs in a cyclic manner within the design context. The design activity stage represents the physical process of designing and links to the 'learning-by-doing' approach described by Dorst.<sup>43</sup> Reflection during the project stage draws on the principles of reflection-on-action<sup>44</sup> where the designer pauses during the process of designing, to make sense of their experience in order to extend their knowledge base. This should not be confused with the process of reflection-in-action,<sup>45</sup> which also occurs during the development of the project. This framework specifically engages with the process of reflection-on-action. During this reflective process the design context and/or the original problem may be re-examined and re-defined.

Once the design solution is satisfactorily developed or the project deadline is reached, the student enters the *design artefact* stage where they present their final design solution. In a typical project-based learning environment this is where the project concludes.

The final stage of the framework is identified as *reflection on the project*, and involves a reflective stage once the design artefact is submitted. The inclusion of this additional learning

stage is where the framework significantly departs from the project-based learning model. The students are prompted to reflect back over their whole project. This final reflective stage has parallels with the principles of problem-based learning, specifically, the final reflective stage described by Koschmann et al.<sup>46</sup> where the students reflect back over their project and critique their learning process, seeking to identify areas for future improvement. This reflective stage also has parallels with the principles of reflection-on-practice<sup>47</sup> where students are encouraged to identify and critically analyse understandings implicit in their design practice that have developed through observing repetitive design experiences.

### **2.3.2 Stage 2: a 4-step reflective process**

To guide the development of the learning activities for the study (which are described below), a 4-step reflective process was designed informed by the principles of reflection-on-action, critical reflection, structured reflection, and transfer (see Table 2).

Step 1 of the 4-step reflective process aimed to initiate the process of reflective thinking by prompting students to pause and stand back from the design activity by asking them to summarize their design process. This deliberate intervention is important as the activity of designing often results in the student becoming so immersed in the project they are not always in a position to stand back and consider their process critically and rationally.<sup>48</sup>

Step 2 builds on step 1 and aims to promote critical reflection by prompting students to review their design process (by referring to the material from step 1), identify critical situations in their process, and then explain their rationale. This approach has been informed by the principles of critical incident analysis.<sup>49</sup> Identifying critical incidents from the design process requires an interpretation of the significance of an event,<sup>50</sup> and subsequent analysis of the event can help the practitioner develop their practice further and increase their level of expertise.<sup>51</sup> Identifying and analysing critical situations from the design process can have an important influence on further development of the design project.<sup>52</sup>

Both steps 3 and 4 were designed specifically to foster the conditions for transfer where the student draws observations from their current project in ways that prepare them for future learning (Bransford and Schwartz 1999). Step 3 builds on steps 1 and 2, and was designed to prompt the student to connect reflecting about their project with reflecting about subsequent development of their project. Step 4 prompts participants to extend their reflections further and in light of their observations from steps 1-3, consider how they might in the future approach other design projects, or the broader context of their design practice. The 4-step reflective process is summarized in Table 2.

### **2.3.3 Stage 3: reflective assessment tasks**

The researcher designed a series of learning activities in the form of written reflective assessment tasks. These were introduced to the students at different stages during and after the development of the design project. The tasks consisted of a sequence of inter-related learning prompts (LP) informed by the aims of Stage 1 the reflective framework, and Stage 2 the 4-step reflective process.

An important role of the reflective assessment tasks was to guide the students to engage with the introduced reflective practice. The tasks required students to reflect on their project in a written format. The process of writing serves as an important learning aid, with the benefits of writing as a form of learning, having been well documented in the literature.<sup>53</sup> The process of writing also serves an important role to shape students reflections and learning from their

**Table 2.** 4-step reflective process.

Step 1	Initiate a reflective thinking process by pausing and standing back from the design activity and review the design process
Step 2	Critically reflect on the project by identifying and evaluating critical incidents/situations from the design process
Step 3	Connect reflecting about the project with reflecting about further development of the project
Step 4	Connect reflecting about the project with reflecting about possible approaches to other projects in the future and/or design practice

project at what Britton defines as the ‘point of utterance’.<sup>54</sup> When considering assessment tasks as a means to foster the conditions for transfer, it is important that students are prompted to relate the new learning with past learning, that is, the tasks should ‘directly explore people’s abilities to learn new information and relate their learning to previous experiences.’<sup>55</sup> The reflective tasks were introduced as assessable tasks due to benefits assessment plays as an integral aspect of learning<sup>56</sup> and which serves to motivate and direct student learning.<sup>57</sup>

The use of LPs was an integral component of the reflective tasks and for this study these are defined as questions or hints that aim to encourage students to reflect on aspects of their project in specific ways. LPs can assist students to engage at a metacognition level where they move beyond the application of knowledge, to gain an understanding of the knowledge. That is, a situation where students understand how a task was performed, not just applying the skills necessary to perform the task.<sup>58</sup>

Two forms of the reflective tasks were developed, a minor task and a concluding task. The minor task guided the students’ reflective thinking during the development of the project at three key developmental points, while the concluding task directed the students to reflect back over the whole project including reviewing their responses to the three minor tasks.

In this study the minor reflective assessment task was scheduled at three key points during the design project. This occurred subsequent to the design proposal presentation, the design prototyping presentation, and the presentation of the final design artefact. The aim was to guide the student to link reflecting about their project with reflecting about subsequent development of their project, and reflecting about how they might approach other projects in the future in light of their experience. The task also served to guide students to document their design process and reflections during the project for reference when completing the final concluding reflective assessment task. The LPs are outlined in Table 3 including the aim of the prompt and how it aligned with the 4-step reflective process.

The concluding reflective assessment task was designed to prompt the participant to reflect in a structured manner over their whole project, and to promote connections between reflecting about outcomes from their design project with reflecting about possible approaches to design projects in the future and/or the broader context of their design practice. This assessment task employed some similar LPs to the minor tasks, but also included a further series of LPs specifically designed to encourage the participants to consider their whole project. The participants were asked to complete the concluding task after submission of the design artefact and completion of the minor tasks. The LPs, their aims, and how they align with the 4-step reflective process, are summarized in Table 4.

## 2.4 Data analysis

In this study a qualitative approach to the data analysis was employed. When drawing on a mixed-method approach within a single project it is important to identify the principal

**Table 3.** Summary of the minor reflective assessment task.

	Learning prompt (LP)	Aim of prompt	4-Step reflective process
LP1	Briefly outline your design concept. Summarize your design process. Summarize the feedback you received from your design presentation	To describe the design process	Step 1
LP2	How do you feel about the feedback you received from your presentation? How do you feel about the progress of your design project to this point?	To link personal feelings with the project	Step 1
LP3	Identify three significant aspects (critical incidents) of your design process to date. Describe these critical incidents and explain why you think these aspects are significant	To identify and analyse critical incidents from the design process	Step 2
LP4	How might the issues identified through the reflective process (from Parts 1 and 2) help you further develop and refine your design project? Why do you think this?	To link reflecting about the project with reflecting about subsequent project development	Step 3
LP5	Do these issues remind you of any previous experience? If so how?	To link reflecting about the current project with previous projects	Step 3 or 4
LP6	In light of these issues, are there aspects of your design technique/process you would approach differently in the future? If so how?	To link reflecting about the project with reflecting about projects in the future	Step 4

**Table 4.** Summary of the concluding reflective assessment task.

	Learning prompt (LP)	Aim of prompt	4-Step reflective process
LP1	Briefly outline your design concept. Outline three primary references including their relevance. Describe your design process that lead to the completion of your major design project	Describing the design process Describing actions from the recent past	Step 1
LP2	Identify and describe 3 outcomes of your design project. Discuss why you believe these outcomes are particularly significant	Identifying and analysing critical incidents from the project	Step 2
LP3	Compare your concept statement from the first reflective task with your final statement. How has your concept changed?	Looking back over the project to identify shifts in project focus	Step 2
LP4	Do you feel your final concept statement is an improvement on the first? Why?	Linking personal feelings with the design project	Steps 1/2
LP5	Look back over your responses to the three reflective tasks. What patterns do you see emerging?	Identifying patterns in the previous reflections and design process	Step 2
LP6	Identify and describe three things you have learnt during this project	Identifying learning embedded in the project	Step 2
LP7	How might you apply this learning to future design situations?	Applying new learning to future practice	Step 4
LP8	Now you have completed your project, do you see any alternative outcomes? Why?	Considering alternative outcomes in the same context as the current project	Step 4
LP9	Is there anything you would do differently in the future when approaching a similar design situation? Why?	Projecting new knowledge to a similar design context in the future	Step 4
LP10	How might the final outcomes from your design project prepare you for industry or post-graduate study? How might your reflections/observations from the reflective tasks prepare you for industry or post-graduate study?	Projecting new knowledge to the wider context of design practice	Step 4

research method, which in turn determines the data analysis approach.<sup>59</sup> While the data analysis process is tailored for the individual study, there are approaches that are typically present in qualitative research analysis. These include: data preparation and organization;

data reduction into themes through coding and condensing the codes; and the final stage of data representation in figures, tables, and/or discussion.<sup>60</sup>

The reflective assessment tasks and the semi-structured interviews provided the main data sets in this study. To code the reflective tasks a cognition taxonomy was developed to identify the levels of reflective thinking evident in the reflective tasks. This taxonomy was developed based on the work of Bennett, and Hatton and Smith.<sup>61</sup> Hatton and Smith developed what Moon<sup>62</sup> identifies as one of the better known frameworks describing levels of reflection. The cognition levels and descriptors are described in Table 5.

The data generated in qualitative research is generally voluminous in nature and researchers often rely on computing systems to help store, retrieve and aid analysis of the data.<sup>63</sup> Employing a computer program 'encourages a researcher to look closely at the data, even line by line, and think about the meaning of each sentence and idea.'<sup>64</sup> In this study the computer software program QSR NVivo was employed throughout the coding process of the reflective assessment tasks, and subsequent matrix searches of the coded data, to help analyse, manage, and shape the data. The reflective tasks were coded at a sentence level, representing 'units of meaning'<sup>65</sup> and in NVivo each sentence was aligned to one of the six cognition levels. When considering what cognition level the sentence should be coded, the sentence context was taken into account, and if there was any coding doubt, the sentence was aligned to the lower cognition level.

The semi-structured interviews were audio recorded in a digital format and then transcribed once the data collection period had finished. To analyse the data, the interview transcripts were printed and read numerous times, and using margin notes, patterns and themes were identified. Evidence of how the participants engaged with the intervention was also documented, with the aim to establish:

- the participants perspective on reflective practice;
- how they engaged with the intervention during the development of their design project;
- how the participant felt the intervention impacted on their design project;
- how the participant felt the intervention influenced reflecting about how to approach design projects in the future.

**Table 5.** Cognition taxonomy developed for this study.

Cognition levels	Cognition level descriptors
Abstraction	Presents a general principle or procedure that moves beyond the design project to address wider or future practice
Generalization	Presents a general observation or draws a generalizing conclusion within the context of the project
Judgement	Goes beyond re-presenting or interpreting information to offer a value judgement or claim
Interpretation	Seeks to explain or make sense of an event or statement by interpreting information from the project
Summarizing description	Descriptive response that summarizes or synthesizes or recounts information presented in the project. This includes re-wording and re-structuring of a number of events into one statement. This type of response does not present new information from beyond the project
Reproductive description	Descriptive response that reproduces information directly from the case with no elaboration

In empirical research it is important that the quality of the research is established by addressing issues of data trustworthiness.<sup>66</sup> This is an important consideration in qualitative research as collecting data in social settings is subject to interpretation and meaning that is also reliant on different factors.<sup>67</sup> Trustworthiness is a process of validation, and it is essential to employ accepted validation strategies to document the accuracy of the study. Creswell<sup>68</sup> describes eight verification procedures as a means to provide trustworthiness in qualitative research, of which he maintains at least two procedures should be employed. These are: prolonged engagement and persistent observation; triangulation; peer review/debriefing; negative case analysis; clarification of researcher bias; member checking; rich, thick descriptions; and external audits. The strategies employed in this study to establish trustworthiness are outlined in Table 6 and include how these strategies were applied in this study.

### 3. Results and discussion

The results from this study are summarized below. A more detailed account and discussion of the results is available online.<sup>69</sup>

The results from this study indicate that reflection, introduced as a structured and critical practice, can guide graphic design students to learn from their project. In its most successful form, a structured and critical approach to reflective practice, can support students to reflect critically on their project in ways consistent with the principles of reflection-on-action. In this study this was evident when participants paused from their project, thought back over their

**Table 6.** Verification strategies used in this study.

Strategies	Definition	How applied in this study
Prolonged engagement and persistent observation	Building trust with participants, learning the culture, and checking for misinformation that stems from distortions introduced by the researcher or informants. Investment of sufficient time	Data collected across 13 week teaching period. Intervention applied across 13 week teaching/ collection period. Physical artefacts collected from each participant across the collection period. The interviewed participants were interviewed three times through the data collection period by the same interviewer with the aim to build participant trust and maintain a cohesion across the interviews. Researcher's journal kept throughout design/development of the study
Triangulation using multiple data sources	Making use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence	Multiple data sources including: - Questionnaire; Participant artefacts; Semi-structured interviews. Researcher's journal maintained
Peer review / debriefing	External check of the research process	PhD supervisors (Education). Dr Marius Foley (Design academic RMIT University). Presented various stages of study at peer-reviewed conferences, and a journal publication
Clarification of researcher bias	Researcher comments on past experiences, biases, prejudices, and orientations that likely shaped the interpretation and approach to the study	Researcher bias was outlined in study proposal and approved by Faculty post-graduate research panel. Researcher bias acknowledged in thesis
Rich, thick descriptions	Describing in detail the participants or setting under study enabling readers to transfer information to other settings and whether the findings can be transferred	Researcher has provided a detailed description of the analysis process, making it available for the reader to assess. Data collected in a detailed manner



design process and explored in an analytical way the understandings they had brought to the development of their project. These outcomes were further evidenced when participants connected their reflections from the project with reflecting about how they might approach further development of their project. The study reveals however, that not all students are likely to achieve these connections, nor are they likely to achieve these connections all the time. Importantly, students may take differing periods of time to reflect critically, and some will gain considerable benefit from the inclusion of multiple reflective tasks.

In this study participants reflected in ways that can be described as fostering the conditions for transfer. That is, participants reflected on their project in ways that prepared them for future learning or what Bransford and Schwartz<sup>70</sup> recognize as transfer. This was evident when participants drew observations from their project in a manner that could be applied to projects in the future or addressed the broader context of their approach to design practice. This outcome suggests that prompting students to draw generalizations from their reflections supports them to reflect about their projects in ways that supports transfer. This study shows that transfer more readily occurs when skills and knowledge learned in one context can be readily applied to another similar context, however fewer students are likely to apply their reflections to a different learning context.

