# The pedagogy of visual rhetoric in the business and technical communication classroom

by

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# CHAPTER 1

## INTRODUCTION TO VISUAL RHETORIC

To introduce the critical nature of visual rhetoric in business and technical communication documents, this thesis will begin with a hypothetical, albeit typical, professional communication scenario. Synthesizing much of the reading and perception that occurs as executives, managers, and business people read memos, letters, reports, and proposals in the so-called "real world," the scenario is intended to illustrate the dependence often busy and distracted readers give to the visual message as they attempt to understand the verbal message.

### BTC Journeyman

This particular journey begins with a typical proposal--a document often assigned in professional writing courses. The analytic proposal follows the generic structure outlined by Freed and Roberts (329-330). An introduction is followed by objectives, methods, costs, and benefits. Written and printed on a desk-top publishing system such as a Macintosh SE with Microsoft Word and Aldus Pagemaker, the proposal text is left-justified only, set in Palatino typeface and punctuated by

headings in Avante Garde font. The document uses tables in shaded boxes; color-coded line, bar, and pie graphs; four-color pictures; and other graphic effects.

The reader of such a typical proposal might be a chief foundation funding officer at a Fortune 500 company who grants $100 million in research awards every year. She--say her name is Martha--reads proposals and reports for about 400 projects per year and must choose whom to reject and whom to recommend for funding. Among her many other duties, Martha receives new proposals to review daily, rejecting most at a rate of about four a day. Those she doesn't reject she reads again more closely to write a recommendation to the foundation board of directors. To do her job adequately, then, she first needs to locate just certain information from the document--the organization requesting the funding, the basic nature of research project, and the projected budget, for example--and "get a feel for it." Usually she gathers this fundamental information in a quick scan of the entire proposal. Later she peruses the proposal to ascertain the specifics of the proposed research.

Today, she finds a $250,000 proposal written by you on behalf of your company's research department on her desk. Her first reaction is not promising.

"Oy, not another one. Well, how much do these people want?"

Having been up late the night before to complete a recommendation report, Martha is not thrilled at the prospect of writing yet another. Breathing a sigh of resignation, she takes a sip of coffee as she picks up your proposal for the first time. Her first impression begins with the cover; you spent an extra five hours designing it with its fancy but highly readable typeface, its heavy, quality bond paper, its artist's rendering of the research department's proposed project. Because you chose to print it in a dark green lettering that contrasts nicely with the grey background, your catchy title jumps out at this harried reader. Pleasantly surprised, she turns to your introduction.

Her first perception of the page is, again, encouraging. Well-placed headings; ragged-right ten-point, serifed text; and clearly-drafted illustrations welcome this executive to an introduction that is easy to read and understand. After answering a phone call from the company lawyer about copyright laws, Martha scans the rest of the proposal quickly, picking up the essential points in headings, bulleted lists, bolded and italicized words, illustrations, and pictures, and graphs. Finishing your proposal--which, by the way, took over 30 hours to write, design, and produce--as she finishes her cup of decaf, Martha smiles slightly to herself, tosses the proposal into her "RECOMMEND" basket, and makes a mental note to write the board of directors' memo. Pleased that this

recommendation should be unusually easy to write given the exceptional layout and "feel" of the proposal, Martha returns to her other duties.

## INTRODUCTION TO VISUAL RHETORIC

As more business and technical writing instructors adopt a rhetorical approach to professional communication--or what Paul Anderson calls an "audience-centered"--they tend to focus on the text--the verbal message of the document. In fact, some textbooks feature textual rhetoric almost exclusively (see, for example, Murphy and Hildebrant). But what about the visual message? After all, the first thing readers do when reading a document, before diving into the verbal message, is look at it (Kostelnick 82; Bernhardt 66). Despite this perceptual axiom, professional writing teachers typically relegate visual design in BTC documents to an embellishment-at-best status--something nice but not essential to the message carried in the text. Ben and Marthalee Barton cite this "de facto devaluation" of visual communication in professional writing as a pedagogical crisis ("Toward a Rhetoric" 127). The visual illiteracy rampant in students and teachers of professional writing has created a generation of managers, researchers, technicians, marketers, and other professionals who cannot handle the demands of "real-world"

business and technical writing--writing that increasingly insists on messages being conveyed quickly and graphically (Barton and Barton "Trends" 96-98).

The computer revolution is fueling this visual explosion (see Kostelnick "Rhetoric of Text Design" 189; Barton and Barton "Toward a Rhetoric" 127; Benson 35). Desk-top publishing (DTP) systems and programs in particular present a wide range of graphical tools for writers who, finding these fonts, rules, charts, pop-art clips, and icons available with a mere keystroke, embellish their documents as much as possible. Kostelnick argues that DTP is redefining business and technical communication because it "places visual design at the heart of the composing process, giving us unprecedented power to articulate the text with typefaces, graphic cues, and spatial variations" ("Rhetoric of Text Design" 189). However, amateur designs are often too articulate; without at least some rudimentary grounding in design and rhetoric, these same writers create visual and verbal catastrophes like the one in Figure 1.

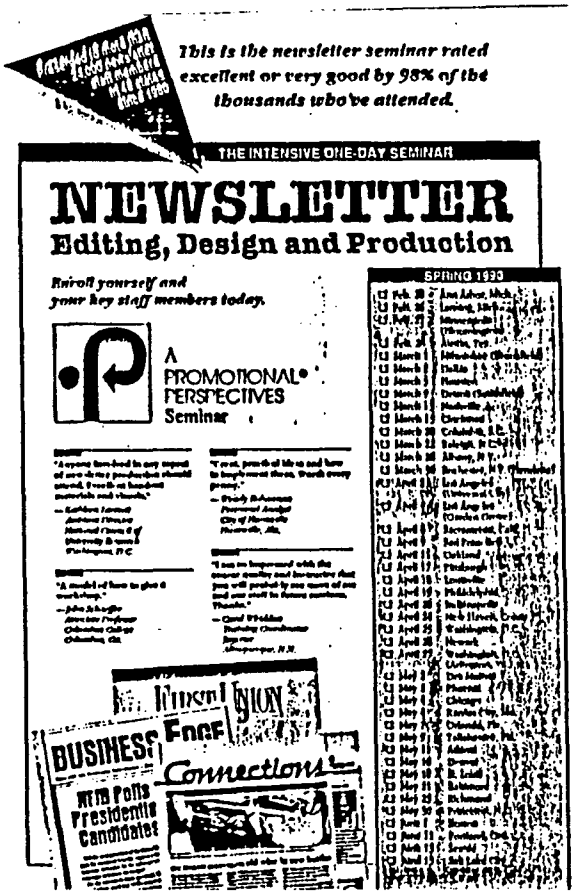



**Figure 1: Sales Brochure illustrating visual redundancy**

Design and text are not governed solely by the writer's penchant for fun or visual irony. While the writer's role is important in determining which visuals and what kind of visuals to include, that role must be tempered by the readers' demands, by how the audience will use the document. In fact, the reader/audience typically controls the verbal and visual design--or at least ideally the reader should remain the locus of control. In professional situations like the scenario

above, for instance, visual elements are chosen based on their usefulness to the reader; how can graphical cues help the busy executive pick up the necessary information and thereby create a favorable impression of your proposal?

Harried readers like the hypothetical Martha are typical in business and industry; likewise, the scenario represents much of what happens when a busy executive receives a written document, be it a proposal, memo, letter, or report. Unlike literary and academic expository texts that progress linearly, business and technical documents often do not progress in a linear fashion but favor organizational schemes that show rather than tell (Bernhardt 68-71). Showing readers the information is critical in functional documents--those documents that readers use to perform a task. Functional documents necessarily highlight important ideas via graphic cues that tend to catch readers' attention. Like Martha, executives, managers, and researchers quickly scan the page to identify key ideas and information, rarely stopping to read the text closely. Because they simply do not have enough time to read the text closely, information buried deep in text is often lost in similar visual surveys. Consequently, writers need to foreground important parts of a document through both verbal cues--transitional phrases, clear topic sentences--and visual cues--headings, illustrations, bullets.

Rhetoric, then, cannot stop with the written text. The rhetoric of any document is, for good or bad, affected as much by the visual message as by the verbal (Kinross 29; Bonsiepe 30). Kostelnick illustrates this concept in "Developing and Teaching a Course in Visual Communication" the following way:

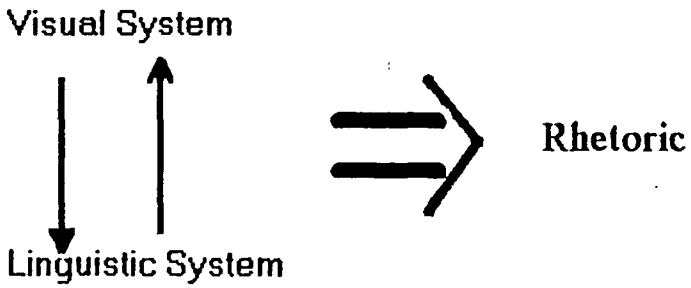



**Figure 2: Kostelnick's verbal and visual rhetoric** ("Designing for Readability" VC-46)

In this scheme, the verbal message--written text--and the visual message--graphic cues such as page shape, bullets, bolding, typeface, graphs, etc.--combine so that the document's whole rhetoric becomes not just the sum of the text and graphics, but a synergy that makes the whole inseparable from its parts. Integrating the verbal and visual rhetorics becomes critical to the success of the whole document. Some pioneering BTC instructors are adopting this holistic approach to document writing and design, witness Paul Anderson, Kitty Locker, Elizabeth Tebeaux, and Arn Tibbets, to name just a few. As a consequence, instructors can no longer ignore an

essential piece of the rhetorical puzzle, the visual rhetoric of the document's design.

