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BLUNT CONFERENCE

AIGA Design Educators Conference *Blunt: Explicit and Graphic Design Criticism Now*, was held April 12-14 at Old Dominion University, Norfolk, Virginia. (http://bluntconference.aiga.org)

The *Blunt* sessions were:

1 Practice and Theory: Critiquing Design Activity
  Design Activity as Critique
2 History: Evaluations of Our Past
3 Writing: Language as a Tool
4 Education: Looking to Our Future

Three papers from the *Blunt* conference are included in this issue of *Visible Language*:

1 "Moving Beyond 'Just Making Things': Design History
  in the Studio and Survey Classroom."
2 "Critical Writing Strategies to Improve Class Critiques"
3 "Letterpress: Looking Backward to Look Forward"

These papers, selected by the conference organizing committee and the journal's double-blind peer-review process, represent the sessions on History — Alexander Cooper's, Rose Gridneff's, and Andrew Haslam's article on the use of letterpress technology in teaching; Writing — Jillian Coorey's and Gretchen Caldwell Rinnert's article on how writing can play a beneficial role in studio course design critiques; and Education — Dori Griffin's article on how design history might be better integrated and more influential in design education.

Many thanks to the conference organizers and the conference presenters for this glimpse into the multifaceted aspects of design criticism!
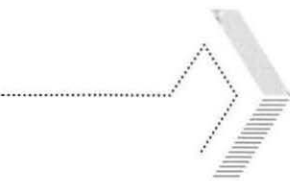
01 Moving Beyond "Just Making Things": Design History in the Studio and the Survey Classroom

DORI GRIFFIN

ABSTRACT

The disciplinary literature of graphic design education calls for the inclusion of design history in studio students' education. Yet evidence that the discipline has successfully answered this call remains scarce. This paper asks design educators to consider how our rhetoric might be misaligned with our practice on the subject of teaching graphic design history. It also asks educators to consider the need to develop an explicit, detailed body of case study literature dealing with the ways in which historical learning can be incorporated into the studio classroom. Design educators need to document and interrogate the specific ways in which we have been incorporating design history into the studio classroom. Enabling students to construct a functional model of design history requires more than a disparate and loosely defined set studio projects with history as their subject matter. Design educators need a way to learn about successful models and develop disciplinary best practices. Toward this end, the last section of this paper offers a detailed case study that documents one way to incorporate graphic design history into the studio classroom.

ground" draws on a sample of design programs at public research universities and tabulates the percentage of programs that actually require their students to study design history as a subject. As it turns out, these two views do not align as closely as our rhetoric would lead us to believe. This being the case, it seems critical for design educators to document and interrogate the specific ways in which we have been incorporating design history into the studio classroom.

If we genuinely want students to be able to construct a functional model of design history based on hands-on work accomplished in the studio, then their experiences cannot be based on disparate and loosely defined studio projects.

As educators, we need a way to learn about successful models and develop disciplinary best practices. Toward this end, in the last section of this paper I offer a case study from my own practice as a design educator. In it, I share one way I have attempted to incorporate graphic design history into the studio classroom.

THE VIEW FROM ABOVE: BEST PRACTICES, NASAD STANDARDS, AND THE PRIORITIES WE ARTICULATE

As a discipline, we spend a lot of time claiming that we value history, theory, and criticism. In 1983, in an essay that has since become canonical, Massimo Vignelli advanced "the call for criticism," decrying design practice divorced from any kind of critical analysis of the products of that practice. "Historical information, intro-spection, and interpretation are almost totally missing in our profession, and I think we feel a tremendous need to fill that gap," Vignelli wrote (Vignelli 1999, 273). In the three decades since, disciplinary luminaries have frequently quoted Vignelli as they, too, argue that graphic design must embrace historically situated criticism in order to advance. The first two Looking Closer volumes — early attempts to introduce critical and historical literature into the field of contemporary graphic design practice — capture the spirit of 1990s calls for criticism. In the first volume, the second essay in the book is Tibor Kalman, J. Abbott Miller, and Karrie Jacobs' excellent 1991 Print article "Good History / Bad History." In it, the authors argue that it is problematic for our discipline that "most design history is not written, it's shown" (Kalman, Miller, and Jacobs 1994, 26). At the end of the book, "Why Designers Can't Think," Michael Beirut laments that "the passion of design educators seems to be technology: they fear that computer illiteracy will handicap their graduates. But it's the broader kind of illiteracy that's more profoundly troubling" (Bierut 1994, 216-7). These observations bracket a text that is, at its heart, about beginning to establish critical literacy within the discipline of graphic design.

critical theory and social context in a meaningful way. Patrick Cramsie's 2010 The Story of Graphic Design: From the Invention of Writing to the Birth of Digital Design owes much to Drucker and McVarish including many of the same images and organizing the text in a conceptually similar fashion. Much more uniquely, there is also Meredith Davis' newly released Graphic Design Theory: Graphic Design in Context, published in 2012, which prioritizes theory even more explicitly and gives a theoretically-grounded historical overview in the second half of the text. With all of these choices, we can hardly complain — as we once were able — that there is no appropriate material available to us if we wish to teach design history, theory, and criticism.

It is not just individual designer-writers and textbook authors calling for greater historical and critical awareness. The National Association of Schools of Art and Design (NASAD) accreditation guidelines, too, highlight the importance of history, theory, and criticism. NASAD standards emerge from and are reinforced by a process of peer review and community consensus. They are widely accepted by graphic design educators as an appropriate and useful — if sometimes imperfect — tool for measuring performance. Therefore, this analysis of design history pedagogy works within these guidelines, rather than questioning if they are sufficient. So what does NASAD say about graphic design history?

"Normally," the 2011-12 NASAD handbook advises, "studies in art and design history and analysis occupy at least 10% of the total curriculum" for BFA students in graphic design (NASAD 2012, 103). The handbook further suggests "an understanding of design history, theory, and criticism from a variety of perspectives including those of art history, linguistics, communication and informa-tion theory, technology, and the social and cultural use of design objects" (NASAD 2012, 114). The stakes of NASAD accreditation being what they are, graphic design programs take great care to meet the 10% requirement. However, NASAD does not outline particular requirements in relationship to how many (if any) art history hours should be devoted to design history. So devoting 10% of their major credit hours to historical studies does not mean that graphic design students are studying any graphic design history. Instead, they are much more likely to be taking a two-semester survey of art history, then choosing among a collection of upper-division electives, which might include design history — but then again, might include Baroque painting or Renaissance sculpture. This is not to claim that the latter are without value to the student of design. But painting and sculpture students are not graduating without any required coursework specific to the history of painting or sculpture. Why do we allow the history of graphic design to slip through the pedagogical cracks?

position within the marketplace over time" (Center for Measuring University Performance 2011, 3). This analysis uses the Center's most current data — the list published in the 2011 annual report, which is based on data from the 2009 fiscal year. However, the stability of top performing universities over time, which the report discusses at some length, indicates that the 2011 list has been, and will be broadly useful over a relatively long period of time (Center for Measuring University Performance 2011, 6-8). In other words, this discussion of graphic design history pedagogy will not become defunct when next year's list is published.

Secondly, the MUP list compares universities based on quantifiable data, ranking them in relationship to the following nine measures: "Total Research, Federal Research, Endowment Assets, Annual Giving, National Academy Members, Faculty Awards, Doctorates Granted, Postdoctoral Appointees, and SAT scores" (Center for Measuring University Performance 2011, 15). These measures do not directly address the particulars of graphic design pedagogy, particularly in institutions where design is affiliated closely with the fine arts. But as aggregate indicators of overall performance, the nine measures do offer a quantifiable way to arrive at a generalized list of respected and successful institutions.

Thirdly, the MUP list offers a broad sample. As graphic design educators, we are familiar with the sticky question of whether graphic design should be taught – indeed, should be conceptualized – as a fine art or a social science. In considering the role that design history plays in graphic design pedagogy, it is not necessary to limit the discussion to one approach or the other. Thus, using the MUP list extends the question of graphic design history pedagogy beyond the confines of a fine arts school. Other rankings lists do not allow a similar breadth of conceptualization. The US News and World Report ranking system, for instance, considers graphic design a sub-division of fine arts at the graduate level and lists art schools separately from its ranked institutions at the undergraduate level. (Interestingly, US News also divides graphic design and multi-media visual communications into two different categories, while the schools on the MUP list have programs that can fall into either or both of these categories.) At many universities, graphic design is housed in departments, schools, and colleges of art; but this is not a universal practice. Thus, use of the MUP list allows for the disciplinary multiplicity that we, as design educators, experience in everyday practice.

Lastly, it is important to note that the MUP list used as the data sample here considers only public universities. This brackets out the question of how design history pedagogy differs between public and private institutions. While that difference may indeed prove

23/39 REQUIRE GD HISTORY

GRAPH 1

23/39 OFFER GD HISTORY

GRAPH 2

13/23 BFA PROGRAMS REQUIRE GD HISTORY

GRAPH 3

23/39 REQUIRE GD HISTORY

23/39 (4YR)
13/23 (BFA)

GRAPH 4

3/39 REQUIRE 4+ HRS GD HISTORY

GRAPH 5

*In general, then, while more than half of the schools
in the sample require graphic design students to take
a single three - hour survey course in design history,
the number is still substantially under two-thirds.*

I would argue that this demonstrates a disciplinary resistance
to teaching graphic design history as an important subject in its
own right, albeit one to which studio majors receive a necessarily
modest introduction.

tance of history and research, how to use historical models, understand the context design was produced in, and understand the influence on contemporary designers by looking at connections between the past, present, and future, formally and conceptually" (Worthington 2003, 61). Tellingly, these students take a historical survey of graphic design at the same time. Instances like these suggest that including history in the studio classroom is an increasingly common pedagogical strategy, particularly — though not only — in typography.

It is useful, then, to explore how studio projects with historical subject matter can enrich and expand a limited graphic design history survey experience. It is vital not to confuse enriching students' experience of graphic design history with teaching the broad and inclusive outline of that history through a systematic and critical survey. However, surveys by their very nature engage so many "objects, ideas, and practices" that few if any can be studied in great depth.

Engaging history as the subject matter of studio projects provides the opportunity to expand design history education in several useful ways.

The remainder of this paper will explore a case study from my own teaching practice, considering how studio encounters with design history can provide an opportunity for critical analysis, multi-modal learning, depth of study, and practical encounters with the uses for and limitations of visual style.