Not all participants in this study benefited from the introduced reflective practice and it is not clear why some critically reflected and others did not. Further research is needed to fully understand this outcome. This could include, for example, investigating whether the reflective framework requires further development, and whether motivation was a factor.

Finally, fostering the conditions for transfer has the potential to support students to learn from their projects in ways that may help them to increase their level of design expertise, and also may support them to become better independent learners. Such an outcome would be extremely valuable in preparing students for professional life, however further research is needed to fully explore these ideas.

#### **4. Limitations of the study**

It is important to acknowledge the limitations of this study. The primary limitation relates to the number of students who participated. While all the students enrolled in the subject of study participated in the research, the total number was 34. Such participant numbers are not unusual in qualitative inquiry, however this form of research has been criticized for the inability to include a wide range of data for analysis.<sup>71</sup> This potential criticism has been mitigated in this study through the triangulation of data by collecting multiple data sources, through a mixed-methods approach, with the aim to support broader analysis of the case study. However, despite the use of both qualitative and quantitative methods, the low number of participants in this study does mean there are risks the findings may not generalize to other settings.<sup>72</sup>

A further limitation of this study relates to issues of subjectivity on the part of the researcher. While the mixed-methods approach employed in this study, is one way to address subjectivity,<sup>73</sup> inevitably, the coding of the data, the findings and the conclusions drawn from this study come from a single perspective, that of the researcher.

Another limitation important to acknowledge relates to the introduced reflective practice. While the design of the reflective practice was informed by the literature and developed in some depth, alternative forms of reflective practice were not introduced. As a consequence,

the findings from this study are dependent on how the participants interpreted this one intervention. For example, this study employed a written approach to reflection, and although researchers have argued the benefits of this approach,<sup>74</sup> it has been suggested that students are likely to have varying abilities to articulate their reflections in written form.<sup>75</sup> In design education this is particularly relevant as the core modes of learning are traditionally non text-based.<sup>76</sup> Further research opportunities exist to explore how the introduced reflective practice developed for this study could purposefully engage with visual representations of the design process and how this might support further layers of meaning.

## 5. Conclusion

The findings from this study demonstrate that reflective practice applied in a structured and critical manner can play an effective role to guide graphic design students to learn from their project.

The findings of this study are a significant addition to the limited research on project-based learning in graphic design education, particularly regarding the important role a structured and critical approach to reflective practice can play to support learning from the project. The evidence-based nature of this study also contributes to the broader field of design education, and advances the research in project-based learning, reflective practice, transfer, and the relationships that exist between them. The limited research linking these areas and the widespread application of project-based learning indicates there remains much to learn.

## Notes

1. Davies and Reid, "Uncovering Problematics"; Ehmann, "Futuregraduate."
2. Dorst, *Understanding Design*.
3. Lawson, *How Designers Think*.
4. Dorst and Reymen, "Levels of Expertise"; Lawson, *How Designers Think*.
5. Blumenfeld et al., "Motivating Project-based Learning," 369.
6. Barron et al., "Doing with Understanding"; Blumenfeld et al., "Motivating Project-based Learning."
7. Blumenfeld et al., "Motivating Project-based Learning"; Barron et al. "Doing with Understanding."
8. Dorst and Reymen, "Levels of Expertise."
9. Cross, *Designerly Ways of Knowing*.
10. Dorst and Reymen, "Levels of Expertise"; Kvan, "The Problem"; Lawson, *How Designers Think*.
11. Kvan, "The Problem"; Lawson, *How Designers Think*.
12. Dorst and Reymen, "Levels of Expertise."
13. Bransford and Schwartz, "Rethinking Transfer."
14. National Research Council, "How People Learn."
15. National Research Council, "How People Learn."
16. Valkenburg and Dorst, "The Reflective Practice"; Dorst and Dijkhuis, "Comparing Paradigms"; Dorst, "The Problem of Design Problems"; Reymen et al., "A Domain-independent Descriptive Design"; Lauche, "Heedful Action," with Schön's concept of the reflective practitioner (*The Reflective Practitioner* and *Educating the Reflective Practitioner*)
17. Schön, *The Reflective Practitioner* and *Educating the Reflective Practitioner*.
18. Reymen et al., "A Domain-independent Descriptive"
19. Hatton and Smith, "Reflection in Teacher Education"; Kember et al., "A Four-category Scheme"; Mezirow, "How Critical Reflection."
20. Ellmers, 2014.
21. Creswell, *Qualitative Inquiry*; Yin, "Case Study Research."
22. Reigeluth and Frick, "Formative Research."

23. Tashakkori and Teddlie, "Major Issues."
24. Tashakkori and Teddlie, "Major Issues," 212.
25. Creswell, *Research Design*.
26. Creswell et al., "Advanced Mixed Methods."
27. Mertens, *Research Methods*.
28. Mertens, *Research Methods*, 229.
29. Creswell et al., "Advanced Mixed Methods."
30. ibid
31. Yin, "Case Study Research."
32. Creswell, *Research Design*; Mertens, *Research Methods*.
33. Yin, "Case Study Research," 98.
34. Creswell, *Qualitative Inquiry*; Mertens, *Research Methods*.
35. Creswell, *Qualitative Inquiry*.
36. Mertens, *Research Methods*, 167.
37. Punch, *Introduction*, 174.
38. Mertens, *Research Methods*; Punch, *Introduction*.
39. Mertens, *Research Methods*.
40. Punch, *Introduction*, 174.
41. Blumenfeld et al., "Motivating Project-based Learning."
42. Schön, "Problems."
43. Dorst, *Understanding Design*.
44. Reymen et al., "A Domain-independent Descriptive."
45. Schön, *The Reflective Practitioner*.
46. Koschmann et al., "Using Technology."
47. Reymen, "Research on Design Reflection"; Schön and Bennett, "Reflective Conversation."
48. Dorst, *Describing Design*.
49. Ghaye and Lillyman, *Learning Journals*; Tripp, *Critical Incidents*.
50. Tripp, *Critical Incidents*.
51. Ghaye and Lillyman, *Learning Journals*.
52. Reymen et al., "A Domain-independent Descriptive."
53. Bransford and Schwartz, "Rethinking and Transfer."
54. Britton, "Shaping at the Point of Utterance"; Klein, "Reopening Inquiry"; Moon, *A Handbook and "We Seek it Here..."*
55. Britton, "Shaping at the Point of Utterance."
56. Bransford and Schwartz, "Rethinking Transfer," 69.
57. Ehmann, "Futuregraduate."
58. Boud, "Assessment"; Briggs, *Teaching for Quality*.
59. Schraw, "Promotional General Metacognitive Awareness."
60. Creswell et al., "Advanced Mixed Methods."
61. Creswell, *Qualitative Inquiry*.
62. Bennett, 2002; Hatton and Smith, "Reflection in Teacher Education."
63. Moon, *A Handbook*.
64. Mertens, *Research Methods*.
65. Creswell, *Qualitative Inquiry*, 165.
66. Herrington and Oliver, "Using Situated Learning," 11.
67. Lincoln and Guba, *Naturalistic Inquiry*.
68. Creswell, *Qualitative Inquiry*.
69. ibid
70. Ellmers, 2014.
71. Bransford and Schwartz, "Rethinking Transfer."
72. Tashakkori and Teddlie, "Major Issues."
73. Johnson and Onwuegbuzie, "Mixed Methods Research."
74. Creswell, *Qualitative Inquiry*.
75. Hoover, "Reflective Writing"; Moon, "We Seek it Here...".

76. Moon, "We Seek it here...".  
77. James, "Reflection Revisited."

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

**Grant Ellmers** specializes in design education, design thinking, design process, and design for graphic user interface (including design for mobile technologies). Grant's PhD thesis is titled *Graphic Design Education: Fostering the conditions for transfer in a project-based and studio-based learning environment, through a structured and critical approach to reflective practice*.

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## Poster as design dialogue

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### ABSTRACT

A fourth-year class in a pre-professional programme explored the idea of a visual dialogue emerging from the investigative nature of the properties and variables of individual responses to design studio challenges. All members of a Senior Design Studio collaborated in planning, designing and producing a single poster announcing a public parade of their work. This article describes the poster, as well as the use of alternative teaching and learning approaches which students learn to broaden their design and architectural repertoire to include more creative, collaborative, intuitive and flexible skills.

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communication; posters;  
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## Introduction

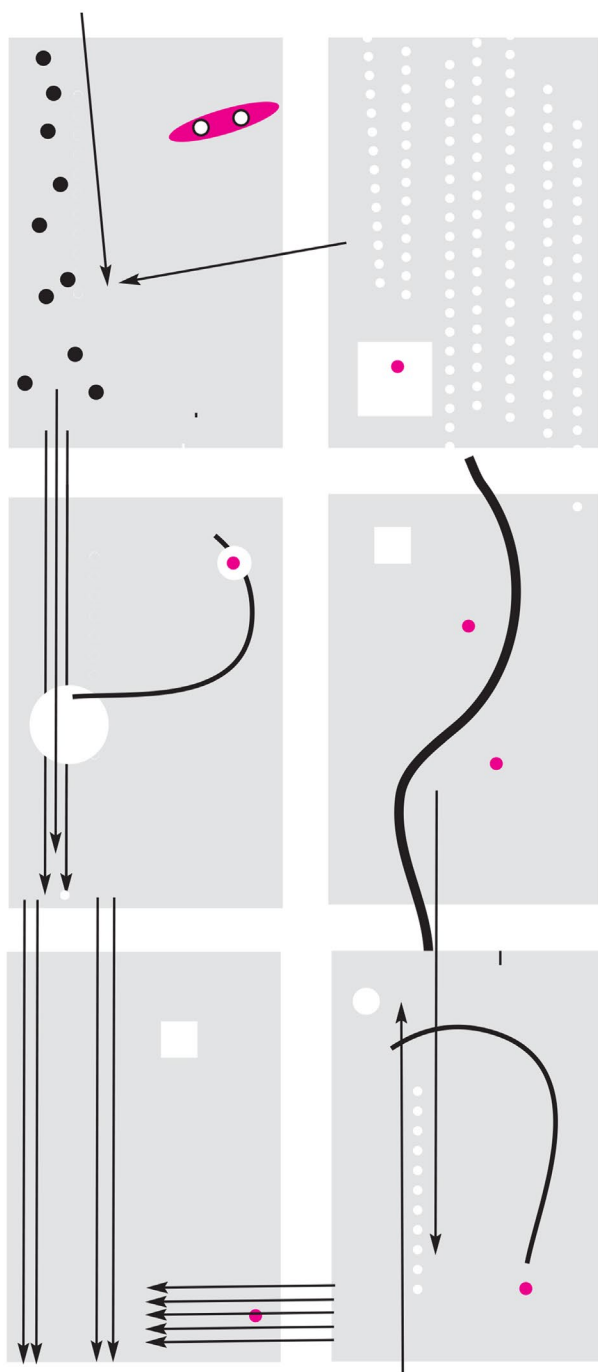
There is a point in the final semester of Senior Studio – typically about two-thirds of the way through – when the social dynamic of the studio, one in which work process and discussion are closely interconnected throughout the semester, gives way to increasing insularity. Design tutorials, reading discussions, pin-ups and other collaborative review formats become less frequent as students press to complete drawings, models, and a coherent design narrative for presentation to a sizable audience of architects and designers at the final review. One-on-one desk critique between individual students and the studio instructor become the primary source of critical feedback and reflection.<sup>1</sup> Students, feeling the constraint of time, anxiety, and competition for recognition, recede from the social learning space and pursue projects and design practices personally in isolation from others. But the iterative design process calls for multiple, diverse, opportunities of feedback and reflection. When students' work is primarily internally focused is the essential structure of the studio learning environment and an essential element of studio pedagogy: the learning that takes place in the relationships between people is lost. The success of studio teaching in design education is often attributed to its social nature. Most of us were taught in school to think ourselves as individualist and even encouraged to be iconoclasts. One result of that individualism is that it has accustomed us to think of ourselves as competitors, something more characteristic of a trade than a profession.<sup>2</sup>

For the past 10 years I have used a collaborative approach to create a Senior Design Studio poster to shake up the insular late-semester atmosphere in the studio and, in doing so, challenge the outcome of individual thesis projects. This project – the development of a Senior Design Studio poster – represents an alternative approach to appraising each other

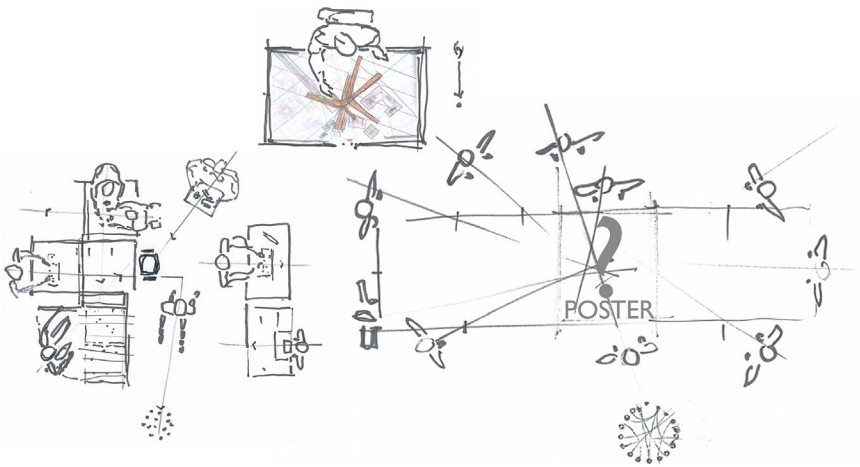


Figure 1. Six final poster projects, 2005–2013.





**Figure 2.** Creative dialogues: a visual linguistic interpretation of the impulses moving in the studio during each poster creation.



**Figure 3.** The movement from individually-focused work habits to the interactive environment stimulating the birth of a poster.

and ourselves. It focuses on aspects such as creativity, collaboration, capturing emotions, and learning to challenge the traditional modes of thinking.<sup>3</sup> The poster is intended to be a tool – a maieutic methodology – that offers students a chance to see themselves and their work in the larger context of their intellectual and imaginative development and in the larger context of the studio itself.<sup>4</sup> Maieutic stands in this context of architecture criticism promote a birth of integral artistic and architectural design image by means of gradual destruction of students' primary beliefs and stereotypes of knowledge. As a result students get a new, more flexible knowledge of the world and of oneself. In other words it serves as witness, scribe, memory, and reflection of the creative impulses which occur between instructors, students, and outside observers (Figure 1 and 2).