## Definition of Visual Rhetoric

Several authors have offered definitions of visual rhetoric. Among them is Kostelnick, who calls visual communication the ability to arrange a system of "meaningful signs" such as text, graphic cues, illustrations, data displays such that they are appropriate to a particular audience, purpose, and situation ("Visual Rhetoric" 77; "Teaching" ET-124; "Readability" VC-44). Other authors stress the "cumulative reciprocal relations" between text and graphics (Bonsiepe 28) and the non-prescriptive nature of visual rhetoric. Ehses describes this situational characteristic as "choice" (54); Kostelnick describes it as problem-solving ("Visual Rhetoric" 87). Basically, an approach such as this involves writer/designers making rhetorically-based decisions about the graphic elements that are included in a document. In the final analysis, Ehses defines visual rhetoric this way:

> [Visual rhetoric is a] dialectic of comprehensibility and attractiveness to stimulate interest and to represent a high degree of information. (60)

Patrick Kelley cuts into the classroom with his definition, saying that visual rhetoric is a "practice that enables technical writing teachers to teach a verbal skill visually" (R-209). Thus, visual rhetoric is not only a way of evaluating document designs for their rhetorical appropriateness, but also is a way to teach whole document design.

## Visual Rhetoric in the Classroom

The implications of such a visual rhetoric in the classroom are far-reaching. If the visual and verbal systems are inextricably bound, then to favor only the verbal text is to disadvantage students by not providing them with powerful rhetorical tools. Teaching only verbal rhetoric is like asking students to work on a computer that has a keyboard but no monitor. They can function, but only with much difficulty. Instructors should, then, include visual communication not as a single unit, one session lesson, but as an integral part of the process of business and technical writing (Kostelnick "Visual Rhetoric" 87; Barton and Barton "Toward a Rhetoric" 142; Tebeaux "Heuristic" 32; Andrews 24; Killingsworth and Sanders 221).

But how can professional writing instructors who typically have little if any training in visual design

effectively teach graphical communication? Even many BTC instructors who are not "recycled literature or composition teachers" (Spurgeon 2) often have taken very little formal design training. After all, professional writing instructors are language experts, not graphic designers; and as experts in language instructors naturally feel more comfortable teaching the semantics and syntax of the documents students write than teaching the graphics or visuals they might include. However, this hesitation can be conquered by teaching graphics and visuals the same way instructors teach written text in professional writing classes--by discussing and examining the rhetorical impact of visuals and their syntactic and semantic underpinnings--what Philip Rubens calls a "visual grammar" (75). While a broad range of graphic skills is useful, actually only a basic working vocabulary and an understanding of rhetorical principles are absolutely necessary to incorporate visual rhetoric in existing verbal rhetoric of professional writing courses. Fortunately, most business and technical writing instructors are well-versed in rhetorical principles such as audience, purpose, subject, writer, clarity, emphasis, hierarchy, organization, style, and the like. And even more fortunately, these same rhetorical strategies that govern good writing govern good visual design (Kostelnick "Visual Rhetoric" 86). Like verbal decisions, visual choices are made in regard to the audience, purpose,

subject, tone, etc. This thesis will focus specifically on how BTC instructors can use familiar principles like audience, clarity, organization, and such to teach visual communication. The main advantage to a familiar approach is that teachers will not need to alter their existing syllabi radically to incorporate visual rhetoric into their professional writing courses.

As such, visual choices cannot be made only after the text has been written. Rather, the visual decisions should be made during the beginning of the writing process where they can do the most to further the message of the document and should undergo the same kinds of revisions made to the text--revisions to improve clarity, tone, to address the audience and purpose, etc. (Kostelnick "Visual Rhetoric" 87). Likewise, professional writing instructors cannot relegate visual communication to a single day-long unit but should incorporate visuals throughout the term. Integrating verbal and visual communication is not only theoretically sound, but also is mundanely pragmatic: visual rhetoric based on firm rhetorical principles is ultimately teachable.

Therefore, given the increasing importance of visual communication in professional communication documents and the applicability of rhetorical principles to visual messages, business and technical writing instructors can and should integrate visual rhetoric into their syllabi. This thesis

outlines just how that integration can be accomplished. While it will focus on the pragmatic, classroom application of visual rhetoric in Chapters 3 and 4, Chapter 2 offers some relevant theory to help professional communication instructors understand the perceptual, cognitive, and rhetorical theories underpinning visual rhetoric.

Specifically, each chapter will cover the following:

**Chapter 2: Theoretical Bases of Visual Rhetoric in Professional Communication**

This second chapter consists mainly of a review of literature in visual communication and of visual rhetoric in professional communication to establish theoretical foundations for the practical and pedagogical applications discussed later.

**Chapter 3: Creating and Evaluating the Visual Rhetoric of Communications Using Rhetorical Strategies**

This chapter builds on the theoretical underpinnings detailed in Chapter 2 by constructing a familiar, rhetorical way to create and evaluate the visual communication of documents via terms and concepts from composition. This chapter answers the

question, "How does theory of visual communication apply to documents produced in BTC courses?" and applies compositional strategies that are often taught in BTC courses to the design of documents using principles such as audience, purpose, subject, clarity, process, conventions, etc.

## Chapter 4: Pedagogical Methods for Incorporating Visual Rhetoric into the Professional Communication Course

This chapter further refines the argument that visual communication can be taught using rhetorical concepts by suggesting course sequences and lessons and assignments. Beginning with a broad discussion of how to sequence BTC courses in order to incorporate visual communication "holistically," the chapter then illustrates some possible lesson plans, activities, and specific assignments that convey visual communication as an essential variable in a document's rhetorical equation.

## Chapter 5: Conclusion and Call for Research

Finally, this brief chapter summarizes the theory and application principles of visual rhetoric to provide some closure to the thesis. It also issues a call for more research in visual communication, including ethnographic studies, pedagogical theory and application, textbook support, impact of DTP on professional documents, and so forth.

Overall, the thesis addresses the following questions in sequence:

Ch 1. What is visual rhetoric and do we really need to teach it?

Ch 2. What theoretical assumptions underlie visual communication in professional documents and professional communication courses?

Ch 3. How do these theories help writers produce and evaluate visual communication in the classroom, and what rhetorical concepts apply?

Ch 4. How do instructors teach visual communication using these concepts in BTC courses?

Ch 5. What did she just say, and what else needs to be done?

# CHAPTER 2

## THEORETICAL BASES FOR VISUAL RHETORIC IN PROFESSIONAL COMMUNICATION: PERCEPTION, COGNITION, AND RHETORIC

Reading begins with visual perception. Unlike speech perception, reading requires visual apprehension of the physical, spatial arrangement of the text on the page--one must "see" the text (Bernhardt 66). When reading a text, one must first visually perceive the letters on the page or monitor, then cognitively transfer these letters into meaningful words. Writing and reading are, therefore, inherently visual activities (Gelb 21-22). In Visual Thinking, Rudolf Arnheim explores the theoretical and inextricable nature of visual perception and mental cognition:

> My contention is that the cognitive operations called thinking are not the privilege of mental processes above and beyond perception but the essential ingredients of perception itself. I am referring to such operations as active exploration, selection, grasping of essentials, simplification, abstraction, analysis and synthesis, completion, correction, comparison, problem solving, as well as combining, separating, putting in context. These operations are not the prerogative of any one mental

> function; they are the manner in which the minds of both man and animal treat cognitive material at any level. There is no basic difference in this respect between what
>
> happens when a person looks at the world directly and when he sits with his eyes closed and "thinks." (13)

Arnheim's contention, albeit unintentionally, gets to the heart of professional communication, for just as readers and viewers must perform the cognitive operations that Arnheim mentions when examining a text, student and technical writers must perform many of the same cognitive operations on paper or online. Proposal writing requires exploration, analysis, and contextualization; report writing requires analysis and synthesis, grasping of essentials, selection, separation; managerial writing requires contextualization, completion, selection; manual writing requires simplification, correction, problem solving; and so forth. Thus, if "visual perception is visual thinking" (Arnheim 14), then reading and writing are perceptual and cognitive operations in which vision is the "primary medium of thought" (18).

Therefore, professional communication--business and technical writing--is inherently visual as well as verbal. David Sten Herrstrom claims that technical writing "insists on the visual" (223). The previous chapter began to argue for the necessity of visual literacy in the professional

communication classroom. This chapter will outline the theoretical underpinnings of visual communication, ultimately working toward Chapter 3, which will present a familiar and workable method by which instructors can teach visual literacy/visual rhetoric in the BTC classroom. However, some theory is essential for understanding the methods to be described in later chapters. Based on Arnheim's contention that thinking is fundamentally visual, Chapter 2 will explore perception and visual communication as they relate to rhetorical theory, including the well-known components of audience, author, and subject-matter.

## KEY PERCEPTUAL CONCEPTS

According to Arnheim, words are not representations of thought. Rather, words point to their referents, which are recorded in thought visually (228). This supposition implies that all writing is visible language and that perception and its corresponding characteristics mimic cognition and understanding.

### Perception is Active

The key distinction in this scheme is between perception and reception. Reception implies a passive, random, and

universal activity. Perception is just the opposite; it is an active, purposeful, selective, and complex cognitive act (Arnheim 19). For example, when using an illustrated computer manual, readers will actively examine illustrations like the one in Figure 3, performing the following perceptual operations on the illustration:

- Complete the shape of the computer printer.
- Compare this image with remembered images of other printers or of the physical printer.
- Form concepts about the image such as inserting other printer cartridges.
- Attend to features relevant to their needs like the orientation of the cartridge, while ignoring other features like the key pad.