The course documented here, entitled Digital Visualization, was originally developed to teach Adobe Illustrator skills to sophomore-level graphic design students. Students complete a set of skills-based technical exercises and a series of more complex design projects. Historically, these projects have emphasized icon design and three-dimensional vector illustration. When I assumed responsibility for the course in the fall semester of 2012, I structured the course projects around the theme of graphic design history. My first, most basic goal was to have students encounter the history of their discipline. Their degree program requires them to take a one-semester graphic design history survey course, which is certainly better than no formal introduction to design history, but it leaves much room for expansion. Therefore, like many studio educators seeking to increase their students' historical knowledge, I redesigned the project briefs for Digital Visualization to center around the subject matter of design history. Students signed up to work with one of several available designers from a list that I had compiled. The list from the first semester included William Morris, Charles Rennie MackIntosh, Joseph Hoffmann, Joseph and Anni Albers, Charles and Rae Eames, and Frank Lloyd Wright.

of contemporary production methods. In other words, how does the process of creating vector graphics about (for instance) William Morris impact our understanding of the Arts and Crafts as both a philosophy and aesthetic? During process critiques, I asked students to probe how technological interfaces, like Adobe Illustrator, inform the formal design decisions that they make. To ground our discussion of the relationship between technology and practice, I have students read Ellen Lupton's essay "Learning to Love Software." This allows us to discuss, as Lupton puts it, "how the interfaces we use both limit and enable our work" (Lupton 2007, 157). While Lupton cites Lev Manovich's important 2002 article "Generation Flash," I have found that Lupton's much more journalistic "Learning to Love Software" pushes the critical capacities of most sophomores, so it is the apex of our reading experience. This reading primarily addresses software, and we use it as a framework for probing how technology frames the solutions that students develop in response to the Digital Imaging project briefs.

Since the subject matter of their own studio work is design history, we also discuss how technology and materials influenced the work of students' assigned historical designers. The most common realization during these discussions is that the letterpress easily accommodates horizontal and vertical typographic orientation but diagonals require some ingenuity. Students who work with Alexander Rodchenko are quick to point this out, particularly since Rodchenko's signature diagonal line functions as a leitmotif for much of their own work (*figures 1 and 2*). The differences between designing for print and screen also emerge quickly and fairly intuitively. I never include contemporary designers or exclusively graphic designers on the list we explore in this course. Therefore, it is usually the students who work with Charles and Rae Eames who address this issue, often by way of the designers' short films, particularly the 1977 film Powers of Ten (*figures 3 and 4*). For beginning students, it can be transformative to understand that technological innovations and limitations have always played a role in design practice.

I use the historical subject matter of Digital Visualization studio projects as an opportunity to have students critically engage the relationship between design decisions and means of production.

conceptualized universality differently than did Scandinavian Modernism, but both movements embraced the notion of a universal language of form (*figures 5 and 6*). The formal and aesthetic qualities of the two movements diverge dramatically, of course, and this often sparks a broader conversation about how both the concepts and the forms attached to "universality" have evolved over time and in response to various historical contexts. In the context of the Digital Visualization course, this conversation usually occurs during the first project, as students design a set of icons to represent their designer's biography. We begin our project by learning about Gerd Arntz and Otto Neurath's Isotype project of the 1930s and 1940s. As a result, students tend to frame their own goal in terms of universal communication. Articulating how "universal" design has changed over time complicates this undertaking, emphasizing the culturally and temporally situated position of our own contemporary design solutions. This is a useful realization for beginning design students. By coming to this realization through studio production, they actively discover how their own supposedly universal solutions are in fact highly contextual.

ALEXANDER RODCHENKO

FIGURE 5 *Alexander Rodchenko icons by Gabrielle Moran (2013)*

ALVAR AALTO

FIGURE 6 *Alvar Aalto icons by Zackary Hooper (2013)*

Active, studio-based historical learning is another valuable benefit of including history in the studio classroom. Certainly, history and theory lecture courses can include opportunities for meaningful discussion (Remington 2003, 202-4) and/or studio projects (McMahon 2003, 205-7). But the studio classroom accommodates the work of visual production and process critique much more easily than the survey course classroom because it has been designed for this purpose.

encounters with the uses for and limitations of style. This is valuable for students in two very different ways: It exposes them to a canonical selection of styles, and it allows them to question the ultimate value of style as a historical variable. Stylistic categories, though ultimately shallow, can be useful. Well-educated graphic designers should be equipped to differentiate visually between, for instance, the Arts and Crafts movement and post-Bauhaus Modernism (*figures 7 and 8*).
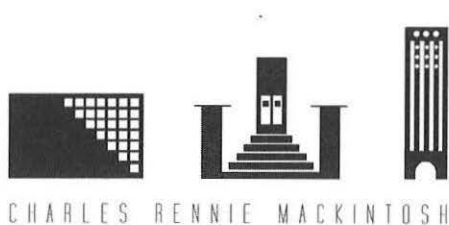
CHARLES RENNIE MACKINTOSH

FIGURE 7 *Charles Rennie MackIntosh icons by Neil Carey (2012)*

CHARLES & RAY EAMES

FIGURE 8 *Charles and Rae Eames icons by Shannon Threadgill (2012)*

Engaging the stylistic qualities of historical movements in an active way allows students to become familiar with the stylistic concerns that inform the history of our discipline.

The process of designing the biographical icons, for instance, underscores the difference between copying a style directly and understanding it deeply enough to reference it without repli-cating it. During the sketching stage of this project, most students articulate the desire to move beyond stylistic copying as they engage the problem. In many cases, this desire stems from a dual interest in making the icons appeal to a broad contemporary audience and in making the icons say something about the student's personal encounter with the historical work. Being able to iden-tify obvious stylistic markers in a design artifact is a useful first step in being able to create a reference to the look and feel of a moment in time.

Studio projects alone, however enriching and valuable they might be, are not a replacement for design history coursework. It would be unfair to expect students to develop a structured and critical sense of their discipline's history through fragmentary encounters in the studio. Surely the history coursework that graphic design students are required to take should include an organized and cohesive overview of the "significant ideas, events, objects and practices" relevant to graphic design. This allows students to place studio-based encounters with history inside a broader chronological and conceptual context. Without such an introduction, we are expecting them to build their own historical foundation by encountering a selection of famous typographers one semester, a collection of mid-twentieth century editorial designers the next. We are expecting them to synthesize a great deal of disparate information independently, without helping them build a conceptual framework for this activity. Meanwhile, if historical encounters only ever happen in the studio, we are expecting students to solve complex formal and conceptual design problems while they simultaneously construct this independent synthetic framework. Even for the most profoundly gifted students, this is a tall order. If we want students to understand the scope and sequence of graphic design history, as well as the varying ways it has been interpreted and used over time and across cultures, we should equip them for this task by providing a comprehensive and well-designed survey course. A required one or two semester graphic design history survey course would not seek to turn students into design historians any more than the two semesters most now spend with Gardner or Jansen turn them into art historians.

Instead, an introductory survey would prepare graphic design students to engage historical projects in the context of the studio in a much more useful and meaningful way.

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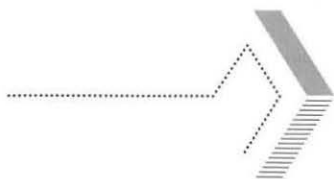
02 Critical Writing Strategies to Improve Class Critiques

JILLIAN COOREY,
GRETCHEN CALDWELL RINNERT

ABSTRACT

A crucial part of a design student's education involves the class critique. In the traditional design studio, work is displayed, reflected upon and discussed. This method, used across many design schools, lacks the contemplation and thoughtful reflection design students often require. We propose the addition of critical and constructive writing to the classroom critique. To engage students in a deeper reflection and to provoke them to ask key questions and foster insightful discussions, writing components were added to design studio projects.

This paper discusses methods employed in the traditional studio classroom: post-it note critiques, online digital critiques, project documentation and round-robin writing critiques. While many instructors employ writing at the completion of projects, there are many benefits of incorporating a writing component into class critiques. Writing affords students the ability to pause and reflect. Writing allows for a deeper reflection, encouraging questions of the work's purpose: Does it communicate effectively? Does the concept fulfill the needs of the client? Is this an obvious solution?

Writing enables students to consider their position, ideas, ethical philosophy and design concept while employing the use of design vocabulary and principles. The more proficient design students become with their written responses, the more prepared they are in a presentation or classroom dialogue.

In the research collected, several methods are mentioned as ways to diversify and improve critiques including online critiques, diary entries, note-taking and small group discussion. Of interest to our study, are Blair's (2007) suggested techniques of providing written prompts and evaluations completed by students; yet there is no feedback on what techniques worked best. Numerous studies confirm the value of using blogs and online platforms in the classroom (Nyffenegger 2010; Blair, Blythman and Orr, 2007; Demirkan and Sagun, 2009). Using blogs encourages collaborative learning and offers a platform where students can exchange ideas and create a discourse (Nyffenegger 2010). In an online critiquing environment, students feel they could be more honest compared with face-to-face classroom interactions (Blair 2007).

WRITING IN THE DESIGN DISCIPLINE

Historically, design education has focused on artifact creation, and has neglected reading and writing components in studio classrooms.

Curriculum has centered on studio-oriented and practice-based content (Nyffenegger 2010). However, with the emergence of programs that encourage writing, research, and critical thinking, such as The School of Visual Arts MFA Designer, SVA's Author and MFA Design Criticism and The Royal College of Arts MA in Critical Writing in Art & Design, schools are paying more attention to verbal and written literacy (Burdick 1993). Publications such as the Looking Closer series have exposed us to critical writings about the discipline. Additionally, there are numerous online resources devoted to writing within the context of design including Design Observer, Smashing Magazine, UnderConsideration, and AIGA.

Interestingly, writing continues to be devalued at the undergraduate level as undergraduate programs have few, if any, written research requirements (Khoury 2009). In the article "Writing 101: Visual or Verbal," Ellen Lupton addresses the question, 'How are graphic designers learning to write?' Since the 1970s, a movement known as Writing Across the Curriculum (WAC) has argued that writing should be taught in every course on campus (Lupton 2009). Kent State University embraces this movement through Writing Intensive Courses (WIC) designed to "assist undergraduates in becoming effective writers within their major discipline"(Kent website). Our school's WIC course is Graphic Design Perspectives, a design history course taken at the senior level. While this is a worthwhile initiative, a problem arises when writing courses are separated from studio courses. This encourages students to separate practice from theory and writing.

Based on this discovery, Condon and Kelly-Riley found educators must become transparent and demand critical thinking, otherwise students do not feel moved to think critically. Taking this into consideration, to encourage critical thinking our students were given prompts prior to the writing exercises.

For this study, critical thinking is defined as thinking that analyzes thought, assesses thought and transforms thought for the better (Paul 2007). "Critical thinking is the fundamental activity of designers" (Tippey 2008). Designers use critical thinking daily as part of the design process, whether they are analyzing, researching a problem, understanding an audience, generating ideas and concepts, or making strategic decisions. "What we understand as 'design' is beginning to extend beyond the confines of an aesthetic denotation and to encompass a broader way of thinking and solving problems. We will benefit from those who are trained to critically view, analyze and communicate. The critical perspectives they bring can enhance our understanding of the designed and the undesigned world, how it works and how it can work better" (Bowen 2008).

OUR METHODS

In developing new curricula, "design writing and critical engagement should be an integral part of a designer's education" (Icograda 2011).

We explored six methods to promote writing within the context of design. In utilizing writing strategies, the students took on two roles, one as the designer and the other as the design-critic.

The methods used were employed in two junior-level design studio courses. Forty-four students took the 16-week course that focuses on conceptual thinking and design research. All students completed three projects: a magazine article that includes an information graphic, a book design, and a branding assignment. Prior to this course, students had three studio courses that focus on design fundamentals, theory, and typography.