### Stretching the imagination

The idea arose when I was challenged as a junior faculty to take over a thesis studio. In addition to helping students create their ultimate senior project, I wanted to capture the soul of the studio experience. Something special happens in the studio environment due to the unique group dynamics. One of my goals was to capture this generally unrecognized aspect of this capstone experience and to stitch together the most salient elements of the individual design projects into one coherent overview (Figure 3). My initial aspirations were many, key among them: to summarize the group experience arising from the individual senior projects, encourage collaborative learning, and de-emphasize the technical process of project execution. Finally, I wanted to highlight the proposition that the process of developing or making is an equally valued outcome of art and design education as the product (object or event<sup>5</sup>). The creation of a poster involves the entire class (12–15 students) in the development of a three-dimensional assemblage and collage that, when scanned, becomes the visual narrative element of a large-format print poster. Minimal typography was added to convey the date, time, and location of the exhibition (Figure 4).



**Figure 4.** Typography of 2009 poster for the South Bass Island meditation centre, Lake Erie, Ohio/USA overlay on top of an assortment of crescent boards, trace, spray paint, sit visit notes, sketches, impressions showing the infinite silence of the place.

The injection of a project calling for participation by all class members late in the semester is can be a hard sell. Students may experience it as adding stress to what is already a stressful situation (finishing thesis projects). However, the poster project, as it develops through several stages, has the potential to positively affect students when they return to their individual



**Figure 5.** Extract from 2013 poster for a centre for contemporary crafts, Pittsburgh, Pennsylvania/USA showing numerous sketch models, auto body filler, tire impressions, recycled Andy Warhol bag, toothpicks, paper, photographs, recycled electronic parts, on plywood representing variety and diversity of students thinking.

projects by restoring the social component of studio learning. As a brief but drastic shift in attention from the preoccupations of individual work, the poster project opens a space that can be helpful to students whose individual thesis projects need a creative breakthrough to be fully realized.<sup>6</sup> Students were asked to contribute an object: a drawing, an image, a word, a sketch model, anything that serves as a design parti, which is a physical representation of their individual thesis project. They were asked to describe to the group the object in terms of what and how it represents. These partis were serving as raw material that the group

used to develop the poster image. The specific technique of assemblage and collage, with its particular approach to shapes, colours, materials, its reliance on intuition and non-linear association, is an ideal vehicle for group discovery and negotiation (Figure 5).

## Birthing a poster

The poster project is run in one initial two-hour session with the entire class, and loosely scheduled through a number of subsequent phases with a self-selected group of editorial art team. Initially the entire class, usually fifteen students, and the instructor, gathers around a table large enough to hold a 24" × 36" board (crescent board, foam board, scrap plywood, whatever is available in the studio) on which the poster imagery will develop. The dimensions of the board approximate the dimensions of the finished poster, so the imagery will be scanned at a scale of 1:1 (Figure 6).

Students have been assigned to bring in one object: a drawing, an image, a word, a sketch model, anything that serves as a design parti, which is a physical representation of their own senior project (each year there is an assigned theme around which individual students develop their own thesis projects). Each student gives a short presentation describing their object and the thought behind its selection. As objects accumulate on the centre of the table, they are freely placed and moved, while ideas and notes are kept on white board for review, and drawing materials are at hand.

Initially, for some students this created numerous challenges. They wanted to know *why* they had to participate in a larger project beyond the thesis project. They resisted having time taken away from their individual projects. They did not understand the need for creating a memory of the studio experience or the value of collaborative learning. This new style of learning created cognitive dissonance with their story that outperforming their peers is the most important value.

Once these initial difficulties were surpassed and they had chosen their objects, students began participating together in creating a representation of how their items could work together to show the spirit of the studio. At this point, the difficulties multiplied. In the beginning of the project, there is no theme, which makes many students uncomfortable. They wanted to *understand* but they couldn't. They wanted to *solve* the problem. They wanted to *conquer* the assignment. In this process, however, the poster emerges slowly and collaboratively and has no fixed form or constraints.

Students spent hours arranging their collection of objects, exploring their inter-relationships, discovering new representations and rearranging the objects. They consulted their project journals for rationale and selected materials, components and techniques. In years when students had extreme difficulty selecting objects and struggled to cooperate in a group effort, I attempted to build a unified approach by having them think about everyday objects and their simultaneous banality and importance. Students came up with ideas such as toothbrushes and glasses which could represent their shared experience and create a commonality that everyone can understand (Figure 7). Eventually, the group selected and developed images and ultimately determined a hierarchy of information. Students cropped and occluded individual representations in order to create a visual summary of a group of images while maximizing visible visual information.

Collage technique is described as not only an approach to materials, but a process and an attitude of mind. Collage as a methodology not associated with solving identified problems,



**Figure 6.** Full-size 2012 poster for a performing arts centre in Havana, Cuba which students used to practice involving laser-cut foam core, corrugated cardboard, spray paint, stencils, Xeroxes, fragments of print advertising, free hand drawings, house paint, on a cardboard base build on foundation of city grids since the sixteenth century, the density of the urban population and the recent influx of tourism, colour, erosion of facades by sea spray and pounding surf.

but rather discovering new opportunities and ideas. It is an object and a process, a composition of related elements that produce a cohesive interrelated whole. Because collage mines



**Figure 7.** Extract from 2008 poster for a study of wellness centre, Myvatn, Iceland proving accumulated experience of daily use of toothbrushes as an abstract representation of shifting layers, topographic complexity and translucence, emergence landscape.

the expressive potential of found elements in unexpected adjacencies it is an ideal medium for enhancing our interest in collective contribution and shared objective.

The requirements of the poster are outlined in this way: document the ongoing studio culture consisting of a variety of performers. The range of materials available included anything in the studio. The intended audience for poster is the university community the students themselves for whom it will function as a private document. The envisioned outcome of the poster is twofold: promote the Senior Show exhibition and to preserve an impression of the aesthetic, attitudinal, and technical dynamics of the studio.

## Tasks

- (1) **Initial meeting** (15 students) gathers around a table large enough to hold 24" × 36" board.
- (2) **Overview** of project objective and timeline is introduced by professor.
- (3) **Introductions of ideas:** each student briefly presents their object, or parti, etc. and answers questions from the students and instructor.
- (4) **Board space** is necessary for the group dynamic so that everyone can participate in the process. This phase of the process, for example, developing the basic layout, require participation and agreement from all of the participants. Critical to the idea is the use of this shared space.
- (5) **Class reflection** occurs on the whiteboard that outline of two or three different initial design concepts for the group to comment on.
- (6) **Various designs** are diagrammed on the board in as much detail as possible in order to get as clear a direction as possible.
- (7) **Self-selection** of volunteers who made up the editorial team goes on to refine and finish the work. Some students are limited by the time needed to finish their own projects, others by their interest in the poster project. Before the entire group disperses they review the alternatives and choose one for development, or combine pieces that they like for a direction to follow.
- (8) **The editorial team** reviews modifies and clarifies one direction for development.
- (9) **Development stage:** The editorial manager(s) sets the team on task and coordinates work, aligning decisions with the agreed upon concept.
- (10) **In-process work** remains accessible in the studio through the next week so all class members can contribute feedback or promote ideas.
- (11) **When assemblage** is finished, it is scanned (high-end flatbed scanner) at a scale of 1:1 and printed with typographic additions.
- (12) **Wrap up:** Open critical discussion with class, and instructor is intended for the maximum degree of participation by the students. What is or is not the best solution is irrelevant: What is important is the discussion of the process and lessons learned.

## Design is inherently an interdisciplinary act

Because each studio is different, the Senior Design Studio poster is an artistic manifesto (Figure 8). The teaching paradigm is to document and manifest all facets of the studio experience and attempt to recognize a unity of the intellect, emotions, and spirit. It seeks to understand the wholeness and unique patterns of experience happening during the capstone studio class. The course methodology flows from the following principle: get the thought; worry about the grammar later. This attitude helps student learn to process information in new ways.

As the semester progressed and the project developed, students became increasingly comfortable allowing ideas to emerge and considering how those ideas might be used. They gradually loosened their uniform, standard and applied techniques into something without directive. They tapped into a new set of more intuitive, creative and flexible skills. They engaged in greater intellectual and emotional exploration and reflection. The studio experience began to evolve into something new.





**Figure 8.** 2006 Poster emphasized the design of leisure pavilion for the Ribbon Park, Troy Ohio/USA which students used techniques involving play dough, laser-cut models, masking tape, spray paint, stencils on board to represented their partis on a small island within park setting which in turn is set within the (extended) grid of the city.

Seniors also experienced that the interrelationship and integration of the various aspects of the graphic design process, with an eye to difficulties and solutions. The similarities between the core processes of architecture and graphic design include visual problem-solving and emphasize methods of translating compiled data into clear, visually dynamic solutions. An architect's primary skill is the judgment to separate what is essential from what is merely important. The same is true of the graphic designer. Both architects and graphic designers must maintain the critical importance of boundaries and interfaces.<sup>7</sup> Making the connections, both *within* the architectural curriculum and *between* architecture and other disciplines on campus, is, we believe, the single most important challenge confronting architectural programmes.<sup>8</sup>

After the experience, despite their resistances, students are equipped with a number of new aptitudes. They have learned to process information in a non-directive way. They have begun to question the value of individualization versus collaboration. They can now represent their individual selves in a group self-portrait. They have begun pursuing alternative routes. While these skills will be more or less valuable in different settings after graduation, students have now been exposed to different ways of ongoing interaction with others and their work.

They have additional skills which can help them in a variety of design and architecture related projects, such as organizing community events or festivals, raising money for projects, or being able to tell a story. They have increased their ability to help clients discern what they need or do not need, rather than simply following directives. Ultimately, students have moved beyond an intellectual understanding of designing a poster and begun a lifelong process of self-discovery and personal performances.

## Notes

1. Anthony, *Design Juries on Trial*.
2. Fisher, *In the Scheme of Things*, 30.
3. Cuff, *Architecture: The Story of Things*.
4. Leigh, "Platonic Dialogue."
5. Gurel and Basa, "The Status."
6. Shavelson, "What is the Basic Teaching Skill?"
7. Aldersey-Williams, H., Wild, L., Boles, D., McCoy, K., McCoy, M., Slade, R. and Diffrient, N., *Cranbrook Design*.
8. Boyer and Mitgang, *Building Community*, 85.

## Disclosure statement

No potential conflict of interest was reported by the author.

## Notes on contributor

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## Hot Sauce and White Chocolate: And1 and ghetto style in basketball

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### ABSTRACT

In the 1980s and early 90s, American professional basketball benefited from a steady rise in its popularity and appeal. With Michael Jordan's retirement after the 1998 season, however, a new era was in progress. Incoming NBA players like Latrell Sprewell, Stephon Marbury and Allen Iverson brought energetic, but polarizing, personas to professional courts. Cultural critics Todd Boyd and Kenneth Shropshire examined the contemporary media reaction to these players, which exploited racially-coded terms like "thug" and "gangster" to disproportionately demonize black athletes' transgressions. Their analysis provides a window onto an era that saw several upstart athletic apparel companies capitalize on a new wave of distinctly "authentic" and "urban" aesthetics. And1, a sportswear company that emerged in 1993, fought a vigorous and creative underdog campaign against sports marketing giants like Nike to define basketball style. And1 peaked as the number two domestic retailer of basketball shoes behind Nike in the early 2000s, yet the company has not been sufficiently examined as a successful brand or countercultural force.

This essay examines graphic design and advertising that channeled an urban, black anti-hero aesthetic in basketball. Companies like And1 rose up to challenge established sports marketing businesses, and in so doing redefined the image of the basketball hero for a new generation of players and fans. For a brief period the streetball game rivaled the professional league in popularity and influence; And1's marketing and aesthetic were pivotal aspects of this transition. And1's branding efforts can be examined through Douglas Holt and Douglas Cameron's "cultural innovation theory," which proposes that subcultural brands like And1 fulfill "unmet ideological desires" in their audiences. And1 did so by positioning itself as a credible, vested member of the organically formed streetball community and exploiting such a strategy to assume a posture of street reality that was exceptional.

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## Introduction

“Damn it feels good to see people up on it! ... To succeed on your own terms is to win in style, and Brothas have always been about style.”<sup>1</sup>

Basketball, particularly professional basketball, has an extensive and rich history as a locus of urban, minority culture and style. Beginning with early twentieth century teams like the South Philadelphia Hebrew Association ‘Sphas’ and the Harlem Rens to modern organizations like the NBA and And1’s Mixtape Tour, basketball has had a uniquely inner-city expression and aesthetic. Basketball brands from merchandisers such as Nike, Adidas, Reebok and And1 conveyed these metropolitan origins to a mass market that cut across urban, suburban and rural audiences. Given that American media often projects an ideal that is traditional, small town and white, urban styles from ethnic minorities would seem to be a ‘hard sell’. Yet basketball apparel and shoe brands have successfully attracted audiences through the presentation of such imagery and aesthetics.

This article will explore how the And1 brand channelled a range of urban subcultures, such as graffiti, hip hop and most particularly streetball, which is the term given to the creative style of basketball played on outdoor city courts. These subcultures are united by the driving creative presence of inner-city black youth. And1 formed a complex partnership with these creators to present a unique vision of ghetto life and style that briefly translated into mass-market success.

### Gettin’ over: the ‘cultural innovation’ strategy of And1

And1 was formed through the efforts of three students at the University of Pennsylvania. Seth Berger, Jay Coen Gilbert and Tom Austin developed a sarcastic T-shirt line that featured a stylized graphic of a basketball player. The illustrated character posed in aggressive basketball-specific moves and dispensed cutting putdowns of rivals.<sup>2</sup> The name of the company signaled its attitude to streetball aficionados: ‘and one’ was and is a popular phrase on playground courts. In a streetball game, without the benefit of a referee, an offensive player might shout ‘and one’ if the defender fouls the player in the act of successfully scoring. In a regulation game, such an act would award the offensive player a free throw to score one additional point.

As the brand expanded into athletic apparel, video games, videotapes, DVDs and shoes, And1 began to challenge other players in a crowded sports merchandising marketplace. As And1 focused solely on basketball, Nike came to be its chief rival for the attention of a market primarily composed of young male consumers. Both brands strove to establish cultural legitimacy with this audience through the presentation of basketball players and performers who could project an appealing sense of status and style. And1 and Nike followed significantly different paths in developing their cool credentials, however.