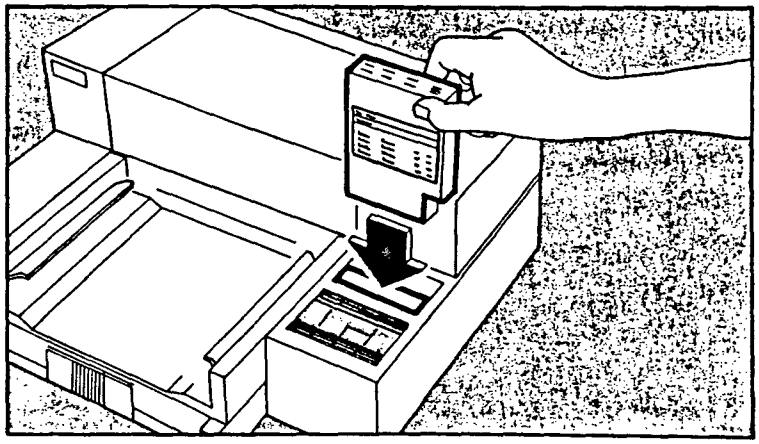


**Figure 3: Example illustration from computer manual.** (Hewlett-Packard "Owner's Manual 1-16)

Much of this active perceptual processing follows the "Laws of Visual Gestalt," which describe what operations readers perform on visual texts. Stephen Bernhardt describes a continuum of texts from the standard academic essay, which is typically not visually informative because it contains blocked paragraphs of text only, to instruction manuals, which are typically highly visually informative (66). The visual feature of the text "encourages the writer to be exact about grouping related ideas ... and using cues to signal to the reader a graphic representation of cognitive organization" (67). The laws of visual gestalt--the overall visual impact of the text on readers--most applicable to the layout of text are as follows:

- Equilibrium: Items in a visual field strive for balance with other items. (In Figure 3, notice how the arm balances the right visual field with the printer in the left.)
- Good Figure: Some features stand out from the background of the text and are distinguished from the general noise of the visual field. (In Figure 3 the cartridge stands out.)
- Closure: The mind tends to fill in missing features and visible gaps. (In Figure 3, readers complete the missing edges of the printer.)

- Similarity: Units which resemble each other will be seen as a homogeneous group. (In Figure 3 the printer and its parts are distinct from the human arm.)

These laws of gestalt create a "visual syntax" that assumes the perceptual and cognitive processing of text. Readers can then focus on discrete, relevant pieces of information, thereby eliminating the traditional "seamless," visually noninformative text and creating a "chunked," visually informative text that enhances readers' visual cognition (Bernhardt 73).

**Perception is Contextual**

The notion of visual gestalt suggests an interactive process between the image and the viewer. The viewer performs cognitive operations on the text and images that she sees. Likewise, the visual system of a text serves certain functions. Kostelnick describes two essential functions of visual systems in "Designing for Readability: An Index for Evaluating the Visual Language of Technical Documents." Stylistic functions "reveal the voice and argumentative stance of the writer/designer...giving the reader clues as to how to interpret the text" (VC-47). Good figure, equilibrium, typography, and so on function aesthetically to inform readers

about the tone of the document. Additionally, visual systems also perform relational functions which "enable readers to structure text--to see ... the syntax among textual particles" (VC-47). Through headings, bullets, lists, flow charts, and page layout, visual systems relate sections of the document to one another, thereby helping to create a context for the message.

Readers see images in relation to other images and objects in a context. Changing the context changes the perception of the image. As Arnheim explains, "everything in this world presents itself in context and is modulated by the context" (37). Viewers can subtract the object or image from the context; however, more often people look at how the context affects the image, how other objects relate to the image in size, color, shape, and proximity. Objects that are closely related by shape, size, and proximity tend to be grouped together, as explained by the Gestalt Law of Similarity. For example, a series of similarly sized pictures seems to tell a story; pictures of various sizes scattered throughout an annual report tend not to be grouped together, but are seen as distinct units.

**Perception is Experiential**

Just as perception always occurs in a physical context, it also occurs in a temporal context--"A perceptual act is only the most recent phase of a stream of innumerable similar acts, performed in the past and surviving in memory" (Arnheim 80). When an image is perceived, it is simultaneously made relatively generic and sharply distinct. The generic image is categorized with similar images held in memory. The distinct image emphasizes some distinguishing characteristic so the image is also unique. All relevant aspects of the image will be recorded by memory, including the empty spaces that often serve as ad hoc canvases for other possible images or concepts. All of these images then become part of memory and help people identify, interpret, and supplement complex images (Arnheim 84).

However, Arnheim warns that "recognition presupposes the presence of something to be recognized" (90). The generic and distinct images must match another image or images stored in memory; ambiguous images force the mind to perform "ingenious acrobatics" (Arnheim 91) in order to construct a corresponding mental category. In cognitive psychology this process of fitting images to established mental concepts is known as schema theory. Briefly, schemata are general knowledge structures that provide a framework around which humans

construct interpretations and understandings of situations, concepts, or images (Anderson 421; Kent ET-128; Schumacher 18). Schemata work both inductively and deductively through "bottom-up processing" and "top-down processing" (Palmer 295). Bottom-up processing requires an inductive leap from a set of images to a generalized concept. More efficient than bottom-up processing because it avoids that inferential leap, top-down processing works from categories. Once one knows the category--thereby instantiating the appropriate schema (Schumacher 18)--readers can recognize the image much more efficiently (Kent ET 128). For example, subject lines in memoranda activate readers' schemas for memos so they can more readily understand the message and its accompanying contextual baggage that follows. Recognition of written material is, therefore, "an interactive process involving both the text and the knowledge the reader brings to the reading situation" (Schumacher 22). Richard Anderson explains the phenomena this way: "Text is gobbledygook unless the reader possesses an interpretive framework to breathe meaning into it" (423).

With a broad understanding of perceptual and cognitive theory, writer/designers can now begin to focus on more specific rhetorical constructs that are related to visual systems and visual rhetoric.

## RHETORICAL/COMMUNICATION THEORY

The thrust of this thesis is toward a familiar method by which BTC instructors can incorporate visual communication into their professional communication courses. That familiar method is based on standard, well-known rhetorical principles. Therefore, a basic understanding of the applicable rhetoric principles is critical. This section will outline important rhetorical principles, following a taxonomy of product/process orientation.

Susan McLeod describes what she calls an orthodoxy approach to writing process that has overtaken composition in the past 50 years (McLeod 16; Berlin 82). This approach contrasts with the traditional product approach that focuses mainly on the document produced as opposed to the process involved in producing it. Murphy and Hildebrandt typically assume a modes or formulaic approach that emphasizes the final product of writing. While the two approaches are fundamentally different, they do have at least one characteristic in common: a concern for audience.

### Audience

Whether known as listener, reader, viewer, or audience, the person addressed, as Aristotle argues, "determines the

speech's end and object" (157). Audience can be composed of primary audience only, those persons for whom the text is directly intended and who will make decisions based on the information; audiences may also include secondary readers who, though they do not constitute the main target audience, nonetheless read and are affected by the document (Mathes and Stevenson 40-42). Paul Anderson calls such multiple readers "complex audiences" with "phantom readers" (Technical Writing 99). The various readers of a text may have different agendas and uses for the document; therefore, each needs to be addressed in the text (Mathes and Stevenson 17-20). Other authors question the reality of a definable audience, saying writers, to a greater or lesser extent, invent their readers (see Ong, Ede and Lundsford). Nonetheless, business and technical writing is engaged in communication to an intended audience, be that audience singular or plural, real or fictional.

Visual rhetoric theorists such as Kostelnick, Barton and Barton, Benson, Foss, and Duin--like their verbally oriented counterparts in professional communication and Aristotle--acknowledge the importance of audience, and in fact give primacy to the role of audience in communication. For example in "Trends in Visual Representation," Ben and Marthalee Barton cite the shift from a prescriptive approach, one based on rules and guidelines, to a more dynamic approach in which the

writer, text, and audience interact. In Barton and Barton's scheme, the audience re-creates the text and image ("Trends" 112). They sum up the viewer's active role in perceiving visual artifacts this way: "[There is] more to seeing than meets the eye; there is the 'beholder's share'" ("Simplicity 124).

This shift from a largely formulaic, product-centered to inherently interactive, process-oriented notion of visual communication is crucial to a rhetorically-based understanding of visual communication. The controlling feature of any communication, that which controls decisions about semantic, syntactic, and visual choices, is the audience and its need, use, purpose for, and attitude toward the document (Kostelnick "Visual Rhetoric" 77-78). Readers actively interact with the text and with their prior knowledge and experiences (Duin 98). In terms of cognitive theory, the audience actively participates in a visual drama whose characters are the words and images of the document. The drama becomes the context in which the players--audience, author, and subject-matter--interact. The rhetoric's the thing.

**Product**

The context is created by the players and takes place on a stage composed of paper or video monitors. The type of

stage or document on which the interaction happens is connected to the conventions of that document and to the information being conveyed. In their classic business writing book, Murphy and Hildebrandt outline several modes of professional documents such as:

- Direct Requests
- Good-News Neutral Messages
- Bad-News Messages
- Sales Letters
- Formal Reports
- Proposals

Each kind of document follows a certain structure. The textbook describes the characteristics of each document; writers then follow these guidelines when writing each particular kind of text. Similarly, Freed and Roberts describe a "generic structure" (328) for proposals that emphasizes the final product.

The danger of the modes or genre approach to technical documents is that one may become overly dependent upon conventions. This dependence may then lead to what the Barton's call an "ad hoc, behaviorist, and atheoretical" approach to visual communication in documents that relies on "perfunctory recommendations" about the appropriateness of visual artifacts ("Toward a Rhetoric" 128-129).

**Process**

As an alternative, professional writers and teachers of professional writing need to adopt a rhetorical, theory-based approach that is not static like the product view. Instead, Barton and Barton promote a dynamic discovery approach to writing and design that privileges the process of creating a verbally and visually rhetorical document. The process approach, what Susan McLeod calls the "New Orthodoxy" in composition (16), transfers the focus from the final product--the finished document--to the author and her struggles to create the document in a rhetorical context.

McLeod summarizes the process approach by breaking it down into its essential characteristics:

- recursive, not linear
- process, not product
- prewriting and discovery, not editing
- rhetorically contextual, not static
- socially contextual, not exclusive domain of the writer
- interdisciplinary, not just English, but also cognitive and developmental psychology (17)

Cognitive processes of not just the audience but also of the author become increasingly important. Arnheim calls this process "Visual Thinking," Killingsworth calls it "information

mapping" ("Complementarity" 220), Kostelnick and the Bartons call it "process" (Kostelnick "Visual Rhetoric" 77; Barton and Barton "Toward a Rhetoric" 134). Whatever one calls it, visual thinking is central to technical writing: "viewed as processual, visuals become tools for discovery, tools for the generation of ideas and for decision-making" (Barton and Barton "Toward a Rhetoric" 135). Therefore, the focus rightly moves from the product to the process, from the subject-matter to the interaction of the author with the text and conversation and collaboration between the author and her audience (Bruffee 641). Signification, the method by which graphic devices (including letters and words) are bound to "selected culturally sanctioned meanings" (Ehses 58) is a collaborative act between the author and audience--"it is an act whose product is a sign" (Ehses 58).