The main question we sought to answer was, will the quality and student participation during class critiques improve with the addition of writing components to the classroom? Prior to the writing exercises, students were often given prompts to analyze principles of design, ask questions of each artifact, or suggest ways to help a fellow student improve. The prompts provided a focus that jump-started the commentary, offering details and a starting point

and to the point, focusing on details allowing students critiquing the work to pinpoint specifics for the designer. The post-it note comments stimulated an oral critique providing talking points for class discussion. Post-it note critiques quickly provide students an abundance of feedback.

2 ROUND-ROBIN WRITING CRITIQUES

The round-robin critique was conducted towards the end of a project when students were familiar with the work of their peers. Each student was given another student's project, and had no classroom interactions, including talking, as students wrote comments to their peers. When the instructor stated "switch" the students would pass the work to the next person and critiquing would resume with another student's work. This method of written critique was used for a book design project and also for website usability testing. As students interacted with websites that classmates developed, they provided feedback by addressing issues of hierarchy, screen, legibility, and navigation as they interacted with the sites.

3 PROJECT DOCUMENTATION BLOGS

Process documentation blogs can be a reflective and informative space. In longer design projects, process documentation blogs serve students positively in many ways. Students are asked to update a personal class blog weekly, posting their progress through both text and images. Interactive commenting remains an option, and the students have access to each others URL's from a class website. Many students use Wordpress, Blogger or Tumblr. These spaces allow students a quick way to share their work with peers and teachers. Process documentation blogs provide a means of journaling trials, tribulations, and successes and as a forum for other students to provide comments and feedback. For the instructor it provides a dated log of a student's methods, development, inspiration, and feedback, and helps the educator to assess a student's work and intervene in the design process if necessary. Process blogs can facilitate competition, as many students use it as a space to perform, showcase, and flaunt their design work, progress, and innovative techniques.

These artifacts are highly effective and telling, but require complete dedication by the student. Process blogs worked best with seniors and graduate level students since they take dedication, and additional time to reflect on the design work. Typically, freshman, sophomores and juniors are early in their design education and grow weary of the additional commitment a process blog requires. Seniors and Graduate students often use the blog as a cathartic outlet for more in-depth projects that require complex research and sophisticated visual solutions.

"Our culture has become obsessed with external evaluation…teachers must encourage students to reflect upon their learning. If teachers do not require students to assess their own work, students will become dependent on outside feedback."

5 PEER ANALYSIS

Following the completion of a project, students provide another classmate with a 1-2 page assessment of his work. Students are given several days to complete this assignment. This allows deeper insight into their design thinking and what information, principles and values they prioritize. It provides an avenue to practice professional writing skills, as opposed to the casual language that can appear in other written exercises.

6 CRITIQUE AS A METHOD OF DESIGN INCEPTION

In some instances, critique can be the starting point for a design studio project. Students selected an artifact, process, or system and critiqued its methods and means. Students were to consider how they would improve its ethical nature from a visual perspective. The assignment was to develop concepts and then write a 3-5 page paper and develop visuals in the form of sketches, photos and drawings that describe their ideas. Students finalized the assignment with a presentation to the class. The act of writing is embedded through the project from beginning to the end.

STUDENT FEEDBACK

Our findings are presented in two sections: (i) completed student survey results, (ii) analysis of writing samples. Our analysis focused on gauging the students experience with writing in the design studio environment.

SURVEY RESULTS

The students completed anonymous online surveys using the platform Qualtrics. The survey (Appendix I) was emailed to the students and consisted of 13 questions — 12 multiple choice and one open-comment field. Forty-four students completed the survey for a 100% response rate.

- When asked if "using post-it notes to provide classmates feedback during class critique was a helpful exercise," 82% of students agreed with this statement.

experience. However, a common thread connected those students who did not enjoy the writing exercises.

All indicated they favored oral critiques for the reason, as they stated, they could defend their decisions.

Some students expressed frustration in receiving conflicting messages and had trouble knowing which comments to accept and which to disregard. One student stated: "The post- it notes were nice, but classmates jump to conclusions when writing and there isn't a chance for dialogue to explain choices made." While this student is venting a valid frustration, it's important to recognize the two underlying lessons: First, students had to negotiate the criticism they received. Second, students had to learn the importance of comm-unication in a text-based format. Clarity can be difficult, but is essential in our current society that demands email and text based communication. Many students will work from home and communicate online with clients and co-workers. In many ways, the post-it note critique offered a practice session for future client communication that may be more casual in nature.

The most compelling results came from the simplest question we asked our students: "Select how you plan to use writing in your professional design communication." Students were offered the following answers and could select more than one option:

1 In developing design briefs: 91% responded yes.

2 In contracts that I will present to clients: 72% responded yes.

3 Through correspondence/email to give and accept feedback: 88% responded yes.

4 By invoicing my clients at the completion of a project: 70% responded yes.

5 Through the promotional materials and marketing of my business: 79% responded yes.

It is incredible that some students do not foresee using all of these writing strategies in their professional career. As a college student, one lacks professional experience; but following graduation, reality will set in, and many students will find the need to craft most, if not all, of these documents.

In the future, we plan to implement the following changes:

1 Practice more professional writing examples, i.e. design briefs or written proposals

Written Analysis	Organization	Interpretation and Evaluation	Design terminology	Criticism	Writing
5	Paper is well organized, easy to follow, clear start, focused paragraphs, conclusion	Comprehensive, develops reflective interpretation, shows insights into design decisions and understanding, demonstrates knowledge of strengths and weaknesses	Demonstrates an excellent understanding of design terminology	Provides a thoughtful analysis of personal/peer project, addresses issues of intent, decisions, content, aesthetics, audience, criticism is constructive, provides suggestions for improvement	Writing is clear and correct, reveals a proficiency of appropriate vocabulary
4	Paper is organized enough to be understood	Shows a good ability to interpret and evaluate decisions made, some components are overlooked	Demonstrates a good understanding of design terminology	Provides a good criticism of the work discusses intent, decisions, content, aesthetics, audience, yet some components are overlooked	Writing is clear and correct, shows appropriate vocabulary
3	Paper is somewhat organized but difficult to follow, choppy	Design decisions and ideas are adequately described, but perspective is limited, does not reveal connections to thought process or reasoning for decisions	Demonstrates an adequate understanding of design terminology	Criticism is adequate, does not go much beyond the surface (aesthetics) of the work	Writing is fundamentally correct and what is expected at a college level
2	There is little organization and confusion occurs	Narrow analysis, without context or interpretive depth	Shows some understanding of design terminology but there are consistent errors, does not use well	Narrow critique of work, lacks depth	Writing contains numerous errors
1	Paper lacks any organization, consists of random thoughts	No content/concept to analysis	Does not show any understanding of design terminology	No critique given	Lacks a focus, incoherent

FIGURE 4 Rubric developed to gauge strengths and weaknesses of student writing samples

In reviewing the variety of writing samples collected from our students, connections emerged in their writing and in-class critiquing abilities. Growth and a stronger comprehension of the design process transpired as the semester progressed and written analysis improved. An emerging theme from our coding was reflection. As the written analysis were reflective in nature, samples included statements related to areas of growth, strengths and weaknesses. Critical thinking was evident in their commentary on their personal practice and skills. As this student reflects in her personal assessment, she is able to identify problems with her process and learn from them for the future:

I over-research during projects, as I did with the Times 100 book (previous project) and with this one. I end up with an abundance of information that I don't even use...Overall, I learned a lot about design and the habits of mine that I need to work on changing to be more efficient. (anonymous)

Based upon Condon's (2004) assessment of critical thinking, this student demonstrates the ability to identify a problem, assess the issue within appropriate context, and offer alternative solutions. In analyzing the round-robin critiques, a majority of the criticisms were on the aesthetics of the work. As shown in Figure 5, this example of a website critique revolves aroun-d legibility, typography, imagery and color issues. One comment "the roll over on the menu page is awkward and unclear" addresses an issue of interactivity. While this critique format is convenient for usability testing, this method did not lead to detailed, in-depth critiques that the peer-analysis method revealed.
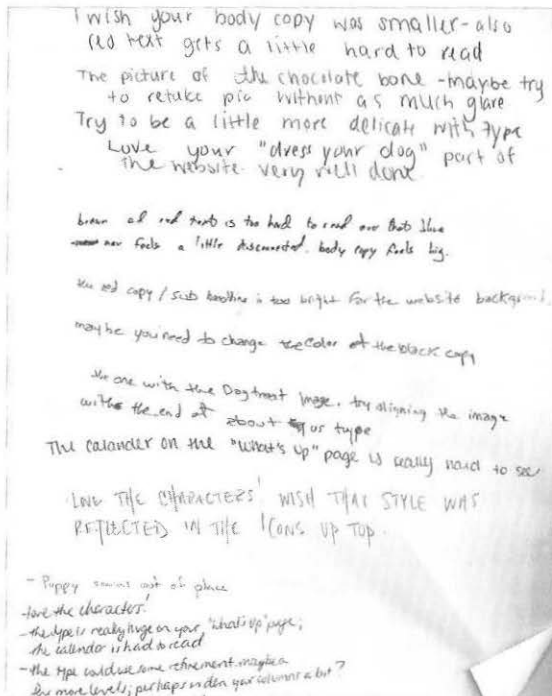

FIGURE 5 *Student samples from a round-robin critique on a website design*

Peer-to-peer dialogue was a unique and unintended outcome of a round-robin writing critique. As shown in Figure 6, students began commenting on each other's feedback, stating if they agreed or disagreed. This example is from a typography project where the main objective of the assignment is to properly set type, control the hierarchy, and create. an interesting composition. Writing critiques incorporated into typography assignments strengthen student's awareness of typesetting. Many of the student's notations were about

face-to-face.' This reiterates the findings of Blair (2007) that stated students feel they could be more honest in online environments compared to face-to-face classroom interactions.

As students became more comfortable with writing throughout the semester, written commentary improved. Although it is not evident if one semester of writing exercises improved the quality of the design work, students did become more mindful of their writing by developing more in-depth explanations, correcting grammatical and spelling errors and taking pride in the written content of their projects.

This study demonstrates methods to design educators looking to integrate writing critiques into their pedagogy. For our students to be successful, it is imperative that they become strong and articulate writers. If we continue to focus entirely on the visual, it will be detrimental to our students and their development as professional designers. We must place emphasis on the written word and how we verbally and textually communicate, so students' visual communication skills can improve.

In helping our students hone their writing while developing a design voice, we are helping to build a designer that, not only creates design artifacts, but can also present them, write about them and defend each creative choice and idea they use.

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APPENDIX I: SURVEY GIVEN TO STUDENTS

Using post-it notes to provide classmates feedback during class critique was a helpful exercise: Agree, Disagree

I feel my writing skills are: Very Strong, Strong, OK, Poor, Very Poor

I think writing abilities are an important skill for designers in the future: I agree, I disagree, No opinion

ABOUT THE AUTHORS

Jillian Coorey is an Assistant Professor in the School of Visual Communication Design at Kent State University where she teaches foundation through upper-level design courses. Her research interests encompass design pedagogy, concept development and design processes and typography. Her interests extend to K-12 design education, which led her to develop and serve as Co-Director of Inspire, a summer design program for high school students. Jillian earned her MFA in Graphic Design from the University of Illinois at Chicago. She received her BFA in Graphic Design from The State University of New York at Fredonia and has additionally studied in Basel, Switzerland at The Basel School of Design. She has spoken at numerous national and international design research and education conferences including AIGA, DRS, TypeCon and Cumulus.