One explanation for either brand’s success might be found in the ‘cultural innovation’ theory of Douglas Holt and Douglas Cameron. In their book *Cultural Strategy: Using Innovative Ideology to Build Breakthrough Brands*<sup>3</sup> Holt and Cameron suggest that brands like Patagonia, Ben & Jerry’s and Starbucks succeed because of ‘what the product stands for – its ideology, which, when staged through myth and cultural codes, becomes a distinct cultural expression’. These new best-of-breed brands uniquely leverage

subcultural roots; they wield their marginal origins like a pole to vault from the slipstream into the mainstream. In the text, Holt and Cameron provide numerous case studies of brands that '[convert] an ideologically charged element of subcultural experience into a broader marketplace myth, to be enjoyed ritually by less-engaged mass-market consumers.'<sup>4</sup>

Holt and Cameron do not address And1, although the brand is a compelling case for their theory. For And1's rival Nike, the authors analyse the Mars Blackmon campaign of the 1980s, which was one of the early advertising blitzes that launched Michael Jordan's stardom. The character of Mars Blackmon was played by Spike Lee, who when paired with Michael Jordan, crafted the subtle suggestion that Jordan was from the ghetto himself. The authors note that Jordan was not, in fact, from an inner-city ghetto, but they determine that 'it mattered little ... in the cultural imagination of America, the ghetto was where all black athletes came from and relentless determination was how they got out.'<sup>5</sup> For Nike, inner-city origins provide narrative contrast; endorsers can claim and reject the ghetto at the same time by projecting the message: 'Yes, I came from there, which makes me real. Now I am better than there, which makes me great.'

By contrast, And1 achieved credibility and authenticity through a portrayal of American ghetto style that respected the creativity and ingenuity of inner-city youth. For And1, the ghetto was not a mere prop. And1 neither abandoned its ghetto entertainers for greener pastures, nor did it propose that its street heroes should do the same. And1's advertising campaigns revealed a sharp attention to visual and cultural detail that separated And1 as a credible source of street style from rivals like Nike.

And1's brand ideology provides a rare positive example of a particular positioning technique from Holt and Cameron's 'cultural innovation' theory, which Holt termed 'coat-tailing on cultural epicenters'. In a 2002 article, Douglas Holt notes, 'the most important epicenter today [is] ... urban culture, the culture (music, fashion, slang, body language, etc.) of America's poverty-stricken African-American and Puerto Rican urban ghettos.'<sup>6</sup> Numerous companies in the past two decades have worked to align their brands with the 'cool' that urban culture projects in the minds of consumers, particularly young suburban audiences. Brands like And1 can craft a 'credible ongoing relationship within such a community' so that the brand's audience views the brand and its offerings as 'a vested member' with 'stature within the community that is deserved'. Holt notes that brands that only pretend to cultivate such relationships function as 'mere cultural parasites that appropriate valued popular culture.'<sup>7</sup> Nike and And1 fall on distinctly different sides of this contrast between authenticity and pretense that Holt provokes.

A cornerstone of And1's credibility was laid through the 'Mixtape Tour'. Although streetball existed long before And1, the company created the Mixtape Tour as a showcase of stylized basketball entertainment that travelled by bus across America. And1 also created a related reality TV programme on music channel MTV to vault the game into the national consciousness in a new way. Thus, the Mixtape Tour combined elements of the Harlem Globetrotters' barnstorming approach with the emerging medium of reality television. And1 took its own roster of basketball players, unsigned with any other professional league, from city to city to play against volunteer teams of local legends. At each stop, these homegrown stars could compete to join the tour.<sup>8</sup>

The title of the tour was an informed reference to the broader culture from which streetball emerged. In hip hop, a mixtape is a low-budget recording of an emerging artist's

work, including remixes and collaborations with more established artists. Mixtapes are purposefully distributed in a guerilla fashion – hip hop artists establish their credibility through selling mixtapes in casual settings like swap meets or parking lots. The authenticity of such humble beginnings was deftly referenced through the Mixtape Tour's structure of recruiting emerging basketball talent at each tour stop.

Like the Globetrotters, the And1 performers deployed dazzling displays of creative basketball to appeal to the crowd. These moves did not always advance the team or better position a player to score or win. Rather, the flashy maneuvers celebrated the style and elan with which streetball players performed the game. Referees enforced traditional basketball regulations only in the loosest fashion: a player's freedom to move around the court and dribble creatively was celebrated over a standard interpretation of the rules. Courtside announcers provided nonstop flamboyant commentary, which favoured style over accomplishment, through a loudspeaker system to engage the crowd.<sup>9</sup>

And1's design and marketing also mined rich veins of urban subcultures related to streetball. At its height, the brand could credibly convey allied inner-city cultural expressions like graffiti and hip hop music. And1 marshalled the attitudes and aesthetics of each of these forms to craft a compelling brand experience that sparked a brief blaze of success. Like a 'crossover' dribble from one of the brand's performers, And1's imagery and message deftly slipped into the crowded field of sports marketing with a unique and clever presentation of ghetto style.

### **The Player: And1's new generation**

And1's logo, dubbed 'The Player', began as a T-shirt character, but evolved into a flexible logo to be used on a variety of merchandise and marketing materials. The image aspect of the logo was a silhouetted, dribbling player charging toward the viewer. This refined icon became part of the larger And1 logo, which was frequently featured on promotional materials as well as the primary product of the brand: shoes. In an interesting departure from athletic shoe norms, And1 shoes did not feature a stylized abstract shape as the central form of its logo, such as Nike's swoosh or Converse's star and chevron. Rather, And1 branding on the shoe itself primarily consisted of the And1 logotype and 'The Player' symbol, sometimes displayed separately.

The logo version of 'The Player' cuts a striking figure. The male basketball player holds the ball high in his left hand, frozen in mid-dribble. The left leg lunges forward and out of the frame. The calf of the left leg is slightly larger than the right shoe, which is positioned back and away from the viewer, as the player is running quickly. This enlargement suggests foreshortening: we are seeing the player at a dynamic angle as he leaps downcourt. Likewise, the torso is canted forward, further heightening the sense of drama and exertion.

The torso and the legs are both angled to the left, which creates the possibility of a rapid change in direction. The left side dominance of the form, from the player's point of view, versus the dramatic right lean and the head's rightward gaze suggests the moment before a player cuts hard to the opposite side. Crafty shifts in direction are central to the streetball game, as entertainment and style are valued equally with scoring and winning.

The logo here recalls Michael Novak's comments on basketball in *Joy of Sports*:

Basketball is, as more than one connoisseur has noted, a game of feint, deception: put-on. The very word is a ghetto word. One 'puts on' the man. ... Every motion in basketball is disguise for another. ... Like the stories and legends of black literature, the hero does not let his antagonist guess his intentions; he strings him along; he keeps his inner life to himself until the decisive moment.<sup>10</sup>

'The Player' was intended to be visually ambiguous with regards to race. There are no facial features depicted and the image was often rendered in a grey color. As viewers we are left with the large hands, broad shoulders, narrow waist and springy legs of 'The Player', which builds a superhero body able to blaze past rivals and dunk with ease.

As an iconic basketball player, 'The Player' symbol is an interesting mutation of the NBA logo. The dynamic, aggressive stance of the And1 silhouette in relation to the traditional appearance of the NBA logo parallels the cultural shift occurring on and off the court. The NBA logo, based on an historical player's silhouette, reflects an earlier era in professional basketball. The professional league's logo freezes a similar dribbling, feinting pose, yet it is positively sedate when displayed next to And1's brash baller. The contrast between these two logos neatly captured the generational conflict that And1's stars prompted for the authorities and administrators of the NBA. Further, the cartoony, superheroic pose and physique of And1's 'Player' heralded the dazzling, rule-bending displays of And1's professional and streetball stars.

### **American Way: Latrell Sprewell as the American Dream**

Basketball traditionalists were not the only community confronted by And1's brand and endorsers. One of And1's earliest and most aggressive appearances in mainstream culture came during the 1999 NBA playoffs. To promote their signature endorser's success with the New York Knicks, And1 aired a 30 second TV commercial featuring Latrell Sprewell. At the time of the commercial, Sprewell was still notorious due to an incident wherein he assaulted his coach during a practice session argument. As cultural critic Todd Boyd noted of the Sprewell commercial in his article *Mo' Money, Mo' Problems: Keepin' it Real in the Post-Jordan Era*:

This is not the first time that a company has used a controversial basketball player to sell their product. First we had Charles Barkley's famous 'I am not a role model' Nike commercial, and later a plethora of commercials that tried to capitalize on Dennis Rodman's eccentricities. Nothing, though, has been like this.<sup>11</sup>

Sprewell was suspended for an entire season after his 1997 altercation. He was dropped by his major sponsor, Converse. And1 recognized not only his ability, but also the kinship between their brand and Sprewell's image, so they offered to partner with Sprewell in the immediate aftermath of his suspension. Robert Gist, Sprewell's agent at the time, noted that '[And1's] feeling is "Let's sell Latrell." We don't want a better image, we want Latrell's image, because we know people will accept Latrell for who he is. It's not a management image or a corporate American image.'<sup>12</sup>

The advertising agency Crispin Porter + Bogusky developed the Sprewell campaign and television advert. In the commercial, Sprewell sits thoughtfully while his afro is being braided into a 'cornrow' style. He offers his thoughts on the public's perception of his character, concluding with a bold summation: 'People say I'm America's worst nightmare. I say I'm the American Dream.' The ad used a blues guitar version of *The Star Spangled*



*Banner* as the background for Sprewell's commentary. This musical selection was chosen by Seth Berger, then-president of And1, at the commercial's inception. In an interview regarding the commercial, Berger took a bold stance on And1's signature performers. 'It's a race-neutral culture that is open to endorsers and heroes that look different. These people are comfortable with tattoos and cornrows. ... If you have a problem with [the "American Dream" ad], then your problem is you.'<sup>13</sup>

### **Hot Sauce to go: And1 and the cool pose**

Although Sprewell's commercial prompted national criticism, And1's 'Streetball Is My Job' ad campaign went further in probing America's racial stereotyping and divisions. A prototypical advertisement from the campaign, featuring one of And1's signature endorsers, 'Hot Sauce', demonstrates the careful attention to authentic detail that garnered And1 notoriety and success. Philip 'Hot Sauce' Champion performed on And1's 'Mixtape Tour' from its inception in 2002.

A moody black and white photo serves as the dominant image for 'Hot Sauce's' And1 advert. Before the iPhone and Instagram, black and white photography could still reliably connote seriousness and realism. Monochromatic grey-scale imagery suggests the language of serious portraiture, a real and revealing look at one of And1's signature endorsers. There is a visible grain to the image, which suggests photographic film with its attendant authenticity. In the kind of detail twist that subtly separates And1 from its contemporary competitors however, such stylistic concerns are grist for improvisation and play: a filmic look does not have to be slavishly adhered to, and in the case of this image, there is a slight blur at the bottom corners to add a digital flourish to an otherwise analogue capture.

'Hot Sauce' is shown displaying a signature derivation from the norms of basketball. A viewer who is familiar with the rules of the game immediately recognizes that Hot Sauce's move is illegal – he cups the ball in his right hand and wrist, but the ball is on the left side of his body. This kind of dribble is a violation termed a 'carry' in basketball; Hot Sauce's move is such a flamboyantly exaggerated version of a carry it transcends any possible concern with the mainstream rules of the game. The art of 'put-on' and 'deception' noted earlier by Novak is here so thoroughly sublimated into the attitude of the streetball game it is re-expressed as its opposite: a willful rejection of basketball norms. Within the 'no rules' world of And1 streetball, Hot Sauce's dribble is a feint and misdirection; it would confuse a defender as to his direction and intention. To the mainstream community of basketball enthusiasts, Hot Sauce's image projects an open and flagrant disregard for the standards of the sport.

Nearly every aspect of 'Hot Sauce's' personal presentation also spites basketball convention, to say nothing of its rejection of mainstream cultural norms. A long gold chain loops lyrically over 'Hot Sauce's' shoulder, adding dynamic motion to his trick dribble move. The And1 shoes are untied. The basketball shorts are significantly oversized. The uniform top is traded in for a plain white undershirt. In the dramatic lighting of the photo, the viewer can make out the suggestion of braided hair, done in the 'cornrows' fashion, with a paisley bandana tied around the performer's forehead. A prosaic watch on his left wrist completes the suggestion that basketball integrates fully into the performer's everyday life. No special concessions are made to the playing of the game – it

is something that can happen at any moment and can end just as suddenly. In And1's presentation, shoes do not need to be tied, nor do uniforms need to be neat, or even complete, for basketball flows not from equipment or convention, but rather, from style.

These details of personal adornment further signify 'thug' to a white middle class audience, if not outright 'gangster'. Oversized clothing and bandanas in particular are associated with gang identification, while flashy gold jewelry and revealing clothing are generally identified as lower class aesthetics, or even directly labelled 'ghetto'. Viewers of the ad campaign at the time, and even today, would rarely see such obvious symbols of outsider status in a commercial endorser.

The emotional demeanor of 'Hot Sauce' further signals And1's subversion of conventions. His head is turned slightly from the viewer, but his eyes do lock onto our gaze. His mouth is open, but it is neither smiling nor snarling. He breathes through the calm effort of his performance. His face is passive, but watchful. His look could be taken as a 'cool pose'. Psychologist Richard Majors and sociologist Janet Billson wrote *Cool Pose: The Dilemmas of Black Manhood in America* to describe the calculated response to disaffection and anomie practiced by black men, particularly in inner cities. Majors and Billson note that black men statistically do not have access to the traditional means of success that whites do and therefore craft a 'symbolic universe' with 'unique patterns of speech, walk and demeanor'.<sup>14</sup> This 'cool pose' manifests as both flamboyant flourishes and detached stances. The authors note that 'rather than reveal his true feelings [the black male] presents a serene exterior in a brave attempt to project a composed, controlled self image'.<sup>15</sup>

The 'cool pose' of 'Hot Sauce' is not only an insider cue to his ghetto authority, but it is also a rejection of advertising conventions. Countless ads featuring 'Hot Sauce's' professional predecessors, from Dr. J to Magic Johnson, display a smiling figure promoting a product. A contemporaneous ad from shoe brand Fila portrays NBA player Grant Hill smiling in a tuxedo while showing off new Fila shoes.

The And1 '1 Ball' ad for 'Hot Sauce' celebrates its endorser's skills and prowess. 'Hot Sauce's' personal style and his success in the game of streetball are inextricably linked. The text that appears in the ad relates a personal narrative from the aptly-named Champion. The message reads 'My handle is my mic. My moves are my rhymes. This game is my life.' The performer is introduced by name and nickname, Philip Champion aka 'Hot Sauce'. The final, largest type is reserved for 'Streetball is my job.' 'Handle' and 'mic' are both slang terms; 'handle' refers to dribbling ability, while 'mic' references a microphone, a singer's primary tool in hip hop music. Here again, one's ability to creatively dribble and confuse, even embarrass, your defender lies at the heart of the streetball game. Dribbling the ball is 'Hot Sauce's' primary expressive tool. The next line makes the connection more explicit by comparing his on-court moves to lyrics from a rap song. The final stanza maintains the form of the first two lines with a broad statement that could represent And1 in total: 'This game is my life.' The connection to hip hop and rap still remains in this final line, as many rap performers refer to the music business as 'the rap game'.