This interaction between author and audience is recognized in art theory as well as composition. Sonja Foss explains the connection this way:

> The process by which a visual phenomenon creates a response is similar to that of verbal discourse. A painting, for example, through its specific presentation, creates a particular reality or world, the meaning of which emerges only through interaction between the artist and the viewer. As a result of the cooperation between the artist and the

> viewer, a community of action is established in which both respond in similar ways to the visual symbols. The identification occurs only insofar as the artist speaks the viewer's language by tonality, order, image, attitude, and idea. (55)

The image, attitude, and tonality of the writer creates the "voice" that is projected by the verbal and visual elements of the document. Aristotle called this voice the "ethos" of the discourse (154), the appeal to the good character of the speaker. Corbett warns that this "hidden persuader" (85), ethical appeal, must be infused throughout the discourse--a touch of peevishness, malevolence, bad taste, or inaccuracy can jeopardize the entire discourse (82).

The voice of much technical discourse is precious and spare; conciseness reigns as the sine qua non of readability and style (Laib 443). Textbooks and teachers alike advocate economical use of words--pack as much meaning into as few words as possible. Design in technical fields and in technical communication shares this penchant for clarity. As Kostelnick explains, modernist principles from design are usually appropriate for business and technical writing. Those principles include

- Strict economy
- Universal objectivity
- Intuitive perception

- Unity of form and purpose ("Typographical Design" 5).

However, economy and objectivity should not be equated with neutrality. Gui Bonsiepe points out that only a very few things are "simple, dehydrated information, innocent of all taint of rhetoric...'Pure' information exists for the designer only in arid abstraction" (159). Robin Kinross extends this argument further saying nothing is rhetorically neutral, nothing is free of rhetoric (29). Even the sparse railway timetables Bonsiepe and Kinross use as examples are subject to the throes of rhetoric. A minimal design provides silent commentary on the writer, designer behind the text.

It is incumbent upon professional communicators to consider the image the document projects, the image that emerges from the symbiotic coalescence of verbal and visual systems constituting the rhetoric of the text.

## CONCLUSION

Given the visible nature of perception and cognition, any document must address those basic characteristics--visually bound, active, contextual, and experiential. Schema theory also provides a framework around which documents can be designed and written. However, writers must always bear in mind the rhetorical milieu of any communication problem.

Specifically, they must ask two complementary questions: How do the unique situational rhetorical components of audience, subject-matter, and author affect readers' perception and cognition of the message? And, how can perception and cognition theory help writers design a more effective document given its rhetorical milieu? These are the questions professional communication instructors need to prompt students to ask; Chapter 3 explores how teachers can facilitate students' questioning.

# CHAPTER 3

## CREATING AND EVALUATING VISUAL SYSTEMS USING RHETORICAL AND COMPOSITIONAL STRATEGIES

A little theory can go a long way toward helping BTC instructors understand the importance of visual communication in professional writing. Kostelnick argues that students in visual communication courses need a secure grounding in perception, cognition, and rhetoric, as well as a notion of the history of visual communication to use visible language effectively in functional documents. Students in business and technical writing courses also can benefit from some similar theoretical bases, but how much do they really need to know about visual communication? And how much can BTC instructors teach in a course already brimming with a year's worth of material? One answer is to parcel out theory strictly on a need-to-know basis.

So, what theory do students need to know? Rhetorical theory usually taught in professional communication courses provides the power students need to create and evaluate design in documents. Many of the same rhetorical and compositional principles now taught in business and technical communication courses can be applied equally to the verbal and visual systems of documents. Strategies like

- the process approach
- conventions
- correctness
- ethics
- tone
- conciseness
- clarity
- completeness
- audience
- cohesion
- forecasting
- emphasis

can help students create and evaluate their documents' visual design. Providing an avenue for students to express their "verbal justifications" about audience, complexity, and coordination of form and function in their visual designs (Titen 116), rhetorical principles such as these also provide an avenue for teachers to incorporate into their already hectic syllabi a complex, but essential, subject: visual rhetoric.

One word holds the key to the success of this approach: incorporate. Using rhetorical strategies common in professional communication classrooms promotes visual design from its "ad hoc, behaviorist" (Barton and Barton "Toward a Rhetoric" 128) status to one of peerless integration with the

text. Visual design becomes, then, not a single, day-long unit inserted randomly somewhere in the syllabus. Rather, visual design becomes one more critical piece of the rhetorical puzzle. As Chapter 2 explained, so much of reading and thinking is visually oriented that it behooves teachers and students to consider the rhetorical implications of the design when creating and evaluating documents during the entire BTC course.

Visual literacy cannot be adequately taught in a one or two period unit, but must instead be integrated throughout the semester (Barton and Barton "Trends" 103; Kostelnick "Visual Rhetoric" 87; Tebeaux 32; Andrews 24; Killingsworth and Sanders 221). Despite the complexity of visual communication, an integration can be achieved by applying the concepts of rhetoric to visual systems as most instructors now apply them to verbal systems. The most obvious strategy with which students can create visually communicative documents is the process approach--an approach almost universally followed in writing courses, as argued in Chapter 2. This chapter will, therefore, begin with visual design process in the professional communication classroom, moving on to other rhetorical principles and compositional guidelines that can be applied when creating and evaluating documents such as conventions, correctness, ethics, tone, clarity, completeness, audience appropriateness, cohesion, forecasting, and emphasis.

## PROCESS APPROACH

As Chapter 2 explained, the process approach outlines a recursive but organizational writing scheme that usually involves planning, drafting, revision, and editing. Many teachers emphasize the importance of careful verbal planning and extensive written revision for student writers. In a visually-rhetorical scheme, students should consider visual aspects the visual rhetoric from initial conception so that their graphic aids do not become embellishments, but rather further their entire messages.

Since the middle of the century, the field of composition has experienced a revolutionary change from a focus on modes of writing to a near-obsession with the process of writing (Berlin 82; McLeod 16). Similarly, visual design is currently experiencing a product-to-process revolution. Designers and writers both are increasingly emphasizing the design process over the graphic product (Barton and Barton "Toward a Rhetoric" 128). How does the visual fit in the verbal, rhetorical, and social context of the piece? How do designers arrive at a rhetorically appropriate visual? How can visuals help designers organize their information?

Asking students to design and redesign visual systems refocuses their attention from the visual product to the visual process involved in communication. Barton and Barton

distinguish between "presentational graphics" and "analytical graphics." The former typically focuses on conveying information in a visual way and tends to subordinate the visual to the text. The latter, analytical graphics, focuses on the generation of hypotheses by analyzing data ("Trends" 107-108). Eschewing number crunching, analytical graphics stress the "heuristic value of visual representations for generating ideas" (109). An analytic approach to graphics such as this helps students avoid inserting graphics just for their own sake and encourages students to use graphs, charts, pictures, etc., to invent as well as structure their information according to rhetorical demands. As discussed in Chapter 2, perception and thinking is visual. Therefore, by approaching design from a process perspective, students can coordinate their writing and designing to match their natural mental functioning.

Visual processes in professional communication are also seen as ways of creating information, and so are critical throughout BTC courses. Hashimoto argues that students come to college possessing only marginal organizing skills, at best usually chronological organization skills. However, visual concepts and aids can help students sort and organize their information (287). Graphs, headings, icons, bullets, etc. can help writers as they plan and compose their documents by helping them visualize the organization and layout of the

information on a macro level in such a way that they can see the connections and trends and hierarchies between sections. "Information mapping" and visual thinking can help students organize their data and information early in the planning stage (Killingsworth and Sanders 221). Page preview or "greeking" the page as in a computer program shows the overall organization of text and graphic artifacts. Particularly when creating complex or lengthy documents, students in BTC courses can use visual mapping and outlining to structure their messages. For example, students might construct a flow chart that illustrates their argument. Or students might write and organize headings and pictures before filling in the text.

Likewise, in raw data displays and paragraph arrangements, relationships and trends are lost to readers as well as writers (see Figure 4). In the process of planning and creating their documents, students can consider alternative ways to present information so that it will be more meaningful for them as authors and more meaningful for their readers. A list of numbers about company profits and losses, for example, does not reveal the trends and essential information and relationships that a bar or line graph might. Plotting that raw data along an X/Y axis will provide much more meaning and will be better remembered by the audience than a list of numbers. The readers will be able to process that information "simultaneously" rather than sequentially

(Minor 12). Bertin also explains that to be able to understand any set of relationships the readers must spatially perceive the information simultaneously, or all at once as in graphs (7). As Chapter 2 explained, "seeing" the information is critical to help readers and writers visually process messages. Writers, too, can benefit from this organizing feature of visuals. By seeing the relationships of data, writers can more effectively arrange complex information. For example, a set of numbers like those in Figure 4 could be incorporated into the paragraph arrangement of the text.

The revenues for the Green Earth Rhythm Saloon in the past decade are as follows:

Total revenue began in 1980 at $90,000 and proceeded through the 80's to $130,000 in 1981, $120,000 in 1982, $170,000 in 1983, $200,000 in 1984, $240,000 in 1985, $275,000 in 1986, $280,000 in 1987, $250,000 in 1988, $225,000 in 1989, and finally $200,000 in 1990.

**Figure 4: Example set of numbers in paragraph arrangement**

Alternatively, students can try presenting the figures in a table, line graph, bar graph, or pie chart (Figure 5). Each kind of visual emphasizes different aspects and relationships of the numbers (Burton 41). Line and bar graphs show trends in data, pie charts reveal the division of a whole, and tables streamline information and reduce redundancy (Andrews 19).