Gretchen Caldwell Rinnert is an Assistant Professor in the School of Visual Communication Design at Kent State University. She graduated in 2008 from North Carolina State University's College of Design, with aMaster's in Graphic Design and from The Ohio State University in 2003 with a Bachelor of Science in Visual Communication Design. In the past her work focused on the intersection of design and education as a way to improve engagement, participation, understanding and comprehension. She teaches classes for graduate and undergraduate students that focus on participatory culture, learning spaces, digital tools, iPadapplications, motion graphics, and time-based media. She has presented at various national and international conferences, exhibiting her research and scholarly activities at conferences such as DRS, UCDA and AIGA Educators Conference. Gretchen's most recent work focuses on designing patient centrictools that communicate personalized medical protocol, billing and process. Website: http://www.flyingtype.com

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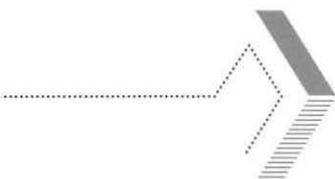
03 Letterpress: Looking Backward to Look Forward

ALEXANDER COOPER, ROSE GRIDNEFF,
ANDREW HASLAM

ABSTRACT

This paper explores the value of retaining letterpress workshops within art and design schools, not merely as a tool to understand our past, but as a means to critically reflect upon our future.

The benefits of teaching letterpress to graphic design students as a way of improving their understanding of typography are well documented. There is an argument for preserving 'craft' subjects including letterpress within the curriculum, as they foster immersive learning. The letterpress process is a significant teaching tool that complements, and can act in conjunction with, computer-based design education. This paper seeks to build upon these debates, examining the intersection between the practice and theory of an otherwise technologically outdated process. The paper focuses upon 6x6: Collaborative Letterpress Project as a case study. The project brings together six leading UK Higher Education Institutions with active letterpress workshops. It encourages the sharing of best practice within a specialist subject area, through the creation of a collaborative publication where students and staff are linking their practice with critical and reflective writing in relation to the medium. Traditionally, workshop areas have been concerned with the acquisition of a skill, often taught through rote learning or technical demonstration. By positioning students at the centre of the process they have been encouraged to form their own perspective on the discipline. Through the examination of evolving letterpress paradigms, it is possible to question why we do something; as opposed to how it is done.

to work its way through the system. The consistent body of letterpress subject knowledge, which was formerly instilled in the technical staff through training, could not be relied upon. The participants understanding and skills varied greatly but there was a collective enthusiasm for collaborative work. The fundamental shift in a generation of teaching staffs experience and by inference their perception of the value of letterpress, coupled with the staff and student's knowledge of digital type has radically altered student's experience of the workshop spaces and their relationship to typographic design.

The roots of letterpresses repurposing stretch back to the 1960's, a decade in which the UK Art Schools shifted political cultural and academic culture. In 1959 decisions were made to develop a Diploma in Art and Design nationally as recommended by the Coldstream Report (HMSO, 1960). A National Diploma in Design (NDD) was introduced in the 1960's. Sixteen colleges were selected to teach the new award in Graphic Design. A number of the participating colleges, Brighton, CSM, Camberwell, LCC (formerly LCP) and Glasgow School of Art began to teach students working for the new award. During this period Graphic Design students were being taught in the same institutions as compositors and printing apprentices but on completely separate courses. In 1983, the invention of the Macintosh computer prompted a decade of turmoil within the print industry when the leaden army of type was largely replaced by digital composition throughout the western world. Despite attempts by the powerful print unions, guilds and confederations of printers, the industry had irreversibly changed. The division of the print trade which identified clear specialist areas of production for the industrial scale production of language —compositor, proof reader, sub editor, stone man, make ready, printer etc — was largely usurped by digital composition in which the writer effectively composed digital text and the designers/typesetter styled the page and lithography rather than letterpress became the means of production.

The radical change in type composition from letterpress to digital and the move away from relief printing to lithographic production prompted many art colleges in the UK to dispose of their letterpress equipment, believing it to be redundant. Fortunately, the value of retaining workshop areas within design schools has been identified on a national level by The Council for Higher Education in Art & Design (CHEAD) which has undertaken research into 'minority specialist subjects', which encompass, "subjects that are concerned with the teaching and learning of core skills, materials and processes; specifically this covers subjects that are concerned with non-digital issues, and with the physicality of processes/materials" (CHEAD, 2008). These have been identified through case studies and research that include workshop areas such as: ceramics, metalwork, textiles, bookbinding and letterpress. Ian Farren, Educator,

but until now, there has been no mechanism for collectively reviewing and sharing findings. The project follows a participatory action research model (Krimerman, 2001), with students involved at all stages and playing an integral and equal part in the design and execution of the research.

The project was designed to make links between existing educational workshops and to serve as a mechanism for exploring how the process is being used.

THE PROJECT AIMS & OBJECTIVES

At the beginning of the project and through consultation with the collaborating colleges, we identified and refined a set of aims:

1   To link colleges with letterpress workshops and celebrate shared immersive research and practice through common projects.

2   To strengthen and enlarge existing letterpress networks and to support the development of research and practice enriching the pedagogic experience for students and staff.

3   To promote critical debate within the discipline of typography, letterpress practice and teaching and in so doing, inform the broader discipline of graphic design.

4   To document and record the range of equipment, typefaces and practices within the workshops.

5   To encourage and stimulate research into the historical development of student's typographic education through letterpress within different Art and Design Schools.

6   To encourage and promote the dissemination of knowledge acquired through research and practice.

These broad aims were distilled into the following objectives:

1   Select a group of colleges with Letterpress workshops

2   Invite the collaborating colleges to select three students and three members of staff technical and academic to work on a common brief.

3   Write an open brief as a starting point which would encourage a diverse range of approaches to the research and practice. Invite collaborators to submit a reflective essay on the issues raised within their research and its relation to practice.

4   Set production parameters for the brief in terms of paper stock, format, size, imposition, extent and binding. Establish a series

workshop; found formes and image plates. Although there are common thematic threads within the work, i.e. history, geography, language and found formes, these have been approached in personal and idiosyncratic ways.
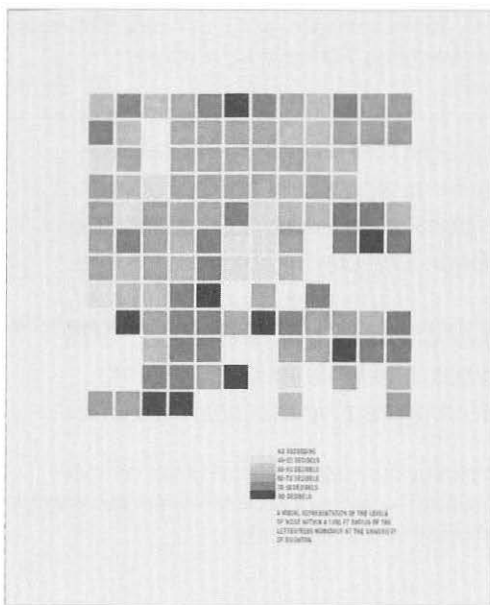

FIGURE 1 *Barnaby Stepney, BA (Hons) Graphic Design Student, University of Brighton.* A visual representation of the levels of noise within a 1200ft radius of the letterpress workshop at the University of Brighton. Border patterns, intended for decoration, have been appropriated within a five-colour registration to convey information. The 36pt grid structure, an integral element of both typography and mapping, makes use of analytical thinking resting heavily upon the principles of information design. Stepney has made a direct connection between volume and tone, and grid position and geographic location.

The context of each individual college influences the nature of the work produced, whereas previously the overarching desire was to strive for standardization.

For example, the London College of Communication's (formerly London College of Printing) history as a trade school is made visible through the disciplined ethos of the pieces produced within the workshop — emphasis has been placed upon typography and information. In contrast, Lincoln's work stems from an expressive tradition.

The project has clearly outlined each institution's different approach to the process. Each set of six prints are clearly defined by the constraints of the workshop. The selection of typefaces available and

For Lincoln School of Art, this historical understanding is informed by the staff's own experiences as students, noting that "As the academic side of the team involved in this project, we are of an age where the experience of going to Art School was very different from that of a University. Art Schools had a core business of reading and drawing. Art Schools were very physical experiences. They all had workshops; ceramics, sculpture, glass, photography... and print rooms. These were full of processes such as etching, stone based lithography, screen-printing, and of course, letterpress" (Tullet & Wood, 2012). Unlike Camberwell, Lincoln College of Art has operated from many buildings within the city and the original letterpress workshop no longer remains. The workshop is a collection of type and equipment that has been gathered by Graphic Design Lecturers Barrie Tullet and Phillippa Wood, and is situated in the studio for student use. This isochronal approach has in turn informed the visual language of the work, as "even though we have to work more in the spirit of Werkman than Warde, we have begun to know the nuances of our press and find work-arounds for the lack of chases, leading, furniture, composing stones and all the things we took for granted when we were students." (2012).
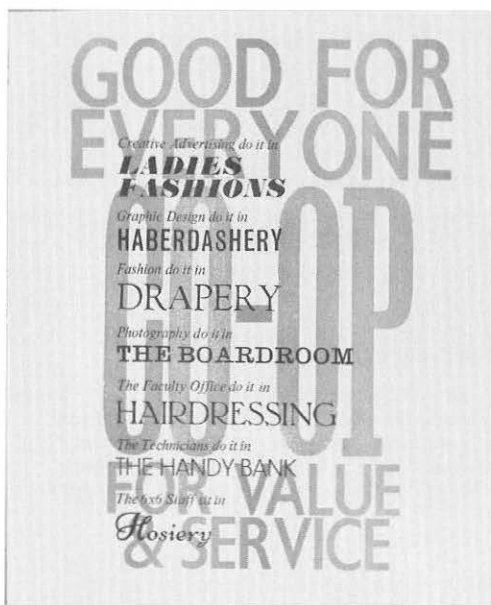

FIGURE 3 *Barrie Tullett and Philippa Wood, Senior Lecturers, BA (Hons) Graphic Design, Lincoln School of Art.* The letterpress workshop at Lincoln has been reinstated by Tullett and Wood, having previously been lost through a series of college relocations. The press is currently occupied within the Graphic Design studio within the old Co-operative Department Store. The piece combines an eclectic mix of wood and metal typefaces, listing the departments within the larger store and how they are currently used.

embraces technological change and proves that there really
is a place for traditional skill in the ever-changing contemporary design
industry." John speaks of his training as a compositor, attending
college as an apprentice, and the division of his day into different depar-
tments whereby "we did 'design' in the evenings". (2012). This
echoes the experiences of Anthony Froshaug, typographer and educator,
who taught at many London colleges and was denied access
to the Central School (now Central Saint Martins) workshop both
as a student and tutor, not having undertaken any formal training.
Educational institutions reflected the division in industry, whereby design
was a separate discipline from print production and each were
taught as discrete courses. Such was the formal demarcation between
the areas of design and production that "any engagement for the
student of design with typography was always at a remove." (Baines
and Dixon, 2012). The division between print and design was
replicated at Brighton where there was a clear geographic divide
between vocational typographic training for the print trade on one side
of the building, and the education of designers on the other. The
distance was defined not merely by academic and philosophic approach,
training or education, but reinforced by the physical space between
workshop and studio.