The message's typographic form is rendered in a handwritten style that echoes the styles of 'tagging'. Tagging is a subset of graffiti art where words are rendered in a fluid, undecorated script that favors rapid production over detailed elaboration. Unlike tagging in urban spaces, which might be scrawled hastily, the text in 'Hot Sauce's' ad is formed skillfully and rhythmically to address the negative space around the performer's

body. To the uninitiated this tag-like text borders on illegibility: in particular the 'd' in 'handle' is formed like a 'delta' symbol, which clouds an already insider term.

The design and content of the advertisement relates 'Hot Sauce', and by extension, And1, to various allied urban subcultures. Within the ad, 'Hot Sauce' subsumes himself within a larger ghetto culture of streetball and hip hop. The 'game' stands larger than the performer, as the game itself is the source of life in the formulation of the advert. Streetball is neither a mere sport, nor a ticket to escape the ghetto. Streetball is a culture, hence its comparison to hip hop music. 'Streetball is my job' pokes a subtle jab at the NBA for positioning itself as the only legitimate form of basketball. For 'Hot Sauce' and And1, streetball, and through streetball, the ghetto, is the judge of success. For And1, to be 'ghetto' is to be 'great'.

### **White Chocolate: white boys in a black game**

In a continuation of And1's streetball ad campaigns, white professional player Jason 'White Chocolate' Williams proffers his closed fists against a backdrop of collaged cutout photos. On his fingers the words 'White Boy' are tattooed in Gothic letters. The images behind him show slices of white bread, white chocolate, American dime coins, basketballs and backboards, video game controllers and stereo headphones.

The latter images, of basketballs, video games and music equipment, reflect And1's consistent connection to hip hop culture and basketball itself. The former images however, of white bread, white chocolate and the dime coins, portray a coded flipping of cultural conventions regarding white versus black status. 'White Chocolate' was a nickname bestowed upon Jason Williams by a NBA public relations employee when he played for the professional league's Sacramento Kings. The employee, Stephanie Shepard, reflected that Williams' game had 'flash and pizzazz', which reminded her of 'schoolyard street ball when I go to Chicago'.<sup>16</sup>

The hip hop term for an assist in basketball is a 'dime', hence their inclusion in the advert. Williams' gaudiest plays were often reserved for his passes to teammates – during the 2000 NBA All-Star Game, he passed the ball to a teammate by first moving it behind his back and then hitting it laterally with his elbow. The play didn't result in a score, yet the crowd erupted with cheers. These kinds of plays made Williams a perfect professional league parallel to the entertainers of the Mixtape Tour.

The white bread slices combined with Williams' hand tattoo provide the most loaded discourse of the advertisement. 'White bread' is a mild, yet still derogatory, insult for white people, implying a plainness that is beneath consideration. 'White bread' has no style. Williams' knuckle tattoos spell out 'White Boy' to note that he is aware of the fact that his status as a white player with black style is rare. 'White boy', like 'white bread', is a mild pejorative in the world of basketball; to be 'white' is to be slow, plodding, un-athletic, and methodical. Williams initially shied away from the nickname 'White Chocolate' as it made his difference a centerpiece of his identity.<sup>17</sup> By the time of this advertisement, Williams may have more fully internalized and 'owned' his position as a crossover performer from white to black culture.

As with Champion, Williams' demeanor reflects a studied 'cool pose'. His head is tilted to the side and back. His mouth is expressionless; his face is subtly slack. His eyes and eyebrows give the only hint as to his attitude: he regards the viewer with a jaundiced

eye, implying that others need to prove their credibility to him. His fists are held together close and enlarged by the lens of the camera. The posing of hands echoes the phenomenon of 'gang signs' whereby gang members and imitative youth position their hands to represent a group or neighborhood. The knuckle tattoos that spell out 'White Boy' are rendered in Gothic script, a type style that was re-popularized through gang tattoos before being mainstreamed in sports logos.

Williams' ad provides the most striking example of And1's overall brand philosophy: to provide a 'race-neutral' space, inclusive of white and black fans alike, where black style set the standard. American society has made long strides in creating more inclusive spaces, but these zones often invite minorities to integrate into hegemonic white patterns of thinking and behavior. On inner-city courts, and in And1's stylized world, white players can get in, but only if they measure up to black standards of skill and style. Few spheres of American life provide opportunities for such displays of pride and solidarity for young black men.

### **Ghetto state of mind: And1 and its white audience**

And1's passion for culture and community creates a dramatic counterpoint to Nike. Where performers like 'Hot Sauce' positioned their styles within a larger community, Nike's individual endorsers exhibit 'solo combative willpower' to borrow a phrase from Holt and Cameron. For Nike, the ghetto is a prison, which must be laboriously overcome. For And1, the ghetto is a nexus of culture and style that can be celebrated. Nike's formulation perpetuates the pernicious ideology that lies at the root of the American economic system – the poor are poor because they lack the grit and determination to rise above. Nike's version of the ghetto suggests a reinforcement of the status quo for whites: if Nike's ghetto could be overcome by relentless determination, then perhaps the competitive mechanisms of capitalism work.

And1's branding and messaging offers no economic salvation for a ghetto audience. However, the brand's position creatively unravels the moral judgment that the wealthy are valuable while the poor are worthless. For Nike, poor youth can achieve value by 'just doing it': by applying willpower and determination, poverty can be overcome through success in sport. For And1, poor youth have value just by being who they are: creative risk takers whose style reframes an unfair situation.

This essential difference between And1's branding versus Nike's campaigns raises critical questions for the cultural innovation theory of Holt and Cameron and any analysis of crossover success. And1 possessed much clearer credentials in urban cool and did briefly rise to be the number two manufacturer of basketball shoes behind its archrival Nike.<sup>18</sup> However, the brand has a considerably smaller footprint not quite a decade later.

And1's trajectory poses a number of questions for future study. Are true unique roots enough for a brand to 'break through' to mainstream success? How might we measure the value such origins bring to a brand among the many different pieces that add up to a set of cultural expressions? Holt and Cameron's analysis of Nike raises the question of whether the authors possessed the proper knowledge and experience to determine what cultural expressions 'count' as ghetto style. In light of this, how do designers and researchers become authentically immersed and sincerely versed in a culture quite distinct from their own in the course of creating and analysing new cultural expressions through branding?

And1's portrayal of the ghetto should not necessarily be seen as more 'realistic' than competitors like Nike, although it makes a much stronger claim to authenticity. Mass media narratives of either the black experience or the conditions of American inner cities still lurch from leaden stereotype to stereotype, a decade past And1's peak cultural moment. Certainly, many poor youths in America's inner cities have no interest in basketball, streetball, hip hop or graffiti. However unlike Nike, And1's integration of ghetto culture and aesthetics was neither dismissive, nor so obviously opportunistic. For And1, one can 'make it' without capitulating to the normative aspects of the American Dream. One does not have to internalize the conformity and drudgery of middle class accomplishment. In And1's vision, a baller can not only reject the norms of the system, he can use creativity and flair to make a whole new game.

## Notes

1. Boyd, "Preface – The Game Is To Be Sold, Not To Be Told," xii.
2. Wolff, "The Other Basketball," 66.
3. Holt and Cameron, *Cultural Strategy*, 8.
4. Holt and Cameron, *Cultural Strategy*, 221.
5. Holt and Cameron, *Cultural Strategy*, 36.
6. Holt, "Why Do Brands Cause Trouble?," 84.
7. Holt, "Why Do Brands Cause Trouble?," 84.
8. Wolff, "The Other Basketball," 66.
9. Wolff, "The Other Basketball," 66.
10. Novak, *The Joy of Sports*, 114.
11. Boyd, "Mo' Money, Mo' Problems," 63.
12. Weiss, "The Selling of Latrell Sprewell."
13. Weiss, "The Selling of Latrell Sprewell."
14. Majors and Billson, *Cool Pose*, 2.
15. Majors and Billson, *Cool Pose*, 27.
16. Wise, "His Game," D1.
17. Wise, "His Game."
18. Jensen, 2009.

## Disclosure statement

No potential conflict of interest was reported by the author.

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## @ face value // expanding our typographic repertoire

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### ABSTRACT

Communication in the twenty-first century is increasingly devoid of the verbal and visual cues that have been proven to be critical in conveying and interpreting meaning. Communicating with clarity is the challenge imposed with text-based forms of dialogues, and this becomes more and more important as a greater number of our personal and professional exchanges are transacted via text-based methods of delivery. Use of email, text messaging (texting), instant messaging (IM), discussion forums, and social media platforms such as Facebook and Twitter are increasingly routine and rapidly becoming the norm for many day-to-day interactions.

This article proposes that a new set of typographic elements needs to be developed that extends our written vocabulary, complementing and improving the communication opportunities that technology – and its increasingly text-based forms of interactions – offers. Voiceless and face-less interactions create enormous challenges when expressing and interpreting meaning and intent. A viable system of new punctuation that supports brevity and clarity can be developed utilizing existing typographic glyphs, making implementation of new marks convenient and immediate. Unlike emoticons, and texting acronyms/abbreviations, new punctuation marks might have the advantage of being appropriate for personal *and* professional dialogues.

This argument introduces evidence across a broad temporal canvas. It examines our current communication environment, follows with a historical review of punctuation; continues through to a 2013 survey of high school students; and concludes with a recommendation around the number and type of new punctuations necessary to advance the clarity of our text-based dialogues.

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## Introduction

“The single biggest problem with communication is the illusion that it has taken place.”

– George Bernard Shaw

Business or personal, formal or intimate, boisterous or banal, flippant or dire – communication is at the hub of our interactions with the world around us. Defined by Merriam-Webster

as 'the act or process of using words, sounds, signs, or behaviours to express or exchange information', communication in the twenty-first century is increasingly devoid of 'sounds' and 'behaviours' as a growing number of our connections take place using text-based mediums. The impact of the absence of visual and auditory elements on the clarity and quality of communication is significant.

As revealed by Professor Albert Mehrabian, body language and voice have a profound effect on communication. Mehrabian's investigations resulted in the following formula:

7% of meaning is in the words that are spoken.

38% of meaning is paralinguistic (the way that the words are said).

55% of meaning is in facial expression.<sup>1</sup>

With a mere 7% of meaning contained in words alone, it is evident how difficult it is to create precise communications when only words are available. Communicating with clarity is the challenge imposed with text-based forms of dialogues, and this becomes increasingly important as more of our personal and professional exchanges are transacted via text-based methods of delivery. Use of email, text messaging (texting), instant messaging (IM), discussion forums, and social media platforms such as Facebook and Twitter are increasingly routine and rapidly becoming the norm for many day-to-day interactions.

Text as a vehicle of communication relies almost entirely on external styling, talented wordsmithing, or intrinsic knowledge/assumed intent to convey emotional and intellectual nuances. The growing number of communications that take place using text-based methods (IM, texting, email, social media, etc.), coupled with increasing demands on time and focus, makes devising and implementing an efficient method of imbuing greater clarity into our writing an overdue imperative. A new set of typographic elements needs to be developed that extends our written vocabulary, complementing and improving the communication opportunities that technology offers.

## Background

The current trend towards text-based forms of communication as facilitated by the Internet (and by extension, mobile devices) shows every indication of continuing and growing. Global Internet access continues to expand, increasing worldwide from 16 million users (0.4% of the population) in 1995 to 2,336 million (33.3% of population) as of 2012. In North America, 78.6% and in Europe 61.3% of the population are identified as Internet users.<sup>2</sup> As the Internet has expanded so have the ways it has been integrated in our lives as a tool for business, education, entertainment, and social interactions. Social media in the form of blogging, Facebook, Twitter, Tumblr, texting, and similar forums and conduits represent activities that 1,403.2 million participate in worldwide.<sup>3</sup>

Voiceless and faceless connections are rapidly replacing daily exchanges that once would have been conducted face-to-face or voice-to-voice, leaving us with text as our main method of communication delivery. The lack of visual and auditory cues severely hampers traditional ways of extracting information and understanding communications. 'Interpersonal and Affective Communication in Synchronous Online Discourse'<sup>4</sup> and 'The Effect of Nonverbal Cues on Relationship Formation'<sup>5</sup> represent two of many studies that are concerned with how the Internet is impacting interpersonal connections. Text-based exchanges, already suffering from diminished expressive resources, are further challenged with increased competition for time and attention: 'Text requires more cognitive processing. It's often not the



best medium for communicating or understanding information.<sup>6</sup> In order to generate greater clarity and empower our ability to communicate efficiently, we must evolve the mechanics of our text-based dialogues.

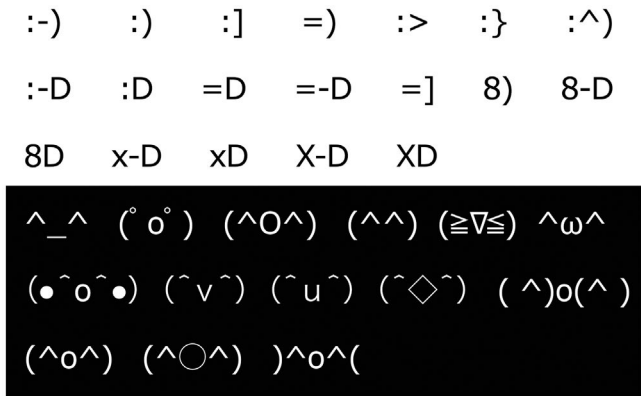
It borders on ironic that while information and communication technology (ICT) is the conduit through which our many digital transmissions occur, it is also responsible for creating conditions that impair the mental processing required to foster effective communication. With unprecedented volumes of information and entertainment a mere click, tap, or swipe away, being connected has been shown to adversely impact our cognitive abilities. Nicholas G. Carr in his Pulitzer Prize nominated book *The Shallows: What the Internet is Doing to Our Brains* asserts that we are losing our capacity for concentration and contemplation.<sup>7</sup> Studies continue to connect ICT with disorders ranging from sleep disturbance to depression and to increased levels of stress,<sup>8</sup> all of which have negative effects on our cognitive process.

Time we are likely to devote to writing and reading our correspondence is also compromised by access to ICT, further frustrating efforts to communicate effectively. The liberating opportunities ICT creates are quickly taken over by new tasks and traditions. The time no longer required to make a trip to the bank to deposit a check or pay bills might now be filled with Facebook status updates. Time-consuming phone calls might be avoided, but now inbox 'triage' is necessary to deal with increasing volumes of email. 'The addictive nature of the Internet and the long hours we spend on it can leave us with an attention span of nine to five seconds – goldfish have nine.'<sup>9</sup> These abbreviated attention spans impact both ends of the communication spectrum; sending and receiving are both prone to less care and effort.

Text (written words alone, not to be confused with texting) relies on expert manipulation, or implicit knowledge, to add clarity. Skilled writers of both prose and poetry are adept at choosing and configuring words and sentence structure to craft meaning. The art of graphic design is often concerned with manipulating the visual formatting of words and text to add clarity and expression. When writer and recipient are well known to each other, it is possible that sub-text will be applied to what might be missing from explicit declarations. In the digital communication environment of the early twenty-first century, such possibilities are neither viable nor reliable.