Each visual representation conveys the information in a slightly different manner. Students should consider which

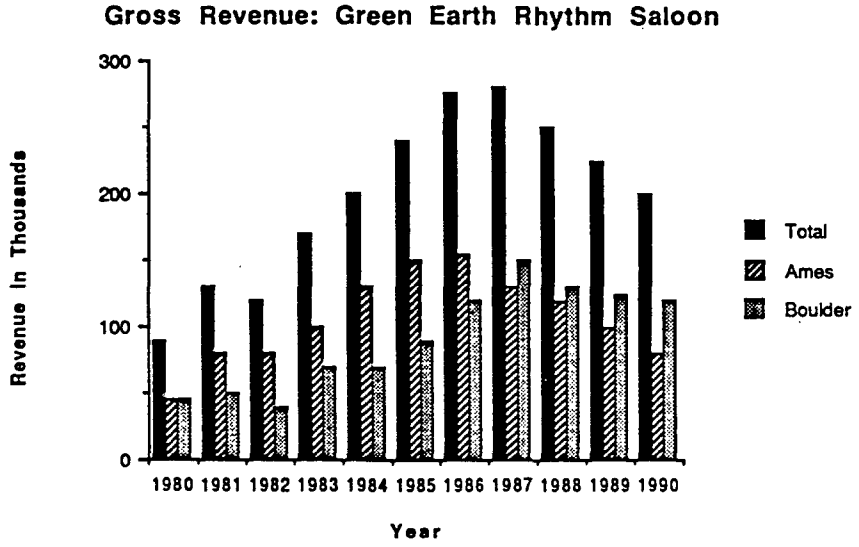
presentation most closely matches their authorial intentions and needs of their readers.

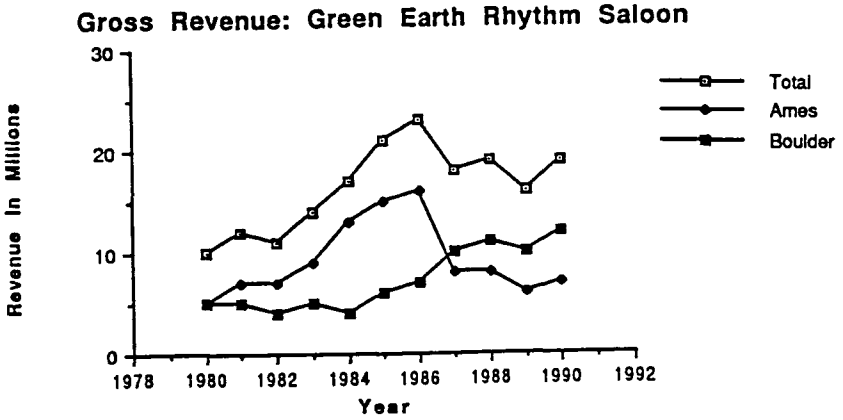
**Gross Revenue: Green Earth Rhythm Saloon**

| Year | Total | Ames | Boulder |
|---|---|---|---|
| 1980 | 90 | 45 | 45 |
| 1981 | 130 | 80 | 50 |
| 1982 | 120 | 80 | 40 |
| 1983 | 170 | 100 | 70 |
| 1984 | 200 | 130 | 70 |
| 1985 | 240 | 150 | 90 |
| 1986 | 275 | 155 | 120 |
| 1987 | 280 | 130 | 150 |
| 1988 | 250 | 120 | 130 |
| 1989 | 225 | 100 | 125 |
| 1990 | 200 | 80 | 120 |

Table

Bar Graph




Line Graph

adhere to certain conventions in their design. For example, headings follow an orderly hierarchy--a hierarchy most readers are familiar with and expect. Schema theory discussed earlier posits that readers come to certain kinds of documents and visuals with certain expectations and experiences. These expectations often eventually become systematized into conventions. Graphs, charts, and tables like those in Figure 5 each carry their own set of conventions that govern their design and application. Most textbooks and many articles written on visual communication in professional writing list principles, indeed prescriptions, for making graphs, charts, illustrations, and even for making layout decisions. Under the guise of a product emphasis, many guidelines stem from the conventions of the type of graph or chart or from the type of document. Examples of conventions are:

- Pie graphs should be reserved for dollar amounts or percentages
- Tables should be presented vertically rather than horizontally
- Line and bar graphs' X-axes should be longer than Y-axes
- Zero marks should always be in the lower, left-hand corner
- Time increments should appear on the horizontal axis, numerical amounts on the vertical

- Numbers should increase up and to the right and should be equally spaced over the axis
- Numbers in a pie graph should add up to 100
- Pie graphs should be divided no more than six to eight times

While conventions are important to address readers' expectations and prior knowledge, slavish adherence to conventions can limit possibilities for effective, "viewer-driven" designs (Barton and Barton "Simplicity" 16). Instructors should, therefore, present conventions within rhetorical frameworks so students can decide when it is appropriate to violate traditional conventions (Barton and Barton "Toward a Rhetoric" 130). For example, the convention that pie charts should be divided into no more than eight segments finds its origins in a concern for audience--research shows that readers cannot accurately compare similarly-sized pie pieces (Spurgeon 14). Because readers can process the information more easily and because they expect such design conventions, students would do well to follow this convention in most instances. However, there are times when the purpose is not to illustrate the size of the pieces of pie, but rather the very division of a whole into too many parts. A pie graph segmented 15 times would aptly show the over-division of the whole and would serve to reinforce the rhetorical point, for example in Figure 6 that financial resources are spread too

thinly. Put into an appropriate context, this graph would support and enhance the text, and would be, as a consequence, a rhetorically sound design (Barton and Barton "Toward a Rhetoric" 130; Burton 47).

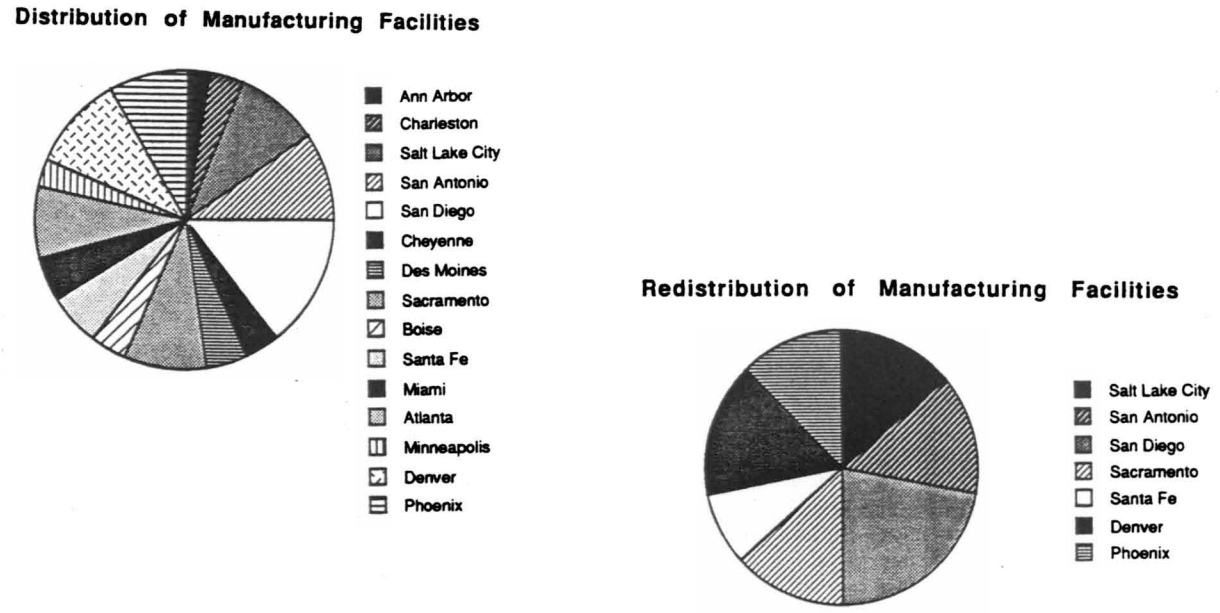



**Figure 6: Unconventional but rhetorically effective pie chart and contextual consequences**

When students put graphics in contexts they are forced to consider audiences and purposes which underlie visuals. As in written messages that are most often purposeful--especially in business and technical writing--the visual, as Andrews suggests, should "perform essential functions" within the document (20). She outlines four essential functions of visuals:

* to emphasize a point
* to enhance continuity

* to inform and clarify
* to heighten interest

Once a student has determined what the explicit purpose of the visual is, he is ready to make rhetorically valid choices involving his intentions, audience, and subject-matter in the design of the visual.

## Ethics

If students disregard conventions, they risk inaccurate and unethical data displays, since "graphics not only represent data, but also interpret them" (Killingsworth and Gilbertson 135). As shown in Figures 5 and 6, different kinds of data displays reveal different kinds of meaning from the same information. By choosing a particular type of display and by the particular design of that graph or chart, students make choices about the meaning they lend to their information. Therefore, students should be aware not only of the nuances in representations, but also in the accuracy and ethics of their data displays.

For example, Figure 7 shows two line graphs made from the same set of data. By shortening the X-axis, the decline is made to seem much more precipitous. Rhetorically, this result may be desirable--especially if the writer wants to emphasize the decline in enrollment. However, ethically the graph is an

inaccurate and unfair representation of the data. The same data have been manipulated to show quite different situations. One shows a precipitous decline in student enrollment, while the other suggests that enrollment has remained steady throughout the decade.

The connotative, and seemingly literal, meanings might cause readers to respond in very different ways. For example, an alumnus might be persuaded to give money to the college if she sees a steady enrollment. On the other hand, to induce a board of regents to institute dramatic, and immediate changes, the graph on the right might reflect the drama and immediacy of the need, thereby spurring them to make proposed changes. Thus, while students should strive for rhetorically-effective designs, they must balance rhetorical demands with ethical and accurate data and graphic displays by adhering to critical design conventions.