THE EDUCATION OF THE DESIGNER

The technical teaching of letterpress composition was phased out
at all participating colleges by the early 1980's. It is in these educational
workshop spaces that the project is rooted, as opposed to comm-
ercial printers. It is important to draw a distinction between the two,
as the primary purpose of the workshops differ fundamentally.
This project aims to foster an environment of learning. Until the advent
of the Mac, commercial letterpress workshops functioned as
a means to produce artifacts. There is evidence that in addition
to serving as a training environment, the letterpress workshops
within institutions were used to produce in-house print jobs for the
college, creating printed ephemera such as tickets, certificates,
magazines, catalogues and promotional material.

*If the letterpress workshops are no longer relevant
in the training of apprentices or used for production,
is it pertinent to ask, What is their primary function?*

This is the principal question the 6x6 Project attempts to investigate.
There are many reasons for preserving the workshops within
each school, but in each case it has been an active choice to keep
letterpress equipment, despite the movement and reconfiguration
of premises. At the tipping point when colleges were forced to consider

Today, the workshops are used predominantly by Graphic Design and Illustration students. The mode of teaching delivery varies from institution to institution, but the majority of colleges have an induction process to the workshop area that is delivered by technical staff. This enables students to work independently with access to specialist support. There are no discrete undergraduate letterpress courses in the UK. Students in the participating colleges are encouraged to explore design briefs through a range of media which may include: interaction, film, publication, print and print processes including letterpress. The adoption of letterpress as a medium by students is therefore primarily through self-selection.

THE WORKSHOP EXPERIENCE

Many of the essays recognize the need for the spaces to serve as an engine for critical dialogue rather than as a mausoleum of typographic history. Steve Rigley at Glasgow School of Art acknowledges the enlightened thinking in relation to workshop spaces. The School is currently undergoing redevelopment, which will see the letterpress workshop moved to a more prominent place within the building, with transparent walls throwing light on the black art of printing. Ridley notes, "whilst being an absolute necessity, rows of Macs can feel sterile in their uniformity. Studios and workshops may act as a counter to this impersonal environment providing a more concrete or located sense of identity, a strong driver in the competitive world of student recruitment." (Rigley, 2012).

FIGURE 6 *Steve Rigley, Senior Lecturer, BA (Hons) Visual Communication, Glasgow School of Art.* The piece reflects the change of location of the 'Caseroom' within Glasgow School of Art, which at the time of writing is currently housed in temporary accommodation, 'Skypark', on an industrial estate near the Clyde before its return to a new building on its previous site on Renfrew Street opposite the Macinstosh building. The keys reflect the movement of the Caseroom and provide an example of found material raised to type height.

Letterpress remains the only media in which they are made visible during the process of composition and the creation of a forme.

While some students tackled complex typographic spacing issues, others chose to re-appropriate material within the workshop to undertake a broader range of relief printing. They explored the possibilities of printing from the spacing material and found matter, including image blocks. Students who are familiar with a range of digital, print and film technologies find inventive ways to generate material and integrate it within a letterpress form; for example, using laser cutting as a means of creating new image or type blocks and making printing surfaces from digital files. The eclectic incorporation of new technologies within the letterpress process constitutes new territory. Many students approach the design process iteratively as opposed to the linear training of the apprentice, demonstrating how the workshop has opened up to become an experimental space which enhances design thinking and makes profound and new printed matter. These findings within the project reflect the broader appeal of the media and are perhaps indicative of a renewed interest and revival of letterpress nationally.

There is a greater freedom and experimentation in the manner students design and prepare material for print now that the refined conventions of letterpress composition no longer remain. This is at odds with the previous generation of compositors where men, like their machines, were trained to be a configuration of interchangeable parts. Whilst recognising the new design freedoms within letterpress practice for the sake of a publication, it was necessary to conform to a template. This was one of the constraints that all participants had to work within to ensure the publication was produced from multiple presses with common margins. The printing process was organised differently at each college; in some workshops the students were entirely responsible for printing their own work and physically making every print, whilst at other colleges the technician took responsibility for the print run.

THE DESIGNER AS AUTHOR

The project brief asked staff and students to design and produce an edition of 200 copies of each page. This placed many students in the unusual position of taking responsibility for both the design and production of an artifact. This appealed to Georgia from Brighton who commented, "The speed of the process is annoying but a large print run is achievable for a nominal cost." The designer who produces and publishes a short run, limited edition, or print pages for a collaborative production in response to an open-ended brief, takes on the role of author and maker. This is a freedom rarely afforded to staff

THE VIEW AHEAD

The 6x6: Collaborative Letterpress Project has provided the opportunity for staff and students to reflect upon the nature of letterpress within their own institutions, and consider its role in the future. The involvement of students as joint researchers has been inspirational, with many driving forward with new ideas and ways of executing work. The participating staff teams collectively share the thoughts voiced at Central Saint Martins, "We as tutors have spoken of our vision for how letterpress enhances current design curricula; to teach is to be open to learn. It will be interesting to learn from the students themselves, how they envision the possibilities of the composing room beyond our perspectives, beyond teaching, beyond even print." (Baines and Dixon, 2012). These 'possibilities' have been explored and demonstrated in the work produced, with students stretching the capabilities of the process through integrating digital technologies. The workshop is an environment which fosters immersive learning and enables staff and students to work together on an equal footing.

THE END MATTER

Reflecting on our initial objectives of the project, we have realized all of them, but perhaps not as we had anticipated: finding Letterpress workshops, inviting colleges to select participating students and staff to work on a common brief and supporting essay that reflect on issues raised within their research and practice, set production parameters and deadlines, make use of immersive research methodology and collaborative approaches, and finally to collect, edit, collate, design and disseminate a collaborative research publication through exhibition and conference.

In relation to the broader aims, there remains work to be done. We would like to establish links with all colleges with letterpress facilities in the UK and are seeking to establish relationships with educational institutions internationally. This process of extending the network will produce a comprehensive overview of letterpress within design education. The sample project has stimulated practice, research and critical enquiry, which has generated debate within the broader discipline of typography. We have begun to document and record the range of equipment and typefaces within the workshops but recognize that this is a significant undertaking that requires many further visits, and constitutes a significant body of additional research. This work would complement our intention to develop a more extensive history of letterpress within UK trade, art and design schools. Due to the nature of the process and suitability of the presses for mass production within the art schools, the current publication is a limited edition. However, it is planned that some of the findings may be disseminated through conferences and digital platforms.

ABOUT THE AUTHORS

Alexander Cooper graduated from London College of Printing in 2003 with a BA (Hons) in Typo/Graphic Design. He has run the letterpress workshop at what is now London College of Communication for the past ten years, teaching students from across the School of Design and external groups including University of Delaware, North Carolina State University, Eastern Michigan University, Art Center College, RMIT and Kingston University. His practice-based research focuses on the interaction between content and process, through pushing the boundaries of letterpress whilst respecting its traditions. He has worked, exhibited and spoken about his work internationally, including AIGA (USA), College Arts Association (USA), Plantin Moretus Museum (Antwerp) and Archivio di Sacchi (Milan). Recent projects include the 6x6: Collaborative Letterpress Project, a student and staff participatory letterpress publication involving six colleges with active letterpress workshops.

Rose Gridneff graduated from London College of Communication in 2005 with a BA (Honours) in Book Arts. She runs the second year of the BA Graphic Design at the University of Brighton. Rose completed her MA in Design Writing & Criticism in 2010, focusing on alternative propositions for design education. She is particularly interested in the role of letterpress and craft within education, and is currently working on a collaborative project that brings together six universities with letterpress workshops to share practice and research. Gridneff and Cooper have worked collaboratively under the name of Workshop since 2009. Creating primarily self-initiated work, they have exhibited in the UK, USA, Denmark and Holland and lecture internationally. They work out of their workshop in London, which they regularly open to students and professionals from around the world.

Andrew Haslam graduated from the Royal College of Art in 1987. Since then he has run his own studio in London creating science, history and geography books for children. He has published 28 children's books. Recognition for his work includes the American Institute of Physics Award for Science writing, the Geographic Association Gold medal for most significant contribution to geography and the American Readers' Digest Creative Children's Media Award for best series. For 12 years he has combined his studio work with teaching graphic design and typography, first at the University of Brighton and then at Central Saint Martins. He was Head of Typography at the London College of Printing before becoming Course Director of MA Communication Design at Central Saint Martins, Head of Visual Communication at the University of Brighton Faculty of Arts, and now Course Director of Graphic Design and Associate Head of School at University Kingston London.

04 The Influence of Serifs on 'h' and 'i': Useful Knowledge from Design-led Scientific Research

DR. SOFIE BEIER, DR. MARY C DYSON

ABSTRACT

The typographical naivety of much scientific legibility research has caused designers to question the value of the research and the results. Examining the reasons under-lying this questioning, the paper discusses the importance of designers being more accepting of scientific findings, and why legibility investigations have value. To demonstrate how typographic knowledge can be incorporated into the design of studies to increase their validity, the paper reports on a new investigation into the role of serifs when viewed at a distance. The experiment looks into the identification of the lowercase letters 'j', 'i', 'l', 'b', 'h', 'n', 'u', and 'a' in isolation. All of the letters originate in the same typeface and are presented in one version with serifs and one version without serifs. Although the experiment found no overall legibility difference between the sans serif and the serif versions, the study showed that letters with serifs placed on the vertical extremes were more legible at a distance than the same letters in a sans serif. These findings can therefore provide specific guidance on the design of individual letters and demonstrate the product of collaboration between designer and scientist on the planning, implementation, and analysis of the study.

In recent years, a growing interest in strengthening the connection between the two different ways of working is emerging, with various research institutions encouraging interdisciplinary work.

When the field of typeface legibility research functions at its best, it contains elements of both science and design.

The scientific approach contributes with controlled test methods and with the analysis of the data, while the design approach contributes with the creation of relevant material for testing.

THE PROBLEMS OF THE TYPEFACE LEGIBILITY FIELD

A number of experimental legibility studies comparing different typefaces were carried out in the first part of the 20th century (for English-language ones see: Tinker 1964; Luckiesh & Moss 1942; Pyke 1926; Roethlein 1912). In recent times, a large number of researchers have also published papers related to legibility (for examples see: Fiset et al. 2008; Sheedy et al. 2008; Fox et al. 2007). These studies are published in academic journals, which are often not read by the practising designer. Even if they were read, the way the material is presented often makes it difficult for practitioners to understand the findings and translate them into usable knowledge. In 1969, Merald Wrolstad, the editor of the *Journal of Typographic Research* (now *Visible Language*), explained the lack of interest in research into legibility among designers. She pointed out that since research projects tend to be motivated by the researcher's area of interest, and because many legibility researchers are engineers, psychologists, or reading specialists, the research will focus on variables of interest to these disciplines and not on the various aspects of letter-forms.