It is probable that a certain percentage of the population with enough time, focus, and effort could consistently write well-worded and precise messages, but there will certainly be a percentage that lacks the education, maturity, or talent. There is often an expectation of expedience in many forms of digital dialogues, and the element of time alone may prevent deliberately honed missives. The axiom 'ass-u-me' should serve as a warning regarding sub-text and the assumptions it presumes.

Electronic/digital miscommunications (not to mention auto-correct mishaps) make for entertaining stories and anecdotes, but have equal power to generate circumstances with less amusing consequences. Clinical psychologist and marriage counselor Randi Gunther, Ph.D. makes this declaration: 'I am convinced that more misunderstandings and miscommunications are happening, markedly lessening the potential of a relationship success.'<sup>10</sup> Gunther attributes the cause to 'technological devices'. About 1,590,000 results in response to a Google search query containing the words 'email miscommunication'<sup>11</sup> suggest a situation that is rampant and of enough concern to merit copious commentary and advice. A recent paper issued from the University of Amsterdam acknowledges the imperfect nature of text-based mediums such as email: 'email is not always an appropriate medium for communicating complex messages. However, it could be if senders ... take extra care to be exact, clear and unambiguous in what they mean.'<sup>12</sup>



**Figure 1.** A collection of Western (white background) and Japanese (black background) emoticons, all intended to indicate a happy, joyful tone.

While Jackson and van den Hooff<sup>13</sup> suggest that miscommunication could be resolved by taking ‘extra care’ when authoring messages, findings published in *Egocentrism Over E-Mail: Can We Communicate as Well as We Think?*<sup>14</sup> contradict this. Their studies found that people correctly interpret the emotions of others over e-mail only about half of the time, although they think that they have made the correct inference almost nine times out of 10. Spanning the gulf between intent and perception requires a mechanism – beyond our choice and arrangement of words – that can be encoded in our written communications.

To facilitate clarity and precision in a frenetic communication climate – with limited time and eroding attention spans – solutions need to be simple, stable (able to be sent and received accurately across the bulk our digital platforms and devices), and efficient. The panacea to this predicament has been in front of us for centuries ... punctuation! Punctuation – in its current limited form – is already an intimate component of the discrete building blocks that form the bulk of the content we host, blog, post, send and receive. A carefully conceived punctuation system will provide an expedient method of adding clarity to text-based communications, with the potential to be applied to all flavors of correspondence and discourse, personal and professional.

**Not up to the mark – emoticons, acronyms, and other solutions**

Emoticons and some cryptic texting-inspired abbreviations are a means of attempting to compensate for the absence of facial expression, body language, and voice in written communications. These practices are already integrated into the way many people are sending and receiving messages, and these individuals might argue they are adequately filling the emotive void. Emoticons in particular are a very literal effort to add a face to written dialogues, but are generally considered appropriate only for very casual exchanges. Nearly all authorities on Netiquette (web and digital etiquette) offer similar counsel on the use of emoticons and acronyms:

While some of these may be cute, there is little need for them in a business environment. Emoticons sent via business e-mail can paint an employee as puerile and unprofessional. Smiley faces should be left for personal e-mailing. In addition, unknown abbreviations can cause confusion.<sup>15</sup> The preceding advice can be extended to most communication contexts. Add to this

caveat that the use or abstinence of these textual contrivances may be determined by how one wishes to present oneself personally (as well as professionally). These devices may often be dismissed as juvenile and trite, and therefore regarded as inappropriate in all circumstances.

In addition, there is no assurance that what is authored by the sender will be received verbatim. Many email and messaging applications can be configured to 'translate' ascii combinations into comic facsimiles. Consider the vast differences between combining a colon and



Figure 2. A modest sample of texting acronyms and their meanings as issued in the form of a notepad for office/business use. <http://textually.org/textually/archives/2006/01/011314.htm>.

closing parenthesis to indicate humour and having that same combination reconstituted on the recipient's end as a garish, occasionally animated (and sometimes auditorily enhanced) cartoon. Unless one is six-years-old, or communicating with someone who is, it is difficult to imagine this as a desirable outcome.

Emoticons also suffer from a lack of consistent representations. There are numerous ascii combinations intended to represent (approximately) the same tone, and it is now common to see both Western and Japanese style emoticons (see Figure 1), further complicating this lexicon. Add to this inventory the unique cartoon representations supported by many posting, blogging and messaging services. These diverse methods of rendering symbols intended to communicate the same tone jeopardizes the ability understand the form (and by extension the sentiment attached to it). Correct interpretation of emoticons has been shown to vary widely,<sup>16</sup> and a study from Rice University suggests that females use emoticons twice as often males.<sup>17</sup> This lack of consistent representation, interpretation and implementation further invalidates the emoticon as a reliable device.

Texting abbreviations occupy a similar space regarding general attitudes of protocol as emoticons. Devised as an efficient method of comment and a way to indicate a vast range of inflections to text messages, a modest lexicon consisting of staples such as LOL (laughing out loud), TTYL (talk to you later), and OMG (oh my god) quickly exploded to proportions that warranted manuals, online lookup functions, and even office notepads to 'help sort out the confusing alphabet soup which makes up the acronyms of text messaging'<sup>18</sup> (Figure 2). Webopedia.com, last updated in September 29, 2015 currently has a reference list that contains Beal, 2015. Not only is the sheer volume of possibilities unwieldy, but the perponderance of these abbreviations are chiefly concerned with contracting larger statements. Overall, the incentive is to dramatically cut down on key strokes, not articulate tone or affect.

In a manner similar to slang, texting vocabulary and trends are in constant flux. American linguist and political commentator John McWhorter, in his 2012 TED talk 'Txtng is killing language. JK!!!', argued that texting is actually a new construct which he refers to as 'fingered speech', an evolving form of communication that combines verbal and written elements. The lack of constancy that this continually developing form of dialogue represents makes it a poor candidate to derive or provide enduring enhancements to methods of written communication.

Strategies have emerged to use imposed styling, such as colour-coding, to clarify intent. Discussion forum sites such as forum.rpg.net and kh-vids.net have established colour protocols when posting sarcastic comments. Arrangements such as these may have successful compliance and implementation in a closed and controlled environment, but lack of consistency in the display capabilities between digital platforms makes this an unreliable scheme. Guidelines directed at accessibility and online content creation advocate against colour as an intimate component for communication of function.<sup>19</sup> Device dependency is one consideration factoring into this recommendation; the other is the increasing education and sensitivity around accessibility issues such as compromised (or complete lack) of vision, and colour blindness.<sup>20</sup> Finally, diverse cultural connotations regarding colour<sup>21</sup> collide with the global nature of the Internet and the communications it facilitates.

With personal mobile devices seemingly in everyone's possession – and the ability to make a phone call more convenient than ever before – it has been argued that considerations and additions to supplement written forms are unnecessary. Yet, despite

the unprecedented ease of voice calling, reports and studies indicate that texting use is on the rise. Among teens 'Cell-phone texting has become the preferred channel of basic communication.'<sup>22</sup> Pew Internet and American Life Project claims 31% of American adults prefer text messages to phone calls,<sup>23</sup> and Ofcom (the independent regulator and competition authority for the UK communications industries) reports that overall, 68% of people communicate with friends and family on a daily basis using any text-based methods.<sup>24</sup>

Additionally, there are substantial volumes of text-based communications that are broadcast-based. Platforms like Twitter, Tumblr, Facebook, and even email are used to reach a broad and sometimes unknown population, making the notion of one-on-one voice contact moot.

Affirmation of an ongoing desire and need for clarification of intent and tone within digital communications can be found in the recent developments of various software. One particular software offering developed by Beyond Verbal claims to '... finally enable machines to understand who we are, how we feel and what we really mean.'<sup>25</sup> More specific to text-based dialogues is an algorithm devised by computer scientists at The Hebrew University in Jerusalem, '... programmed to recognize sarcasm in lengthy texts by analysing patterns of phrases and punctuation often used to indicate irony.'<sup>26</sup>

Both technologies were devised as a way to further manipulate and analyse mass data culled from a variety of digital sources for corporate purposes – but technology news columns from sources such as popsci.com, businessinsider.com, and slashdot.org were quick to forward speculation about application for individual use. Contemplating personal use of such software mediation can only provoke conjecture and anxieties about reliability and concerns for the potential pitfalls of reactions and actions based on incorrect interpretations. An efficient and unambiguous system of indicating sarcasm and additional points of intellectual and emotional nuance directly in our communications will certainly prove to be a superior system for personal application.

## **Back to the basics – the panacea is punctuation**

Punctuation began as a way of supplying direction to a speaker's voice in order to reflect tone. *Punctus interrogativus*, the precursor to the modern-day question mark, made its appearance in the eighth century and was used to indicate that the reader should raise his voice to indicate inquisitiveness.<sup>27</sup> The exclamation point has a less-distinct lineage to trace:

The current running theory is that it comes from Latin. In Latin, the exclamation of joy was *io*, where the *i* was written above the *o*. And, since all their letters were written as capitals, an *i* with an *o* below it looks a lot like an exclamation point.<sup>28</sup>

First introduced into English printing in the fifteenth century, the exclamation point is commonly defined as a mark used 'to show a forceful way of speaking or a strong feeling.'<sup>29</sup> Our digital dialogues are in critical need of exactly the quality of voice that both the question and exclamation mark already contribute. However, with only two such marks available, it is no wonder that alternate methods of expression like emoticons and texting abbreviations have been so rapidly constructed and adopted to attempt to address the rich and varied complexities of communication. As a mechanism of imbuing our dialogues with accurate intellectual and emotional nuance, punctuation seems to have been arrested in a near embryonic state.



**Figure 3.** A facsimile of the Percontation Mark.

Examining the current usage of traditional punctuation marks reveals significant deficiencies. The exclamation point, combined with the perceived/acknowledged need to compensate for visual and paralinguistic cues, is used more than ever before. David Shipley (comment editor of *The New York Times*) and Will Schwalbe (editor-in-chief of Hyperion Books) state 'Email is without affect. ... It has a dulling quality that almost necessitates kicking everything up a notch just to bring it to where it would normally be.'<sup>30</sup> 'Thanks' reads and feels like it lacks sincerity compared to Thanks!, and 'Hi' sans exclamation mark might as well be accompanied by a yawn for all the enthusiasm it suggests. A single exclamation point now seems to be an obligatory mark of etiquette in order to convey some level of sincerity in salutations and indications of appreciation; therefore, a repetitive series of the mark are now required to express the original sentiment and intent of the point.

The question mark has a more daunting and diverse role to fulfill. It needs to cover the bases between a sincere inquiry, to expressions of various degrees of confusion, and then over to the opposite side of the intellectual/emotional field to deal with rhetoric. With the diverse emotional and intellectual ranges the exclamation and question mark need to span, it is little wonder there remains such a high degree of ambiguity and miscommunication in our text-driven dialogues. New marks would assist and clarify the expressions, sentiments, and emotions that our paltry collection of punctuation cannot adequately address.

### **Historical support for the need for an extended system of punctuation**

The deficient condition of punctuation is not a new discussion. This perplexing situation has been tested and commented on at various points in the history of the written word by individuals intimately involved with the form and function of type.

Henry Denham is credited with devising and introducing a mark to indicate rhetorical questions (Figure 3). As one of the outstanding English printers of the sixteenth century, Denham was well positioned to foster its inclusion in printed materials. Known as *punctus*

— Philos. *Ironie socratique* V. la partie encycl.  
 — Typogr. *Point d'ironie*, Signe particulier, proposé  
 par Alcanter de Brahm, pour indiquer au lec-  
 teur les passages, les phrases ironiques d'un  
 ouvrage, d'un article.  
 — ENCYCL. Littér. L'*ironie* est, en rhétorique,  
 ou un trope ou une figure de pensée. Elle con-  
 siste, dans l'un et l'autre cas, à dire le contraire  
 de ce qu'on pense, de telle manière que le lec-  
 teur ou l'auditeur comprenne le sens caché sous  
 cette raillerie. « Bon apôtre! », « L'homme de  
 bien! », en parlant d'un fripon, voilà la figure  
 de mots. La figure de pensée commence dès  
 que l'ironie se développe en une suite de pro-  
 positions ou de phrases. Tel livre de *Gargantua*, tel pas-  
 sage de la satire *Ménippée*, telle lettre de Voltaire, les



Point  
d'ironie.

Figure 4. Irony mark as designed by Alcanter de Brahm in a French encyclopedia from 1905. Claude Augé, ed. (1897–1905), "Ironie (irony)", Nouveau Larousse illustré 5, Paris, p. 329.



Figure 5. Bazin's new punctuation proposals.

*percontativus* or a percontation mark, it was introduced in the 1580s. It experienced some degree of usage, but is documented as dying out in the seventeenth century.<sup>31</sup>

Worth noting is the ingenious simplicity this mark possesses, how clearly it connects to its intended meaning, and how efficiently it could be inserted into existing typesets. By reversing the direction of the question mark – a symbol whose meaning had widespread understanding – it clearly indicates that a different kind of question is in play. The particular shape of the mark, with the exception of its orientation, was already designed and therefore circumvented the need to create a unique symbol for all the various typefaces in use. The technology of the day, however, consisting of hand-carved punches for every typographic entity that was printed, still made including the new symbol into type sets laborious. As a result, the percontation mark was not widely embraced by printers of the time, and lack of consistent implementation likely led to its decline into obscurity. A similar symbol (see Figure 4) was proposed by French poet Alcanter de Brahm (alias Marcel Bernhardt) in his 1899 book *L'ostensoir des ironies* [*The Monstrosity of Irony*], but Bernhardt's mark was intended to indicate sarcasm/irony.

Ambrose Bierce, renowned journalist and satirist, was an early advocate for extending the existing lexicon of written marks. In a famous 1887 essay, appropriately titled *For Brevity and Clarity*, he expressed the following:

I crave leave to introduce an improvement in punctuation – the snigger point, or note of cachinnation. It is written thus [cannot reproduce, picture a horizontally oriented parenthesis approximating a smile] and represents as nearly as may be, a smiling mouth. It is to be appended, with the full stop, to every jocular or ironical sentence; or, without the stop, to every ironical clause of a sentence otherwise serious ...<sup>32</sup>

Clarity and brevity are indeed exactly what new, well-crafted punctuation marks would foster – a consistent and concise method of embellishing contemporary communications.

Vladimir Nabokov of *Lolita* fame would regularly use unconventional applications of existing punctuation and grammar in his writing. He is quoted in an interview that ran in *The New York Times* as stating, 'I often think there should exist a special typographical sign for a smile – some sort of concave mark, a supine round bracket,'<sup>33</sup> expressing a yearning for additional emotive written symbols that predated the first documented application of the emoticon by over a decade.