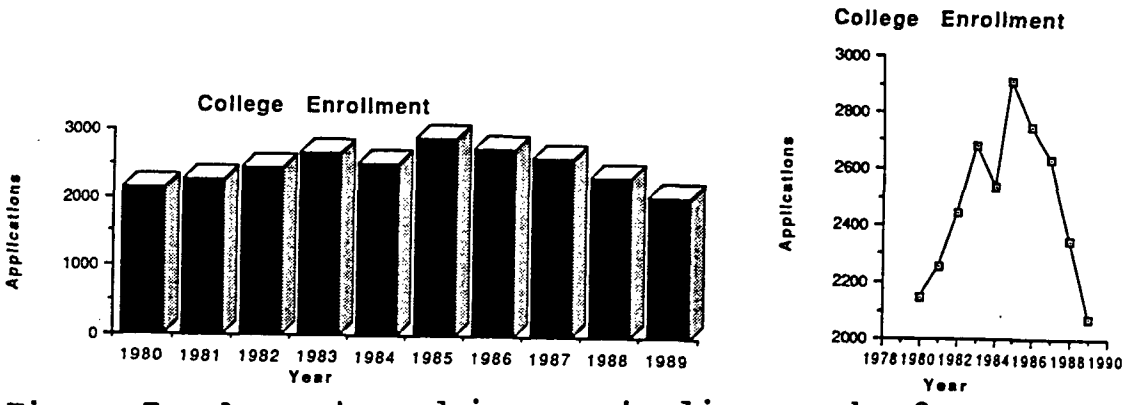
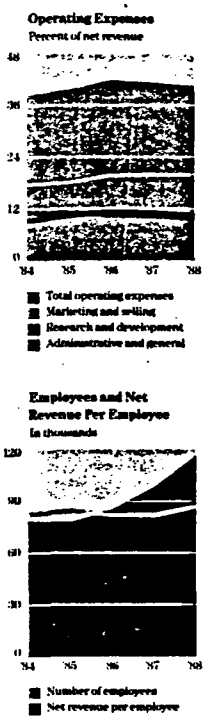



**Figure 7: Accurate and inaccurate line graphs from same set of data.**

This disparity in meaning and consequence is not simply a matter of convention, however. Mis-presenting a graph in order to evoke a desired response is ethically irresponsible. Tufte calls this misrepresentation of data the "Lie Factor," which is based on the size of effect shown in the display and the data effect (57). More and more teachers and textbooks of professional writing are incorporating units on the ethics of business communication in their syllabi and textbooks (see Locker; Mathes and Stevenson). While student authors may control information for positive and rhetorical purposes, they can manipulate data and text in unethical ways to show different relationships or to bury or emphasize certain segments of information at the expense of other information. As the example section from an annual report shows in Figure 8, sometimes writer/designers manipulate their designs to paint a positive picture, even when the information may not suggest such a stable situation.




principally through dealers and other value-added resellers. Because of fundamental differences in cost structure, sales of these products generally involve higher cost of sales and lower operating expenses, as a percent of net revenue, than the company average. Largely as a result of these effects, cost of equipment sold and services as a percent of net revenue increased 1.3 percentage points in 1988 while total operating expenses decreased 1.0 percentage point. Cost of equipment sold and services was affected to a lesser extent by other factors such as pricing pressures from increased competition and manufacturing efficiencies resulting from improved capacity utilization.

Although research and development expense decreased as a percent of net revenue, expenditures increased 13 percent in 1988 to $1.0 billion and amounted to $2.7 billion over the last three years. Research efforts have resulted in a continuous flow of new products and are considered vital to the company's future growth and competitive position in the marketplace. Generally, over half of HP's annual orders are for products introduced in the preceding three years.

Marketing and selling expense grew 21 percent in 1988 to $2.0 billion as compared to an increase of 15 percent in 1987. The growth in these expenses was principally attributed to direct selling costs incurred in connection with higher sales volume, along with increased product promotion, advertising and currency translation effects. Marketing and selling expense as a percent of net revenue declined only slightly from 1987 because expense increases largely offset the favorable impact from the changes in product mix. Management continues to focus on marketing and selling strategies to respond to the rapid increase in the dealer channel business and to maintain HP's leadership position in customer satisfaction. Administrative and general expense grew 19 percent in 1988 to $987 million following an increase of 11 percent in 1987. This increase reflects higher profit-sharing and retirement expense and lower net interest income.

The company's effective tax rate was 28.5 percent in 1988 compared to 33.0 percent in 1987 and 33.9 percent in 1986. The decline in the tax rate in 1988 was attributed to several factors, the most notable of which were the reduction in the U.S. federal statutory income tax rate and lower effective tax rates on earnings generated outside the U.S. Effective tax rates outside the U.S. declined principally because of tax benefits associated with a particularly high level of repatriated earnings and local tax effects of currency translation.

The company will be required to adopt Statement of Financial Accounting Standards No. 96 (SFAS 96), "Accounting for Income Taxes," by fiscal 1991. As more fully described in the Notes to Consolidated Financial Statements, implementation of SFAS 96 is expected to result in a benefit to reported earnings in the year of adoption.

Net earnings for 1988 were $816 million compared to $644 million and $516 million in 1987 and 1986, respectively. As a percent of net revenue, net earnings increased to 8.3 percent in 1988 from 8.0 percent in 1987 and 7.3 percent in 1986. The company's improved profitability was primarily attributed to higher revenue growth, control of expenses and reductions in effective income tax rates.

HP employment increased to 87,000 employees in 1988 from 82,000 at the end of 1987 and 1986. The company increased its workforce principally in the marketing and selling, and research and development areas.

**Figure 8: Example annual report showing a stable situation (Hewlett-Packard "Annual" 30)**

While certainly students should be able to manipulate data according to their purpose and audience, they also must be aware of ethical concerns of presenting data unfairly or inaccurately. Therefore, guidelines that are often prescribed in textbooks have their place even within a rhetorically-based visual curriculum. One such guideline--that graphs should be wider than they are tall--helps students choose which of the above graphs is most accurate and helps them choose which is appropriate to their rhetorical situation. For instructors, graphical representations offer a way to open a discussion of ethics in business and technical communication as well as correctness in documents.

## Correctness

Accuracy in professional documents is absolutely essential. Exactness in technical reports is critical since products and even lives may depend on that information. Sloppiness in letters can lead to lawsuits. Wrong figures in memos can cause employee dissatisfaction. Inaccurate estimates in proposals may cause clients to reject the proposal. Typos and mistakes in letters of application and resumes can thwart employment prospects. Beyond the rather mundane considerations of the importance of grammatical correctness in professional writing (which is being hotly debated),

correctness is rhetorically justifiable. Errors in punctuation may affect readers' response. More dramatically, errors in information and/or data can affect their response and alter the outcome of the document.

Therefore, when designing documents, student writers should be encouraged to consider the accuracy of their designs, particularly that of graphs, charts, tables, and such. Are appropriate conventions followed? Are the numbers correct? Does the angle of the picture or illustration distort the figure or subject? Are headings and captions descriptive and accurate? Is truly important material highlighted? Figure 9 illustrates a common mistake made when writing and designing headings.

### Leave

Although TAs do not earn vacation time, you may need to be absent from your duties at times. Leave with pay is granted only under exceptional circumstances (see the *ISU Office Procedure Guide*, available in departmental offices). Sick leave provides for leave with pay on a basis proportional to the fraction of appointment. An assistant on sick leave must furnish evidence of illness or injury if the department executive officer requests such evidence.

Departments may have their own guidelines about granting leave to graduate assistants. This matter needs to be clarified with you departmental supervisor as soon as you know that you need to take time away from you TA duties.

## Regulations Concerning Professional Ethics

As Iowa State staff members, teaching assistants are both protected by and responsible for abiding by the university's general regulations and guidelines concerning appropriate behavior. Some of these guidelines are included as appendices in the *Graduate Student Handbook* (available in departments and from the Graduate College). You should consult that document if you

### Nondiscrimination

The university has an established policy against discrimination based on race, color, religion, national origin, sex, handicap, or status as a disabled or Vietnam era veteran. Iowa Stat is an equal opportunity employer. As a TA, you may not discriminate among your students on any of these bases. (See appendix N in the *Graduate Student Handbook* for the policy.)

### Prohibition Against Sexual Harassment

The university prohibits sexual harassment of students and employees. A full definition of sexual harassment appears in the *Graduate Student Handbook* (appendix O). Individuals who sexually harass students or employees will be subject to appropriate disciplinary action. If you have reason to believe that you or one of your students my have been subjected to such harassment, you should bring the matter to the attention of appropriate supervisory personnel.

### *Appropriate TA Behavior*

Some university handbooks contain various other policies that address appropriate TA behavior.

- Teaching assistants are expected to present the assigned material in classes they teach, to respect

**Figure 9: Inconsistent heading design**
(adapted from ISU Teaching Assistant Handbook 10)

Correctness is a useful design evaluation tool for students. However, they should attend not only to the literal, numerical correctness; students also need to be aware of connotative meanings of their visual aids and the potential distortions of those meanings if errors are present. As Figure 7 illustrates, the same literal data can be manipulated to convey two entirely different connotations. Students can learn to recognize these connotations by manipulating designs many different ways as in Figure 7. Or, students can analyze

the rhetorical consequences of too much underlining as in the resume section shown in Figure 10.

WILMA K. FLINTSTONE
2809 Granite Avenue
Bedrock, California 90074

307/578-7625

CAREER OBJECTIVES

To obtain a career in the travel industry that allows me to utilize my skills and gain new ones.

EDUCATION

832-828 b.c. UNIVERSITY OF BEDROCK
Bedrock, California
Bachelor of Liberal Studies

WORK EXPERIENCE

828—present Travel International, Ltd.
Tar Pit, Utah
Travel Consultant
Responsibilities:
Arranging travel itineraries
Booking air, hotel, dinosaurs
Issuing air and Amtrack tickets
Coordinating complete tours
Managing office
Operating APPOLO Reservation System
Training new employees
Completing weekly sales reports

**Figure 10: Underlining error in resume**

The excessive underlining not only makes the resume difficult to read, but also implies certain connotations about the document and its author. The author seems desparate to emphasize everything and, consequently, ends up emphasizing nothing. The image is of a frantic, unorganized and not too savvy potention employee. These connotations help create an author image or what Corbett calls a corporate image (6).