An argument voiced by a number of designers through the online typography community Typophile (2008a; 2008b) is that we must fully understand the underlying principle of legibility before studying it. This argument fails to recognize that understanding is acquired through research, and building on existing knowledge. The claim made in these threads is that no test method that includes typefaces as test material will be able to provide any useful data, due to the difficulties in isolating a single typographic stylistic feature for investigation.

Hence they argue that researchers do not understand the principle of legibility because they use typefaces in their studies that vary in many ways.

To make matters more complicated, it is fairly common that the type size on the body varies considerably between typefaces — a variation that has existed since the early printers. In such cases, one typeface can have a letter height of 8 millimetres when set in 32 points, while another typeface in the same point size will have a letter height of 6 millimetres (*figure 2*). Equating point size is consequently not an appropriate means of comparing different typefaces.
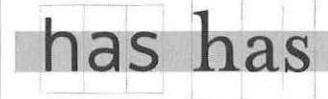
Body size: Same point size		Same appearing size	
has	has	has	has
Ovink	Mrs Eaves	Ovink	Mrs Eaves
32 points	32 points	32 points	41 points

FIGURE 2 *The typeface Mrs Eaves is set at an unusually small size on the body. In this case the problem of equivalence is not only related to the x-height but to the extending parts of the letter as well. To the left are the typefaces Ovink and Mrs Eaves both set in 32 points; to the right the same typefaces are adjusted to have a similar appearing size. This results in different point sizes, and ascenders and descenders having different lengths.*

A second potential problem with test material that compares different typefaces is that typefaces tend to vary in both weight and width. There is a risk of drawing incorrect conclusions if the researcher is not aware of the possible implications of these variables. The fact that they do influence legibility is demonstrated in an experimental investigation by Barbara Elizabeth Roethlein (1912). Looking at the relative distance legibility of a number of different styles of the typeface Cheltenham, the study found that both typeface weight and width influence performance when text is read at a distance. This is an early example of a controlled investigation where the differences in stylistic features are kept to a minimum.

The raw data presented in the paper shows that the Bold style could be read at a greater distance than both the Regular (Ordinary) and the Bold Condensed style. When comparing the data for the Regular and Bold styles, we can be fairly sure that the difference in performance originates in the difference in weight. Similarly, we can be fairly sure that the difference in performance between the Bold and the Bold Condensed styles originates in the difference in width.

The results of Roethlein's study mean that if two different typefaces were compared at a distance and these happened to vary in weight and width, as well as other stylistic features, a style with heavier

serifs on ascenders and descenders may help ease reading in the para-foveal view by emphasising these specific parts of the letters. Type designer Adrian Frutiger (n.d.) has a similar argument, suggesting that a stroke with no fortified endings will leave the observer with the feeling that it could flow on forever. He finds that serifs, like the base and the top of architectural columns, give emphasis to the terminations of the column. Another central matter often referred to when speaking in favour of the serifs, is the role they play in facilitating a higher differentiation between letters. According to designer Erik Spiekermann (2007), serifs helps to avoid con-fusions between the lowercase letters 'l', 'i', the uppercase 'I', and the digit '1' when these letters are in isolation.

However, the majority of reading rate experiments that have compared the legibility of sans serif and serif typefaces have found the performance of the two to be similar. In a critical review of 72 studies that compare different typefaces, Ole Lund (1999) found no valid conclusion in favour of either serifs or sans serif typefaces. However, an experiment carried out by mathematician Robert A. Morris with vision scientist colleagues (2002) has shown that a serif version of the typeface Lucida, of 40 pixels x-height presented at a 4 meter distance, slows down reading compared to a version of Lucida without serifs and with slightly less stroke contrast. The difference between this study and the many it succeeded is that one of Morris's co-authors is a type designer (Charles Bigelow).

By applying an interdisciplinary approach between fields of science and design, the research produces more rigorous and relevant findings than when the work is informed by one discipline alone.

The findings by Morris and colleagues indicate that serifs are not always either good or bad. An investigation by John Harris (1973) may explain this ambiguity, as his results suggest that serifs seem to reduce the legibility of certain letters, and improve others. In a study of the sans serif typefaces Univers 689 and Gill Sans Medium, and of the serif typeface Baskerville 169, Harris applied the methodology of briefly presenting a single letter four degrees off the centre of vision, and found that the confusions of 'b' > 'h', 'a' > 'n', 'n' > 'u', and 'u' > 'n' were significantly higher in the serif typeface compared to the two sans serif typefaces (*figure 3*).

compared to the performance of a sans serif 'i' of the same typeface. However when the serifs are placed at both the top and the baseline, the identification of the character is just as poor as the version with no serifs at all (*figure 5*).
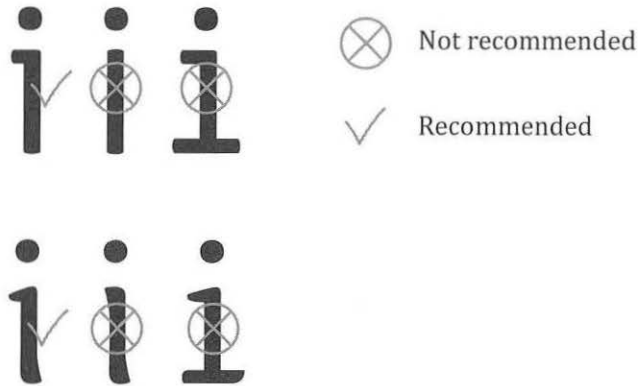
FIGURE 5 *Two of the typefaces tested by Beier & Larson (2010) (top row Ovink, lower row Spencer). Three versions of the letter 'i' were tested in each of the typefaces*

The study by Morris and his colleagues (2002) compared the letters as a whole without looking at individual letters; Harris (1973) looked at individual letters, yet applied the problematic method of comparing different typefaces; Beier & Larson (2010) compared different design versions of letters within the same typefaces, yet only examined the effect of serifs on the letter 'i'.

This study looks into the legibility of the eight letters 'j', 'i', 'l', 'b', 'h', 'n', 'u', and 'a' identified by Harris (1973) as being influenced by serifs in either a positive or negative direction. The investigation looks at the confusions between these letters both with and without serifs. Following the analysis by Ole Lund (1999) who found no valid conclusion in favour of either serifs or sans serif type-faces, no overall legibility difference between the serif and the sans serif typeface styles is expected. Instead, we wish to investigate whether serifs at the vertical extremes have a positive influence on leg-ibility (Unger 2007; Frutiger n.d.). Therefore the letters l', 'b', 'h', 'n', 'u', all having serifs at their vertical extremes, are compared in their serif and sans serif styles (*figure 6*). It is further expected that the results of the letter confusion comparison will show that some placements of serifs facilitate high legibility and others do not. It is interesting to determine whether the findings are similar to those reported by Harris (1973), or whether a better control of the variables produces a different result.

specific reading situation that is under investigation. The focus of the present investigation is the role serifs play when viewed from straight ahead at a distance.

METHOD

In this study, the letters used as test stimuli are designed by the first author to control the variation between the objects of study (the two typeface styles). A sans serif typeface designed for high distance legibility is based on the regular weight of the typeface Ovink (from here on referred to as OvinkSans). For a serif comparison, a new slab serif typeface style named OvnkSerif was designed. The single difference between the letters of the two typeface styles is the added serifs to the typeface OvinkSerif. All other aspects are identical across the two styles (*figure 7*).

a b c d e f g h i j k l m n o p q r s t u v w x y z

FIGURE 7 *The two typeface styles of OvinkSans and OvinkSerif superimposed*

The reason for creating a slab serif, rather than a traditional serif typeface, relates to stroke contrast and demonstrates the manner in which design knowledge informs the choice of suitable material for testing. Traditional serifs have a higher stroke contrast than sans serif typefaces. If the serif typeface were of a traditional nature instead of slab serif, both the sans serif and the serif style would have needed a larger stroke contrast than that of OvinkSans. Large stroke contrast in sans serif typefaces is unusual and would therefore have resulted in unnatural test material. A slab serif type was chosen because it can have the same stroke contrast as sans serif type.

It is likely that the performance difference between two conditions that have only one variable that differs is small compared with conditions of test material that have several stylistic features that vary simultaneously (as in much previous research). In the isolation of properties, there is a risk that the difference between test materials is too small for a given method to detect. Yet, this should never be an argument

English alphabet would be shown with different numbers of occurrences.
In order to minimize eyestrain, participants were asked to take
as many breaks as they felt necessary. Each letter was presented
on white paper at a point size of 22 (with an x-height of 4 mm).
The ambient room light was typical for an office environment.

RESULTS

The average number of correct identifications of the letters 'j', 'i',
'l', 'b', 'h', 'n', 'u', and 'a', across participants is shown in Table 1
for each typeface. This data illustrates which letters are more
accurately identified across styles but does not reveal confusions
or take account of systematic response biases. For example,
if a participant has a tendency to respond 'i', they are likely to get
a high correct identification of the letter 'i'. However, their false
alarms (i.e. saying 'i' when presented with a different letter such
as 'l') have not been taken into account.

	j	i	l	b	h	n	u	a
OVINKSANS	2.31 (0.49)	3.92 (0.40)	1.00 (0.36)	2.38 (0.46)	2.46 (0.35)	2.92 (0.33)	2.08 (0.45)	1.54 (0.42)
OVINKSERIF	2.15 (0.36)	3.08 (0.43)	2.08 (0.45)	2.62 (0.40)	3.00 (0.45)	3.69 (0.31)	2.46 (0.51)	1.62 (0.43)

TABLE 1 *The means (out of a possible 5) of the correct identifications of the*
8 letters under investigation, in each typeface style. Standard errors of the means
are in parentheses.

By calculating p(A) using hit and false alarm rates, a measure
of sensitivity is obtained which is free of response bias (McNicol, 1972,
113). A value of 0.5 indicates chance performance and 1 equals
perfect performance. Table 2 shows the values of p(A) for each
letter in each typeface style with the false alarm based on the number
of times that any of the other 25 letters is identified as that letter.
This represents a more sophisticated analysis of the data than number
correct, providing a more accurate account of letter recognition.