In 1966, renowned French writer Hervé Bazin proposed a host of additional punctuations in his book *Plumons l'oiseau*. An examination of the unwieldy state of the French language, *Plumons* included the acknowledgment that written language lacked the nuance of the spoken word. His proposed additions (see Figure 5) included the 'love point', 'conviction point', 'authority point', 'acclamation point', 'doubt point' and Bazin's own version of an irony mark.

The preceding collection of suggestions from just a few distinguished/distinctive historical voices establishes recognition of the advantages of an extended system of marks. Even writers of repute, possessing the dexterity to script particular meanings and inferences, saw new punctuation as an opportunity to enhance their craft. In the twenty-first century, there are more people writing, more often, for more reasons and under more diverse circumstances than ever before. Consider the advantage of a concise manner of clarifying meaning for a burgeoning population of writers less skilled than a Nabokov, Bierce, or Bazin. New punctuation will likely not create a population of better writers, but conceivably, better communicators.

## Here and now – recent efforts to expand the punctuation lexicon

Contemporary communication difficulties created by the preponderance of text transmissions has been the focus of considerable commentaries and recommendations for new punctuation marks. While many suggestions have been offered in jest (see Figure 6), the existence of such conversations acknowledges a void exists. Comic undertakings aside, there have been sincere contemporary efforts to move punctuation forward.

The ElRey (see Figure 7) could best be described as double-ended exclamation point. Created by Ellen Susan, this new punctuation mark:

... resides in the emotional range between the just-the-facts period and the whoop-to-do excitability of the exclamation point. While the new mark would clearly signal positivity, it would save us from communicating with the unhinged emotionality of a note slipped between junior-high students.<sup>34</sup>

The SarcMark (see Figure 8) was introduced in 2010 and initially saw significant media attention including *The Wall Street Journal*, *The New York Times* and *ABC News*, to name a few. While more descriptively named than the ElRey, it does little to convey its meaning through its form. A scantily modified @ symbol with a pearl of a period in the middle, it is the self-declared 'official, easy-to-use punctuation mark to emphasize a sarcastic phrase, sentence or message.'<sup>35</sup>

The reception for both marks could be reported as tepid, but that should not be taken as evidence that there is not a definite need for such advancements. What prevents a more enthusiastic welcome might in part be revealed with an autopsy of the marks themselves. The proposed ElRey feels oddly divorced from its enthusiastic ancestor. The attempt to dilute the original sentiment by mirroring the form creates a mark that reads more like a parking lot curb, bringing the cadence of the sentence to a complete and less-than-thrilling halt. If





**Figure 6.** Excerpt from '8 New Punctuation Marks We Really Need.' <http://www.collegehumor.com/post/6,872,071/8-new-and-necessary-punctuation-marks>.

dissected logically, an argument could be made that the ElRey should indicate extra enthusiasm due to the doubling of the exclamation point form, a conclusion that would still be at odds with the intent.

The SarcMark is destined to be destitute. The initial impression of an extreme similarity to the @ symbol makes its true intention impossible to decrypt. While the origins of the @ symbol are murky at best, there is nothing in the various theories, or its current application, that lends any logical segue or extrapolation to conclude sarcasm as its meaning. The spiralling shape of the mark could more appropriately be connected to sentiments such as 'I'm going crazy' or 'running around in circles'. In addition to this disconnect between form and affective function, the SarcMark's lack of significant acceptance might also be attributed to a series other issues. The SarcMark had to be purchased, downloaded and installed; a special key command sequence was required to invoke it; there was a significant lack of supported



**Figure 7.** An ElRey Mark, by Ellen Susan. 'A Proposed Addition to the Way We Punctuate Now' Design Observer. 13 Feb. 2012. Web. 2 Mar. 2013.

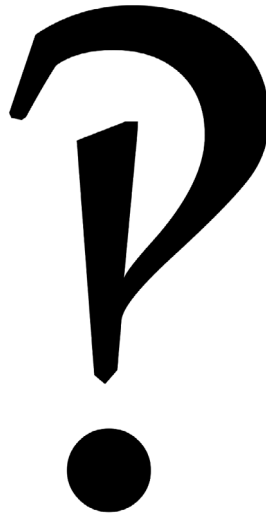


**Figure 8.** A SarcMark. 'SarcMark – Home.' Web. 2 Mar. 2013. <http://02d9656.netsoljsp.com/SarcMark/modules/user/commonfiles/loadhome.do>.

platforms; and lastly, successful use of this mark required both sender and receiver to have the mark available on their device(s).

To gain acceptance and optimize integration, new marks should possess particular qualities. Clarity cannot be aided if the forms of the marks seem contradictory to their purpose. Particularly when first introduced, connection between form and function can be leveraged into recollection and application. Interesting possibilities exist in combining and exploiting known meaning of certain symbols with connotative qualities of others.

Function will be equally as important as form; specificity of meaning for each mark will need to be assigned and respected. The story of the interrobang (see Figure 8) might contain a lesson about the importance of this attribute.



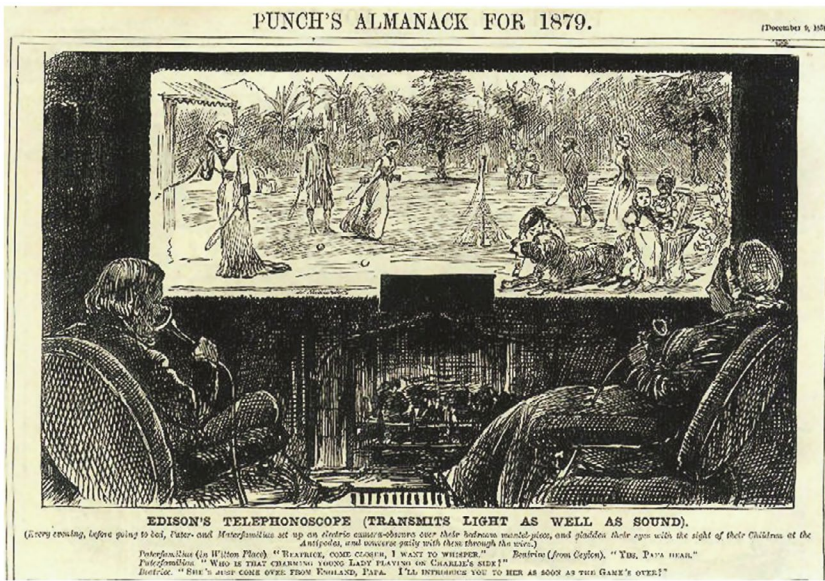
**Figure 9.** The interrobang, by Martin K. Speckter. A non-standard punctuation mark, availability and method of access is based on computer OS and installed fonts.

Martin K. Speckter introduced the mark in 1962 in an article written for *TYPEtalks Magazine*; it was integrated into the typeface set *Americana* by American Type Founders in 1966 and added to Remington Rand typewriters in 1968.<sup>36</sup> A promising start and now largely obsolete, the interrobang can be found loitering under Wingdings 2. This symbol contributed nothing that the combinations of ?! or !? could not already provide, but required potential users to go out of their way to do it. Factor into this already inconvenient scenario the diversity of attitudes and tones it might represent: ‘it asks a question in an excited manner, expresses excitement or disbelief in the form of a question, or asks a rhetorical question.’<sup>37</sup> Conclusion, there is no discernible advantage to invoking it.

## Back to the future

In 2014, in an ever-growing number of countries and cultures, people literally have in hand the ability to communicate at any time with voice. Further, what was once only a fantastic icon of future possibility and evolution – the video-phone (see Figure 10) – is now not only a reality, but in many circumstances a simpler and less-expensive alternative than voice-to-voice dialogue via a traditional (landline) telephone. In such a climate, who could have predicted that one of the most traditional methods of communication would be so ubiquitous and even preferred? Written language, beyond all logical predictions, dominates the myriad ways our world communicates. The 8-bit word, it seems, will sustain long beyond the 15-second sound byte.

Various digital preservation initiatives such as The Centre of Excellence for Digital Preservation; India and Alliance for Permanent Access (APA); The National Digital Stewardship Alliance; and the more extreme (and less pragmatic) Printing Out the Internet are currently underway. These efforts acknowledge the volatile nature of our digital data, and seek to preserve our digital heritage. What is here today may indeed be gone tomorrow as sites and servers hosting all manner of content shut down and disappear. Given the volume of



**Figure 10.** Early television/videophone concept, a forecast (almanac) for 1879, posted in the December 9th, 1878 issue of *Punch*, by artist George du Maurier.

content introduced into the digital stream, the diversity of its authors, and evolving ways of expressing attitudes and ideas, how will today's commentaries and dialogues be interpreted by future readers, historians, etc?

The authentic meaning of particular statements in works as renowned as *The Bible*<sup>38</sup> has been fodder for debate and interpretation based on the belated placement of commas into the text. Separated by time and familiarity, how much intent and meaning might remain unknown, or at best speculative, in our contemporary writings without a method of determining clear intent? A prescriptive approach to inscribing intellectual and emotional nuances could be an important key for instilling meaning now and preserving it for posterity.

## Moving forward – the shape of things to come

Historical evidence provides proof that punctuation has been falling short of the mark. Desires expressed and efforts put forth can be reflected on when devising a workable system of extended punctuation that encourages adoption. Specificity of meaning, convenience of application, and semiotic/connotative connections will all play a significant role in future efforts to forward new punctuation. Taylor Houston, contributor to LitReactor and active instigator/instructor in various writing programmes, shared this perspective:

... to successfully implement any new mark into the popular vernacular – i.e. get people to actually USE it – it should spin off of an existing idea or use for that mark. ... Capitalizing on the history of a particular mark might be the key to its evolution.<sup>39</sup>

Making new marks available so they can be integrated into our current communication torrent is a final consideration, and potential hurdle. Reflecting on the failings of the SarcMark provides a valuable lesson in this regard. To fully invite adoption, new marks need to be available for writing and reading across a vast and varied amount of devices and platforms,

as well as accessible in established and ever-increasing selections of typefaces. To foster a sincere campaign of implementation, new punctuation symbols need to be immediately available and conveniently accessible. Rather than creating new typographic characters, a more practical and efficient strategy would be to create new punctuation traditions utilizing existing marks.

Twitter's use of # stands as an excellent example of the popularization of this sort of reinvention. The octothorpe a.k.a. pound sign a.k.a. number sign can trace its origins as far back as the fourteenth century, but is now better known to millions as the hashtag. Similarly, the @ symbol's first documented use was in 1536, and later became utilized in commerce as a mark to denote a per unit price. Now an essential element of email communication, it was selected for use in email addresses by computer scientist Ray Tomlinson because of its availability on computer terminal keyboards 'I was mostly looking for a symbol that wasn't used much.'<sup>40</sup> It is significant to note that in both cases, these marks still function successfully as symbols within other very different contexts. Contemporary application has created alternate uses and meaning, not exclusive ones.

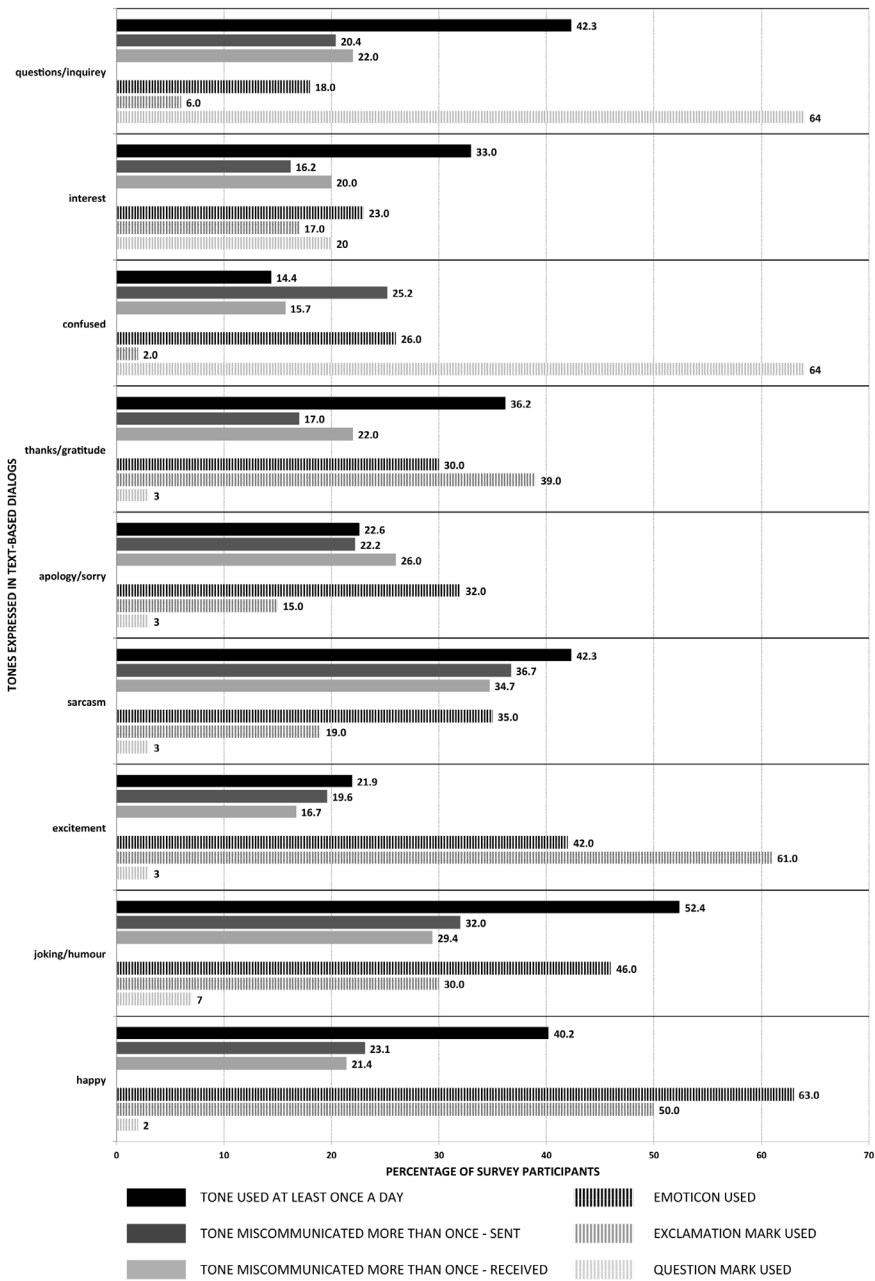
We do not need new marks, we need to give old marks new (or rather expanded) meanings. Forms already contained within the repertoire of characters of standard font sets can be reused. Current functions and connotations of familiar/available symbols could be exploited, under-used symbols will find new life, and unique combinations of these marks will create opportunities for efficient, specific, and nuanced written communication.