## AUTHORIAL TONE

Given, as Robin Kinross insists, that no document can be rhetorically neutral (29), writers/designers acknowledge that visual choices carry tones, personas, even connotations unique to their design. As with verbal language, this tone and these connotations can be manipulated to address the purpose and audience. D.C. Andrews describes an academic organizational chart originally designed in the conventional hierarchical manner so that administrators were listed physically above professors who were situated on the page above adjuncts, who were above assistants, etc., thereby creating an image and message that the administrators ruled over the academicians. In an effort to quell some grumbling in the academic community, the chart was redrawn in concentric circles so that no one group dominated another (18). In keeping with the revision-oriented nature of design process, students should be encouraged to manipulate their data several different ways and to analyze the tone and connotations underlying the different designs. Bertin suggests that a graphic is

> no longer "drawn" once and for all; it is "constructed" and reconstructed (manipulated) until all the relationships which lie with it have been perceived (5).

This is especially critical and easy to do on a computer program. Relationships and connotations often reveal the image of the author, the "ethos" of a document (Corbett 81).

The images authors intend are conveyed in the "voice" of the text and the "look" of the visuals. While the tone, image, and voice are difficult to identify concretely, readers recognize and respond to them; these variable characteristics influence the rhetoric of the document (Kostelnick "Rhetoric of Text Design" 199). Writer image is an important rhetorical variable students need to include in their rhetorical equation. Chapter 2 looked at author image briefly, explaining that images emerge from the attitude, tonality, and voice created by the verbal and visual elements. Writers usually choose an image to project and make verbal and visual decisions in light of that image. The look of the document immediately conveys an image to the reader. This image is closely tied to the audience and the purpose of the message. Given what the author is trying to achieve and to whom she is trying to direct the text, she can manipulate the image she projects. For example, a young person applying for jobs usually wants to appear professional, hard-working, and responsible. Resume design, then, tends to be conventional and relatively expensive--typeset on quality bond paper. A large corporation, on the other hand, may wish to play down the impersonal, sleekly professional image and instead adopt a

friendlier, conversational, helpful-neighbor tone and design, as in Figure 11.

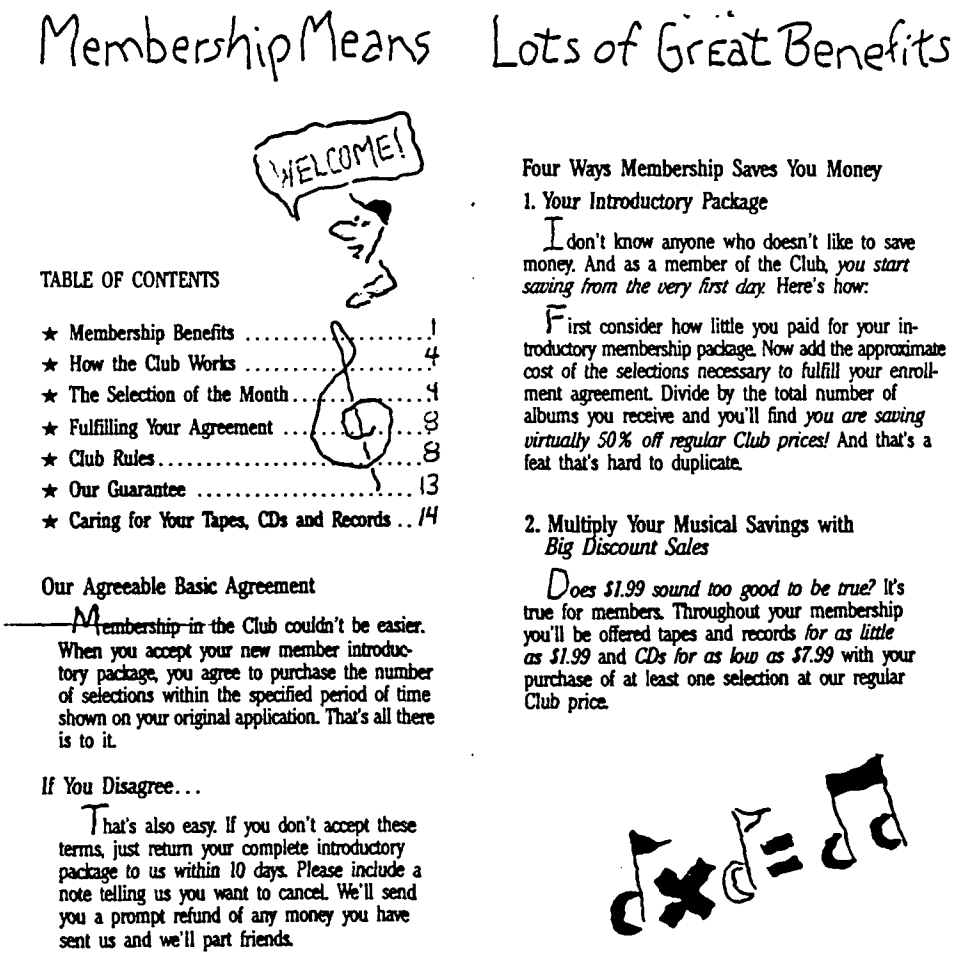



**Figure 11: Informational brochure that illustrates a friendly corporate personality**

The image is created by what Kostelnick calls "stylistic functions" of visual systems. Stylistic functions operate to give documents an aesthetic that foretells the author's projected image ("Readability" VC-47; Kinross 29; Bonsiepe 159). Graphical artifacts such as page layout, pictures, typography, and justification of text combine in unique ways

to create individual images for different documents. In an aristotelian analysis of an advertisement, Corbett reveals the corporate personality behind the design through the picture, typefaces, and subheadings in the ad (4-7). Other information-design researchers support Corbett's analysis. Walker, Smith, and Livingston suggest that typefaces have features that they share with certain concepts making them appropriate to represent a particular concept (30). For example, in Figure 12 the type personality is more appropriate for one text than for another. The slanted, sans-serifed, bold text looks fast and efficient, thus conveying desireable qualities of a delivery service. On the other hand, it seems inappropriate for a serene, quiet, slow-paced residential home.

These "associational effects" of typography and design (Waller "Text as Diagram" 162) can be manipulated by student authors according to their purposes and audiences. Rhetorically sound documents create and maintain an image through level of diction, person reference, and graphical design. In the classroom, teachers can incorporate the visual look with discussions of the verbal voice.


**Figure 12: Personality of typeface**
(Walker, Smith, and Livingston 29)

## Clarity

Clarity is by far one of the most prominent principles of business and technical writing. Direct, objective, concrete prose is the cornerstone of professional communication. It, in fact, contributes much to the tone and personality the discipline. Many technical and business writing teachers advocate the classical notion of the plain style in their students' writing (Mendelson 4). This unembellished, clarity-above-all, yet flexible approach to writing applies as well to the design of visual elements. While some argue that such a minimalist approach creates its own rhetoric and that no document, no matter how sparingly designed, can be rhetorically "neutral" (Kinross 20), guidelines such as clarity, precision, and efficiency (Tufte 13) provide malleable boundaries within which students can make rhetorically-based choices. Many visual communication theorists favor a simple, modern, and economical style of design (Kostelnick "Typography" 21; Tufte 13; Barton and Barton "Simplicity" 22; Welford 4). This plain style of visual design that promotes clean, quiet, accurate data and text displays is consistent with the clear, unadorned, unambiguous writing instructors typically advocate in business and technical writing.

Edward Tufte and A.T. Welford are among the most vocal proponents of clear designs. Explaining that visual perception prefers **economy**, Welford argues that visual designs should also be economical, matching the perceptual needs of the viewers (8). Tufte promotes the display of quantitative information in a similarly economical and excruciatingly clean manner. In order to make "graphics reveal data" (13), charts and graphs should avoid extra "chartjunk and data ink" (93-108). For example, while it may be fun for students to place a graph of price change in a dollar sign (see Figure 13) and to embellish the graphs in creative and playful manners, students should be restrained from following the popular media's penchant for cutesy data and textual displays, for often such displays violate the principle of clarity. Professional communicators promote clear writing; similarly business and technical writing instructors should promote clear designs, designs that are free of the "noise" of extraneous material so that the visual forms are presented economically and accurately (Welford 12). "Chartjunk," defined by Tufte as "conventional graphical paraphernalia" added to graphics that is usually redundant, busy debris (107), should be eliminated based on the very fundamental notion of rhetorically appropriate clarity.

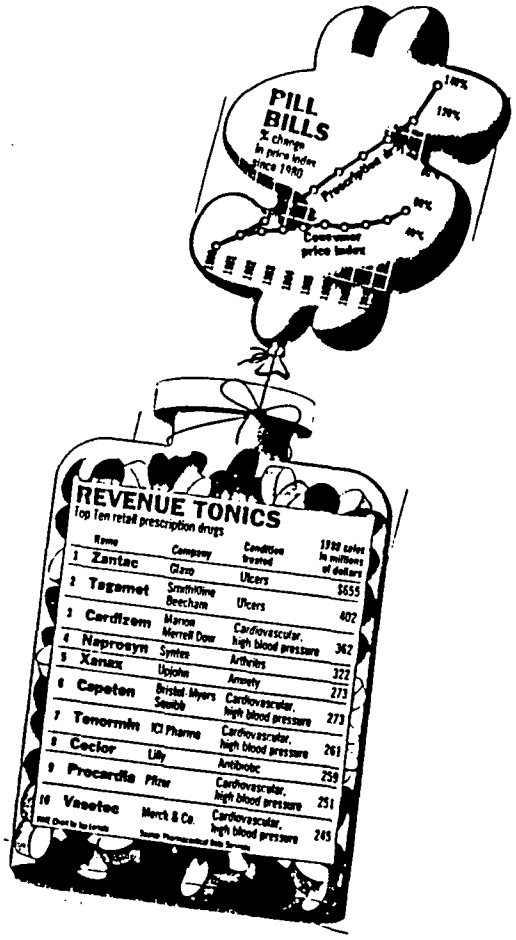



**Figure 13: Popular Media Visual**
(Gorman 57)

One could argue that this particular visual design in Figure 13, though not consonant with Tufte and Welford's guidelines, is rhetorically appropriate for the intentions of the publishers of Time Magazine and for their readers. Clarity and simplicity are, after all, rhetorical and aesthetic matters. The dynamics of each design problem create unique definitions of clarity. For the readers of Time this graph may be perfectly clear. However, if this appeared in a technical report, readers would probably be dismayed at the complexity and playfulness of the visual. Student writers need to consider the variables of their rhetorical problems

when evaluating the clarity of their designs.