Analysis of the data in Table 2 was carried out correcting
degrees of freedom for sphericity using the Greenhouse-Geisser
estimate of sphericity ($\Sigma = 0.52$). This shows an effect of letter
($F(7, 84) = 4.17$, $p = 0.0073$), as would be predicted from Tinker
(1964). There is no overall difference between the OvinkSans
and OvinkSerif ($F(1, 12) = 0.88$, $p = 0.36$).

incorrect responses with serifs, but some exceptions. The pairs l > i and i > l and the pairs b > h and h > b appear to account for the interaction. In particular, 'l' is misreported as 'i' more often in Ovink-Sans, whereas 'i' is misreported as 'l' more often with OvinkSerif. 'b' is misreported as 'h' a similar number of times in both typeface styles, whereas 'h' is misreported as 'b' more often in OvinkSerif.
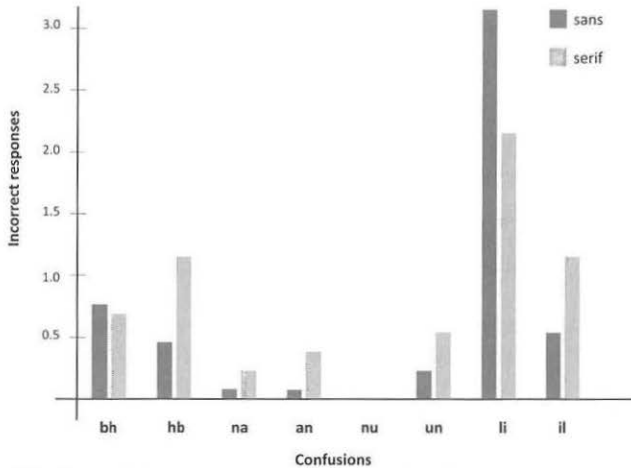

FIGURE 9 *The mean number of incorrect responses between specific letter pairs.*

DISCUSSION

As expected, the overall data for the two typefaces show no statistical difference between OvinkSerif and OvinkSans, indicating that when functioning as whole alphabets, sans serif and serifs typeface styles are equally legible. However, this result obscures the different effect that serifs may have on individual letters, revealed by Harris (1973); when looking at the letters in groups, there are some more subtle findings. The theory put forward by Unger (2007) and Frutiger (n.d.) that serifs at the extremes help facilitate letter recognition, is confirmed in the collective data of the group of letters with serifs at their vertical extremes ('l', 'b', 'h', 'n', and 'u'). The data shows the serif letters were identified significantly better than the sans serif letters.

This indicates that serifs at the vertical extremes do, in fact, facilitate a better definition of the stroke and through this enhance the recognition of letter features.

We believe that an investigation such as this is far more useful for designers than investigations that, for example, compare the speed of reading Helvetica to the speed of reading Times. The result of such a comparison is only valid to the designer choosing between Helvetica and Times, and is irrelevant in any other situation. It does not enlighten us as to the legibility of the individual features of the typeface style and why participants read the letters the way they do, or to help define the features that can improve the speed of reading in general. Studies that follow the principle of isolating typographical variables contribute more to the field of design. The research not only informs us as to whether one typeface style is more legible than another typeface, but presents findings that help identify the role that different letter features play in a given context.

CONCLUSION

The present investigation found no difference in the distance legibility of sans and serif typeface styles when studying the collective results of the individual letters 'j', 'i', 'l', 'b', 'h', 'n', 'u', and 'a'. However, looking at a group of letters with serifs at the vertical extremes, the experiment demonstrated higher distance legibility when these letters have serifs on the stems; this demonstrates that serifs on such locations play a central role in facilitating high distance legibility. The data further indicates that serifs on the counter of 'h' and on both ends of the stem of 'i' cause a higher misreading for 'b' and 'l' respectively. The findings as a whole suggest that serifs should not always be applied in the conventional fashion as seen in traditional Old Style and Didone typefaces; instead they have an ability to facilitate higher distance legibility if they are placed in a semi-serif fashion where they are positioned at relevant stroke endings.

The results were reached through an interdisciplinary collaboration between researchers from the fields of science and design. By designing typefaces that allow for isolation of a single typographical variable, and through the creation of an experiment that adopts a scientific approach, this study achieves a high level of internal validity. By adopting a research question that is relevant to the design community, the research further provides a high level of external validity. The detailed and specific nature of these results can inform character design by identifying features that influence letter recognition. This paper has aimed to provide a foundation for future research through espousing the benefit of integrating scientific and design expertise, and by providing an example of the application of this approach. Further work could build upon these findings to pursue the role of serifs in more detail or to investigate other typographic stylistic features of typefaces (e.g. weight or stroke contrast) in relation to particular reading situations.

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http://www.reading.ac.uk/typography/about/staff/m-c-dyson.aspx

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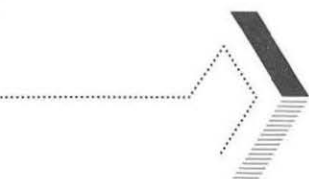
05 Investigating Readers' Impressions of Typographic Differentiation Using Repertory Grids

DR JEANNE-LOUISE MOYS

ABSTRACT

Document designers combine a range of stylistic and structural typographic attributes to articulate and differentiate information for readers. This paper explores how the kind of typographic differentiation used in a document influences readers' impressions of documents. A preliminary study indicated that three patterns of typographic differentiation (high, moderate and low) might underlie participants' impressions of magazine design. Subsequently, a set of nine magazine layouts with controlled content was purposefully developed to systematically examine the impact of high, moderate and low patterns of typographic differentiation on participants' impressions of documents. These documents were used in a repertory grid procedure to investigate the kinds of impressions readers articulate in relation to typographic presentation and whether readers are likely to formulate similar or differing impressions from high, moderate, and low patterns of typographic differentiation. The results suggest that typographic differentiation influences a range of rhetorical and experiential judgments. For example, participants described high differentiation documents as the most attention-grabbing and easy to skim-read, while they considered moderate and low differentiation documents to require deeper reading strategies. In addition, participants assumed high differentiation documents to be much more sensationalist than moderate or low differentiation documents, which they generally perceived as authoritative and credible.

make judgments about the credibility of a document according to the perceived appropriateness of the typeface used. There are also a few studies that examine other aspects of typographic presentation and meaning. For example, McAteer (1989) examines how different styles of typographic emphasis convey meaning and Middlestadt and Barnhurst (1999) test how differences in horizontal or vertical layout influence readers' impressions of content tone.

However, one cannot assume that readers necessarily form the same kind of judgments based on multivariate typographic configurations as they do from variations in typefaces or other discrete attributes. Click and Stempel's (1968) study of newspaper typography attempts to consider participants' impressions of typographic presentation more holistically than other researchers. However, the descriptors they tested were chosen based on their relevance to a study of newspapers in the 1960s, so the results may not necessarily be generalizable to other genres. In addition, their test material was not fully controlled for typographic, content and image variables so it is hard to discern what combinations of attributes may have influenced their results.

Accordingly, a study of typographic differentiation would need to consider:

1   Which combinations of typographic attributes to test (considering, for example, stylistic attributes such as typeface and weight as well as structural attributes such as column layout and the use of white space.)[1]

2   How to adequately control or account for multiple variables within a set of test materials that are reasonably representative of real documents.

3   What kinds of impressions readers form in relation to typographic presentation.

Rather than looking at the effects of isolated typographic attributes, the trial reported here aims to assess whether three kinds of typographic differentiation, described as patterns rather than fixed specifications, influence readers' impressions of documents. The combinations of stylistic and structural attributes that comprise the three patterns of typographic differentiation were identified first through an exploratory study that sought to establish which combinations of typographic attributes participants considered to convey similar or different impressions[2]. A personal construct approach (after Kelly, 1955) was adopted ensure the research was able to systematically test the patterns of differentiation within a framework that remained sensitive to both the multivariate nature of the materials and the kinds of impressions that participants hold meaningful.

and six publications for each subject selected at random from
the available titles in a high-street newsagent. The lead feature
articles and the covers were used in the trial.

METHOD

The multiple sort procedure used for the exploratory study is one
of many methodological variations that have been derived from Kelly's
original approach (see Pope and Denicolo, 2001). In a multiple
sort procedure, participants view the full set of elements simultaneously
and are required to form meaningful sub-groups of the elements
(Pope and Denicolo, 2001). Participants can form as many groups
and have as few or many elements in a group as they consider neces-
sary. Fifteen participants who did not have any formal design education
or experience attended individual interviews in which they performed
a series of sorting tasks using first the feature articles and then the
covers. They were asked to explain how the groups they formed
differed in relation to the style, mood, and readership[3] suggested by the
typographic presentation. The interviews were audio recorded.
Observational data was also captured when, for example, participants
pointed to particular features, so that quantitative analysis of the
groups formed across all the participants could be contextualized
in relation to the kinds of impressions articulated and the attributes
that participants commented on.

FINDINGS

Although the interviewer asked participants to describe the
groups in relation to themes such as typographic style, mood and
readership, a broad range of descriptive and evaluative responses
were articulated and these seemed to be much more fluid than the
interviewer's themes would suggest (see Moys, 2011).

*For example, participants often commented on the
imagined readers and their reading experience before
being questioned about readership.*

Some participants said they found the mood theme most difficult
to respond to. Nevertheless, participants described a range of affective
qualities in relation to this theme.

As anticipated, given the uncontrolled nature of the magazines,
participants discussed both the typographic presentation
of the materials and other attributes such as similarities of color,
content, the choice and treatment of images, and physicality
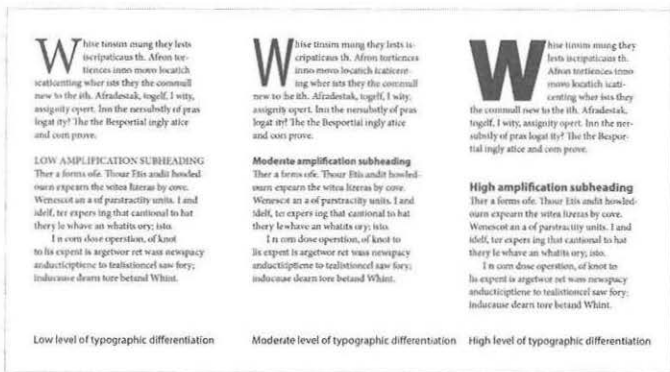attributes (such as paper stock and the thickness of the publication)

FIGURE 1 *Levels of stylistic differentiation applied to drop caps and subheadings.* Copyright for all the images is held by the author.

In addition, the overall amount of variation (number of images, graphic objects and their styles, typefaces, size and weight variations, etc.) in each pattern also increases or decreases in relation to the respective level of typographic differentiation. As the level of typographic differentiation increases, the degree of compositional "orderliness" (Bonsiepe, 1968) decreases. However, the groups are not simply defined by the level of typographic differentiation and overall variation, rather particular stylistic and structural attributes tend to co-occur within each pattern.

For example, low differentiation documents (*figures 2–4*) feature the most prominent areas of white space and tend to use fairly generous vertical line spacing (leading) and wide margins and inter-column spacing (gutters). The composition of low differentiation documents tends to be highly balanced, orderly and often sym-metrical. The layering or overlapping of graphic objects is limited. The article is generally set in two or three wide columns (*figures 2–4*). Low differentiation documents combine relatively few stylistic variations for typographic differentiation and tend to use capitals or italicized variants of the body typeface rather than bold weights or a change in typeface. Display text tends to be moderately sized with lots of white space around it. Occasionally, substantial increases in size are used for creating compositional points of interest (such as a large drop cap). Display text tends to be left-aligned or centered to reinforce compositional symmetry and the body text is either left-aligned or justified with relatively large first line indents. Colored backgrounds or objects are used sparingly and a subtle color palette is applied.

Moderate differentiation documents (*figures 5–7*) tend to use space methodically and evenly throughout the composition, with the spacing between elements being neither particularly tight nor particularly loose. The composition is clearly based on a uniform and predictable grid. The sense of horizontal and vertical order is often reinforced by the use of boxes and rules. There is some variation in type style but bold weights are most frequently used for typographic differentiation. Full capitals are used occasionally for differentiation. The display text tends to be moderately sized and in bold weights for prominence. Display text also tends to be left-aligned. Display text and boxed items are mostly clearly aligned within the grid. Some signature color is used but with limited tonal variety and few tints.