## **Drawing the line – what needs formalized expression**

Determining which tones and attitudes are most in need of clarification in our text dialogues needs to occur before appropriate marks, or combinations of marks, can be assigned. Not every shade or tint of expression needs to (or should) have a mark to represent it. The unwieldy result of such a collection would most likely collapse under its own weight. Conversely, making clear distinctions, and avoiding amalgamating somewhat similar sentiments under one broad symbol, is imperative to preserve the principle of specificity defined earlier.

Several venues of investigation could be considered when contemplating how to determine what tones would benefit most from a method of accurate indication. The historical efforts of Bazin, de Brahm, and Denham suggest sarcasm, irony, humour, and rhetoric as likely candidates. Tracing the evolution of the emoticon also reveals a hierarchy of expressive desires, with the smilie (to indicate humour/joking) generally regarded as the first emoticon devised and embraced in the age of digital dialogues. More contemporary suggestions like the SarcMark also points to sarcasm, while the ElRey is offered as a tempered version of the exclamation mark.

Past efforts and new speculations present possibilities, but the overall spectrum of tones represented seem limited and might not address the requirements of today's communication environment across diverse device and delivery options. The brisk exchanges texting typically demands might present some needs that are not obvious from an emailing, discussion forum, etc. tradition or perspective. Similarly, tweeting might present a different system of priorities, requiring a writer to be succinct, but without a temporal timer. To create relevant enhancements to our current punctuation system that support clarity, new marks should represent those tones that are most used *and* most frequently misunderstood throughout



**Figure 11.** Graph presenting results of survey data. The percentage of students using specific tones (at least once a day or more), the reported miscommunication (more than once) of those tones and the number of students are using emoticons, exclamation marks and question marks with particular tones.

the varied conduits of digital text-driven dialogues. To generate an accurate and current inventory, a survey was determined an able tool for such an investigation.

A survey was developed late in 2013 to discover which tones are most frequently used, most frequently misunderstood, and how these particular tones were being delivered/

supported. The survey creation began by generating a broad selection of specific emotional and intellectual tones collected from the following sources:

- ‘User Study on AffectIM, an Avatar-based Instant Messaging System Employing Rule-based Affect Sensing from Text.’<sup>41</sup>
- Historical and contemporary efforts to introduce new punctuation marks
- Contemporary discussions about ‘new’ punctuation and miscommunication
- Software developments to detect tone in text
- Paralinguistic documented expressions of emotions
- Most popular emoticons available on Facebook
- Most frequently used emoticons used on Twitter

This examination resulted in the following compilation of 17 tones: happy, confused, excitement, urgency, anger, frustration, sadness, disappointment, guilt, fear, surprise, sarcasm, joking/humour, questions/inquiry, thanks/gratitude, interest, and apology/sorry. The survey also included ‘other’ with spaces available for participants to include their own options, thus not limiting response choices.

Survey participants were asked to rate the frequency they expressed particular tones (though frequency is relative to overall usage, and subjective). The options listed were: never, rarely, sometimes, often, and always (at least once a day or more). Participants were then asked to indicate the various methods they implemented when expressing particular tones. A series of checkbox options were presented so multiple options could be selected, to prevent limiting responses to a singular method. In addition, an n/a option was provided to ensure those completing the survey were not compelled to choose any of the provided options. These options were: say it (as in to explicitly declare); ! exclamation mark; ? question mark; acronym/abbreviation; emoticon.

The survey concluded with an inquiry into the frequency of miscommunication/misunderstanding encountered when expressing each of the 17 tones. Participants were asked to rate the frequency of miscommunication with messages they sent, and then again with messages they received. The options given were: never; maybe once; at least once; more than once. An ‘n/a’ option was provided for use with tones that survey participants might never have expressed or (knowingly) received.

The survey was delivered late in 2013. The survey sample consisted of approximately 10% of the total student population of 1250 of an urban high school in Winnipeg, Manitoba, Canada. As frequent users of varied digital text-based methods of communication, this particular demographic seemed particularly appropriate to draw initial data from.

As a result of the data collected from the survey, nine specific emotional and intellectual tones – out of the seventeen offered as options – emerged as being most frequently used by the participants (at least once a day or more); joking/humour, sarcasm, questions/inquiry, happy, thanks/gratitude, interest, apology/sorry, excitement, confused. A threshold of 14% or above was established, omitting values that fell at 11% or below to exclude outliers. Figure 11 presents an abridged synopsis of the survey results that pertain to the nine most frequently expressed tones.

Those same nine tones were reported (from 16%–36%) misunderstood ‘more than once’ along either end of the communication spectrum (sent or received). It is probable to speculate that those incidences are under-reported due to a failure of recollection, and lack of knowledge of when miscommunication had occurred on the recipients’ end.

With miscommunication confirmed among all nine of the most frequently expressed tones, the next factor that was examined was how these tones were being supported within a text-based environment. With two legitimate punctuation marks available to provide affective clues, both the exclamation mark (17%–61% depending on tone) and question mark (20%–64% depending on tone) are being used frequently and often across very diverse tones. High emoticon use (18%–63% depending on tone) also points to efforts to clarify meaning within a computer-mediated environment.

While these survey results confirmed that a schism between intent and interpretation exists in text-based dialogue, the nature of that miscommunication became an additional line of inquiry. Happy – for example – ranked as the most frequently expressed and most frequently miscommunicated, in spite of being most supported with emoticon use. Joking/humour displays a similar profile. Why were these upbeat, light-hearted tones being misconstrued? A similar sort of inquiry for almost all nine tones could be posed. It would seem that there is a general tendency to question sincerity in Computer Mediated Communications (CMC), which distorts intent. An investigation into the use of irony by Jeffrey T. Hancock revealed:

‘... contrary to expectations, speakers in the computer condition used more irony than face-to-face speakers,<sup>42</sup> suggesting a justified climate of scepticism.

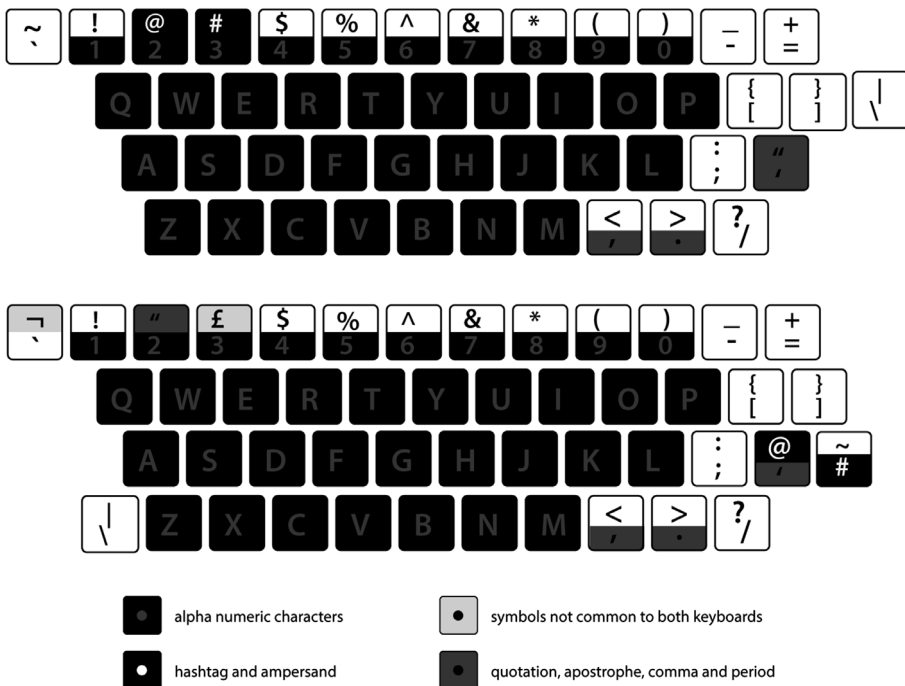
An interesting possibility now presented itself. A method to address the persistent suspicion of irony/sarcasm might be a key component to creating a less ambiguous communication environment. If, for example, there was a widely understood and consistently applied mark to indicate sarcasm, the absence of such punctuation removes the suspicion of a less-than-sincere sentiment. To date the closest approximation of this type of device is the emoticon, which suffers from many inadequacies as detailed earlier.

Consider the following example with a statement like ‘that sounds like fun’. Depending on the predisposition of the recipient (and perhaps prior history with the sender) this remark could be interpreted as: sincere/interested, sarcastic, or excited. Now consider the impact of a mark into general usage that indicates sarcasm, this now liberates the exclamation mark to revert back to its original function to indicate excitement, and a lack of expressive punctuation indicates a sincere sentiment that does not have to be oversold with an exclamation mark to ensure it is perceived as positive. Tones like apology/sorry, which might easily read as insincere/sarcastic, would benefit in a similar manner.

While clarity to all nine tones would be aided with the integration of punctuation to express sarcasm, some might still benefit from the addition of specific marks. Joking/humour and happy both show high emoticon usage (the specifics of that usage were beyond the scope of the survey) and it is worth considering the commonalities between the two. Both tones being upbeat and positive, they could easily share a punctuation mark. Again, once the taint of sarcasm is taken out of the mix, such positively intended tones and sentiments will read as such. A punctuation mark that indicates joking/humour and happy also addresses a persistent complaint, the overuse of exclamation marks.

Thanks/gratitude benefits from all of the above, allowing various levels of expression. ‘Thanks’ could be expressed as happy and light, or very enthusiastic (thanks for a huge favour or amazing gift), or perhaps just sincere (thanks for sending a card on the occasion of an illness or death). Interest garners similar benefits as thanks/gratitude, once emancipated from the suspicion of sarcasm.





**Figure 12.** Illustration depicting the two standard English-language QWERTY keyboards (American top, UK beneath) and the characters printed on the keys. The characters not omitted from consideration as new punctuations appear as black against a white background.

Statements involving question/inquiry or confusion would also profit from being liberated from the risk of being interpreted as sarcastic. Question/inquiry could also benefit from a dedicated mark to indicate confusion, leaving no doubt that a statement followed by a question mark is a question that anticipates a response. Expressions of confusion could then be voiced and interpreted as unambiguous declarations. Combining a question mark with either the sarcasm or happy/joking mark might indicate rhetorical questions, the choice of accompanying mark adding either a sarcastic bite or a lighter ironic tone.

## Shaping new meanings

Moving forward with the conclusions drawn from the survey results, selecting marks to act as new punctuations began. At the core of the selection was the strategy outlined earlier of repurposing existing typographic forms, though there were additional considerations. It would be advantageous for these marks to be already familiar to future users (in form, if not application), therefore making selections from the characters that are currently printed on the standard English-language QWERTY keyboards (American and UK) would facilitate a level of familiarity. This first level criterion eliminated 'hidden' forms accessible only with unique key combinations (such as shift + option/alt + 8 to generate a degree symbol).

In order that these new punctuations stand out as conspicuous and deliberate it seemed appropriate that the next level of evaluation would dismiss all standard alpha/numeric forms. Also excluded were marks that currently enjoy frequent and specific use, @, #, and elements

of punctuation such as quotation marks, the apostrophe and the full stop/period. Tomlinson's criteria for choosing the @ symbol in email addresses because of its infrequent use supports this decision. The exclamation and question mark however were retained, speculating that there might be opportunities to harness their expressive functions in combination with additional marks to generate new configurations. Finally, those marks not common to both the American and UK keyboards were dismissed. Figure 12 illustrates this winnowing process, with the remaining available characters represented as black against a white background.

The final collection of symbols consisted of:

` ~ ! \$ % ^ & \* ( ) \_ - = + [ ] { } | \ ; : < > / ?

Several attempts were made via focus groups and a small-scale survey to assign forms for these new punctuations based on a moderate to high percentage of agreement. Participants were invited to propose any one mark, or combination of marks, to define sarcasm, happy/joking and confusion; the results were inconclusive. It seems probable that more fruitful dialogue could be generated if new marks were presented as prototypes, providing a platform for critique and recommendations. What follows are this author's suggestions and the rationales, not intended to be definitive but rather offering possible solutions, requiring further study.

With the goal of proposing marks that could be in some way connected to, and rationalized for their new application as affective indicators, the remaining keyboard forms were scrutinized and evaluated for their denotative and connotative properties. Following the theory that a mark to denote sarcasm might have the biggest impact, it was the first punctuation to be addressed.

*An asterisk to punctuate sarcasm.* The asterisk is a decidedly under-used mark in typical text-based exchanges. It is commonly regarded as 'that mark that means read the fine print', and that fine print is usually a qualifier/disclaimer that makes the original statement or claim somewhat less appealing. Sarcasm is similar; it sounds like one thing, but is really something else. Sarcasm and irony are similar devices; they typically mean the opposite of what is stated. Sarcasm however has a harsh or cutting intent, while irony is generally used for humorous or emphatic effect. The ability to distinguish between the two could be facilitated by indicating irony as a combination of the marks for happy/joking and sarcasm – shifting the tone to a more jocular level.

*A question mark followed by a tilde to punctuate confusion.* Declarations of confusion are, as indicated by the survey results, typically accompanied by a question mark. Rather than breaking from that convention entirely, combining the question mark with an additional form would capitalize on current usage, but still create a distinct punctuation. The tilde is rarely seen in typical text-based exchanges – with the exception of acting as a smaller element of certain emoticon configurations. Viewed from a pictographic perspective, the wavering configuration aligns with the uncertainty that accompanies confusion. The tilde's use as a mathematical symbol denoting an approximation also lends logic to the recommendation of pairing this glyph with the question mark to indicate confusion.

*Double closing parenthesis to punctuate happy/joking.* Created by Scott E. Fahlman, the 'smiley' to indicate humour has enjoyed the most prolonged emoticon usage in computer-mediated communications, 'The exact date of the smiley's birth can now be determined: 19 September, 1982.'<sup>43</sup> Survey participants indicated using an exclamation mark to accompany happy and joking/humour with nearly the same frequency as emoticons. A simple solution

was devised to exploit this emoticon tradition while still creating a configuration that would resist being translated into a cartoon happy face. Inspired equally by the elongated form of the exclamation mark, and the familiar smile emoticon – a double closing parenthesis creates a unique punctuation that is emancipated from both.

With prototypes in place it now becomes possible to work with, and evaluate, these new marks in practical contexts. Further study is pending to measure the impact of these new punctuations on text-based communications.

## Conclusion

It is unreasonable to expect a significant shift in the current habits of our text-based communications unless enhancements are convenient and relevant; the alacrity with which numerous emoticons have been integrated into writing conventions attests to this. By offering similar simplicity and greater benefits with a mere three punctuations, it is plausible to predict these new marks might begin propagating and populating text-based dialogues. Expanding our typographic repertoire to include these additional distinctions of intent and tone would permit an efficient method of fostering greater clarity in a world that increasingly relies on written forms of connection.

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