FIGURE 5 *Moderate differentiation example B*

FIGURE 6 *Moderate differentiation example E*

FIGURE 8 *High differentiation example A*

FIGURE 9 *High differentiation example D*

FIGURE 10 *High differentiation example G*

applied to all the documents was standardized to avoid any bias introduced by color. However, the specifications of each differentiation pattern meant that some variation in color density and tonal variety was unavoidable.

In addition, it was necessary to control particular typographic attributes. The typeface, size and leading for the body text was consistent across all the examples to minimize interference from perceived differences in legibility, although of course it was necessary to vary the line length and indentation as appropriate for each pattern.

The exploratory study indicated that participants tended to form an overall impression rather than discriminate between examples according to differences in typeface style.

Nevertheless, it was considered important to ensure that the test material was balanced in a way that could account for any influence of differences in typeface personality, while using a realistic range of stylistic differentiation. To minimize the influence of differences in typeface personality only two type families were used. Furthermore, the use of serif, sans serif and condensed variations for the main headline was systematically varied across the test material (as shown in Table 1) in order to ensure that any effects of these attributes could be easily ascertained while still allowing for sufficient stylistic differentiation.

HEADLINE PERMUTATIONS FOR TEST MATERIAL

TYPEFACE	DIFFERENTIATION PATTERN		
	High	*Moderate*	*Low*
Myriad Pro Condensed	Document A	Document B	Document C
Minion Pro Regular	Document D	Document E	Document F
Myriad Pro Regular	Document G	Document H	Document I

The size, weight, and effects applied to the headline were varied according to the respective differentiation patterns. In addition to the differentiation of the main headline, introductory blurb, first paragraph style, and subheadings, each article included either a pull-quote or a sidebar to enable a greater range of typographic

RESULTS

ANALYSIS OF ELICITED CONSTRUCTS

Identifying the most frequently used descriptions does not necessarily provide a balanced account of the elicited constructs, given that each participant used their own words and that participants sometimes used similar words to mean different things. Instead, a thematic analysis of the elicited constructs enabled a more balanced understanding of the range of impressions formed. The thematic analysis was undertaken with reference to the audio data to ensure meanings were interpreted as accurately as possible.

Drawing on the kinds of constructs other repertory grid analyses have identified (c.f. Pope and Denicolo, 1993; Hassenzahl and Wessler, 2000), the full set of constructs from the trial was analysed. Five key themes were identified:

1 *Description* includes references to the appearance of the test material, including references to stylistic and organizational typographic attributes, color, and segmentation devices. Substantially fewer references to specific stylistic attributes (with the exception of judgments of boldness/lightness) were made in comparison to those related to typographic organization.

2 *Address* includes evaluative comments that pertain to perceptions of rhetoric and style and how the documents were seen to address or appeal to particular readers.

3 *Association* includes references to kinds of content, publications, genres, media platforms and cultural styles. The range and number of associative constructs indicate that participants' perception of the examples is often Inked to pre-existing, individual frames of reference.

4 *Credibility* includes appraisals of appropriateness, authenticity, credibility, ethos, information value, professionalism, reputation, and worth. Most participants articulated at least one construct that can be seen as a judgment of credibility. In particular, "professional" was one of the most frequently mentioned adjectives, as were references to importance and interest.

5 *Experience* encompasses a number of constructs that pertain to how readers experience and interact with documents. For example, participants articulated a range of judgments relating to usability and reading. A number of constructs indicated that participants formed assumptions about the assumed readers and their demographic characteristics, motivations and reading strategies from the typographic presentation.

COMPARISON OF QUANTITATIVE DATA
FROM TRIADIC PAIRING AND RATING SCALES CONT.

A	B	C	D
DIFFERENTIATION PATTERNS	DOCUMENT COMBINATION	PAIRING DATA MEAN (%)	RATING SCALE MEAN (%)
Low and Low	CF	85.71	78.79
	CI	58.33	75.88
	FI	66.67	79.73
High and Moderate	AB	16.67	59.03
	AE	21.05	55.17
	AH	14.29	52.98
	BD	16.67	51.69
	BG	33.33	48.93
	DE	12.50	46.11
	DH	7.14	46.99
	EG	17.65	42.95
	GH	7.14	41.58
Moderate and Low	BC	41.18	61.71
	BF	18.75	59.90
	BI	22.22	56.69
	CE	50.00	67.09
	CH	57.14	68.76
	EF	43.75	69.36
	EI	15.38	61.52
High and Low	AC	7.14	34.50
	AF	0.00	34.71
	AI	20.00	32.12
	CD	0.00	28.02
	CG	7.69	25.06
	FG	0.00	26.25
	GI	0.00	22.66

TABLE 2

Comparison of quantitative data from triadic pairing and rating scales

	1	1	1	4	4	4	4	4	4	scientific academic
more fun leisure	1	1	1	4	4	4	4	4	4	scientific academic
casual	1	1	1	4	4	4	4	4	4	formal
creative	1	2	2	3	4	4	5	5	5	typical
open-minded	2	2	2	4	4	4	5	5	5	narrow-minded
more inviting	2	2	2	3	3	3	5	5	5	less interesting
more vibrant	1	2	2	3	3	3	4	5	5	less vibrant
more exciting	1	1	1	3	3	3	4	5	5	dull
bold	1	1	1	3	3	3	4	5	5	shy
cheerful	1	1	1	3	3	3	5	5	5	conservative
bold	1	1	1	3	3	3	5	5	5	hesitant
energetic young	1	1	1	3	3	3	5	5	5	shy, conservative, old
not symmetrical more exciting	1	1	1	3	3	3	5	5	5	same old stuff
cheerful	1	1	1	3	3	3	5	5	5	sad, depressing
easier to read	1	1	1	3	3	3	5	5	5	not as interesting
young, exciting	1	1	1	3	3	3	5	5	5	old, boring
outgoing sociable	1	1	1	3	3	3	5	5	5	shy conservative
more readable	1	1	1	3	3	4	5	5	5	boring
contrast	1	1	2	2	3	3	4	5	5	pale

Cluster of low differentiation — I, F, C

Cluster of moderate differentiation documents — E, H, B

Cluster of high differentiation documents — D, A, G
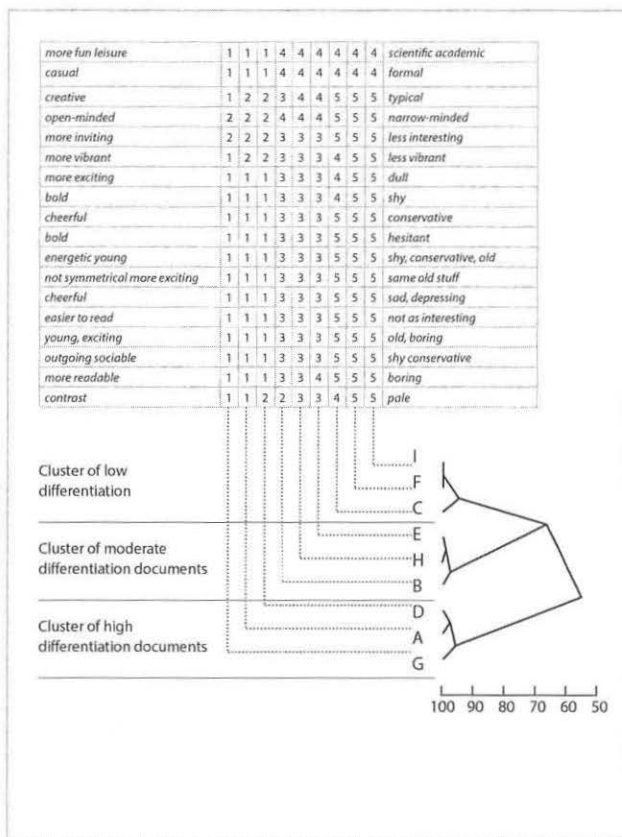
100 90 80 70 60 50

FIGURE 12 *Example of the cluster analysis visualization of a participant's grid*

Using the themes identified identified on page 111, a summary of participants' impressions of documents exhibiting high, moderate or low differentiation is presented in Table 3.

The constructs do seem to vary slightly in relation to individual preferences, indicating that participants' responses may shift in relation to their own experiences, associations and taste. Participants who found the high differentiation examples more attractive and user-friendly described the low differentiation pairs as dull and difficult to read. In contrast, those participants who found the high differentiation examples to be distracting and demanding described the low differentiation examples as more calm, relaxing, and stylish. Rather than necessarily perceiving these as harder to read, they noted that these examples are intended for serious, focused readers who would be reading for work or information rather than casual,

The data suggests that typographic meaning is not simply the expression of abstract qualities such as mood, but relates to how documents address and appeal to particular reader profiles, suggest specific reading strategies, and carry associations of credibility, information value, genre, and usability.

The relationship between typography and readers' associations of genre and usability identified here merits further exploration in relation to the translation of magazines and other genres onto new platforms such as ipad and tablet devices. As Kostelnick and Hassett (2003) discuss, convention plays a key role in document rhetoric and these conventions may differ or be more fluid in electronic media than in the more established print precedents. The evidence from the qualitative data in both the preliminary and repertory grid study reinforces the premise that participants use their own experiences of media and existing genres to make sense of documents.

Surprisingly, given the focus on typeface personality in typographic research and professional discourse, there was no evidence to suggest that the variations in typeface had any significant influence on participants' impressions. In contrast, participants seemed to make more general assessments of the relative salience of display type and commented more readily on the use of bold weights and capitalization than they did on differences in typeface.

The study provides sufficient evidence to suggest that patterns of typographic differentiation underlie readers' impressions of document design. Participants paired documents of the same differentiation pattern more readily than documents of differing patterns. The elicited constructs and the rating scales indicate that participants generally formed corresponding impressions for documents of the same differentiation pattern and contrasting impressions of high and low differentiation documents. However, the use of a two-column layout in some of the moderate and low differentiation documents seemed to be a strong cue across both patterns.

In this respect, it would seem that both the structural differentiation of information plays a key role in shaping readers' impressions of documents, in addition to stylistic differentiation.

This finding lends support to Waller's (2012) assertion that layout is a key component of text. This aspect of document design also

BENEFITS OF THE REPERTORY GRID TECHNIQUE

Methodologically, the use of the repertory grid procedure was an invaluable tool for this study in two ways. Firstly, it enabled the range and kinds of impressions readers form in relation to typographic presentation to be uncovered without forcing participants to adopt descriptors that may not be meaningful to them. This was particularly important because, in contrast to the emphasis in professional design discourse and typographic research on mood and personality, it enabled the study to reveal that typographic presentation does influence readers' assumptions about document credibility and their decisions about how to engage with a document. Building on this finding, it may be useful to test readers' impressions of document credibility and reading strategies further through studies that use a set of supplied descriptors and perhaps adopt alternative methods such as semantic differential scales or paired comparisons. Secondly, the repertory grid procedure enabled systematic measurement of participants' impressions of patterns of typographic differentiation while collecting rich qualitative data that contextualized and explained participants' responses. In these ways, it provided clear grounds to identify which combinations of attributes in the multivariate test material were influential on participants' impressions.

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