Maintaining a balance between completeness and conciseness is, admittedly, one of the most demanding tasks facing student authors. Especially when writing to multiple audiences, students must determine the amount of information needed by different readers without skimping in some areas or being redundant for other audiences. The complex audiences described by Mathes and Stevenson consist of primary readers who will make decisions based on the information and secondary readers who will carry out those decisions and who will, therefore, be affected by the document (32). Designers, like writers, need to strike a balance between too much information for the primary audience and not enough information for the secondary audience. This is often a difficult balance to strike. Decision-making executives want only enough information on which to make their judgements. Those readers who will carry out instructions or recommendations need more detail. The text and design must be as complete as the audience needs it, while also being as economical (Welford 4) as possible.

Graphic tools can help students create such a delicate balance for graphs, charts, tables, illustrations, pictures summarize much information quickly and efficiently. Likewise, headings, bullets, and enumerated lists reveal the hierarchical organization of the text to readers so they can

access just what they need (Rude 65). The style of the piece, then, is tempered by other rhetorical variables such as audience, purpose, subject, and author image.

This kind of balancing act is a skill students need to develop in their visual designs as in their linguistic messages. The Bartons outline a scheme of simplicity in design that is inherently rhetorical. "Pragmatic simplicity" highlights the role of the viewer by insisting that there can be no meaning without a viewer/reader ("Simplicity" 15-17). Pragmatic simplicity encompasses both "rhetorics" of a document: the verbal and visual. Such a notion helps instructors help their students find the appropriate and most effective level of clarity and plain style in their textual and graphic systems. Barton and Barton explain this balance the following way:

> If there are no ideal solutions, it is, nonetheless, possible to determine provisionally the best available accommodation in a given design situation. And that's the simplest a visual representation can be. (23)

Again, discussions of context surrounding documents written in BTC courses provide a springboard for considerations of visual designs. Conversely, visual designs can open doors of discussion and pathways of illustration for the principles instructors already include in their syllabi. Clarity,

completeness, conciseness, and simplicity all are affected by the visual design of a document and, in turn, affect the visual rhetoric of the document.

## AUDIENCE APPROPRIATENESS

Such contextual effects reveal the nature of the transaction between the subject-matter, author, and audience. As discussed in Chapter 2, authors interact with the subject-matter in various ways, altering the information to match their intentions and changing intentions as a consequence of the subject-matter. Similarly, readers are affected by the text, but also bring certain expectations and experiences to the text that affects their perception and interpretation of the document (Schumacher 22).

Returning for a moment to the notion of balance in BTC documents when addressing multiple audiences, just as reader expectations can affect the visual and verbal message, so reader purpose affects what kind of visual design is appropriate (Waller "Four Aspects" 221). These guidelines are founded in a notion known as schema theory. As described in Chapter 2, schema theory claims that readers process information better if they can anticipate and form a familiar mental image from the start and then relate new material to

that image. Visual clues help establish reader expectations and can initiate reader schemas.

Visual elements can help develop and maintain a balance especially in a document intended for multiple audiences. Headings, document flow-charts, shaded boxes, bullets: these elements help emphasize and condense parts of the text directed at, for example, executives, much the same way executive summaries highlight the gist of the text. The hypothetical Martha in Chapter 1 relied heavily on graphic cues during her initial scan of the proposal to pick out essential information quickly. These "relational functions" (Kostelnick "Readability" VC-47) impose an organization on the text and show that organization to readers. Through graphic cues like headings, icons, bullets, color, and enumeration that illuminate the relationships between text, writers can enhance audience understanding (Duin 98). Visually prominent structures like these allow readers who are seeking only a cursory overview or certain aspects of the information to locate what they need quickly and thoroughly. Visual cues provide rhetorical control, guide readers through the text to important, relevant subpoints, and highlight textual relationships (Bernhardt 67).

Other visual elements also address readers' needs. If readers need to see the "big picture," graphs and charts reveal a holistic view of data and their relationships (Tufte

13). In general, readers can comprehend the information better if they cannot only read it but also see it (Bertin 1, Bernhardt 66)--see relationships between data and text--if they can see trends in data in line graphs, time-series displays, and other quantitative data displays (Tufte 15); if they can see associations between characters through graphs, matrices, flow charts, and page layout (Rude 71); if they can see the connection between textual sections through headings, bullets, icons (Benson 78); if they can see examples, people, products, and concepts through pictures, illustrations, diagrams (Hartley 80). Students should, therefore, structure the document visually to help busy readers find what they need in the document, while maintaining a level of detail required by multiple audiences, some of whom must make decisions based on the information and some of whom must implement the recommendations or results. By carefully structuring the organization and visual cues in a text, writers can signal readers' existing knowledge about the information or the display of the information.

**Cohesion**

As they signal readers to individual chunks of text, students can tie the document together through visual elements as well. Cohesive devices such as transitions also guide

readers through the text. Transitions provide textual information about how different sections or paragraphs relate to one another, thereby explicitly associating each section to the previous one and helping to create a cohesive document. When writers do not tell readers the relationships between chunks of text, they risk having readers make no relationships or the wrong connections. Without transitions as guides, readers must labor to make their own connections. Document authors can help guide readers through the text by using visual tools. Various visual elements supply cohesion to the document. Consistent typefaces, page layouts, rules, color, icons, and logos contribute a visual uniformity to the entire work. Similarly, headings guide readers through the text and tie sections together. Headings stand as signposts that, like road signs, direct readers through the curves, turns, and straight-a-ways of the text. Headings help readers anticipate what is to come and to prepare for it. Headings provide an overall, skimmable outline that readers can follow as they read or can turn to if they get lost--sort of a visual roadmap through the text.

Headings can be taught through several familiar principles, not the least of which is cohesion. They also reinforce the notion of parallelism. The key words or phrases used in headings should be consistent--parallel--throughout the piece. Parallel signposts enhance the cohesion of the

document and make it more readable by forecasting the upcoming information.

## Forecasting

Schema theory also implies that forecasting through textual or visual ways will help instantiate readers' prior knowledge (see page 19 in Chapter 2). Forecasting statements often begin paragraphs or sections to tell readers what to expect organizationally. They set up expectations in the audience and provide a cognitive and verbal framework around which readers can organize the information in the text. Headings, lists, numbers, and other design elements also help prepare the audience for the material. In particular, headings can activate schemas by clueing readers to the category that the information belongs. Indented explanations, pictures, flow charts, and icons provide initial hierarchy of information to readers. Student authors can enhance their audience's ability to read, understand, and remember by incorporating useful visual cues throughout the text.

These visual cues are tempered by additional rhetorical considerations. As stated above, the principles of clarity and plain style help determine how much detail a student should include in the visual. Such minimalist guidelines suggest a graph or chart of simple, "just-the-facts-ma'am"

design. However, this may not always be appropriate to the audience. Experts with a great deal of prior knowledge will understand more complex data presented without much explanation. Novices, on the other hand, will need more information in the graph or chart to supplement their limited prior knowledge. The amount of detail should be enough to activate readers' schema related to the material. Headings, captions, and other visual conventions will aid this activation and aid readers' comprehension of the data by fulfilling their expectations of the visual (Kostelnick "Systematic Approach" 36).

Furthermore, the principle of forecasting applies to the process of including visual aids such as graphs, charts, matrices, pictures, and the like. Just as writers want readers to comprehend text quickly, so should writer/designers want their readers to comprehend visuals quickly and accurately. Therefore, the writer should introduce all visuals in the text and explain their significance. Because the visual aid often contains detailed data or material, the writer should explain to what category the data belong so readers can interpret the data accurately and appropriately (Kent ET-129). Left to their own devices, readers may at best miss some of the relevance, at least not interpret it at all, or at worst misinterpret the data. Forecasting, then, is a

useful and teachable textual principle as well as an applicable visual strategy.

**Emphasis**

Forecasting helps prepare readers for upcoming material. Student authors can also address different readers by illustrating the hierarchical arrangement of the information. Visuals can often direct readers' attention to what are the most significant portions of the document, to what is the essential message (Burton 40; Kostelnick "Visual Rhetoric" 77). Design devices used on textual elements can direct readers to vital information via headings, lists, bulleting, shading, graphs and charts, etc. For example, a list of due dates would be lost in the middle of a text, but if listed and bulleted, the dates become prominent and emphasized. The Gestalt principle of good figure (see pages 16 and 17 in Chapter 2) says that a shaded box surrounding a table of contents sets it off from the standard text. Because of its contrast with the background, the table will appear more prominent and thus receive more emphasis than information buried in a paragraph. As stated before, graphs and illustrations holistically convey information in a manner that is concise, yet conspicuous. Bolding, italics, underlining,

and variations typeface and font punctuate the text in a way grammatical punctuation cannot.

When highlighting material, students can build hierarchies of messages, thereby sharpening the point of the communication, as Arn Tibbets advises (1). Headings of various levels create a hierarchy between chunks of text, subordinating some information in favor of more compelling material. Carolyn Rude argues that grouping related information together in "chunks" and signaling that meaning through typographic cuing, white space, and headings will increase readers' comprehension (Rude 66). Research in information design is showing that readers remember information better if visual elements in documents support a hierarchy that signals the relative importance of the information (Benson 77; Hartley 51). Students should consider how they can focus readers' attention on critical information using the choices available in document design.

## CONCLUSION

Instructors can teach visual communication in business and technical writing courses without overloading their already bursting syllabi. Using rhetorical strategies and principles currently taught in textbooks and classrooms, BTC instructors can incorporate visual rhetoric into the course, and as a

desirable consequence, reinforce the rhetorical principles and strategies of process, conventions, correctness, ethics, tone, clarity, audience appropriateness, cohesion, forecasting, and emphasis inherent in professional communication.

Chapter 4 will outline some classroom activities and lessons to help teachers integrate visual rhetoric into their courses, to teach rhetorically sound visual communication to their students, and to enhance the overall rhetoric of professional communication documents.

# CHAPTER 4

## PEDAGOGICAL METHODS FOR INCORPORATING VISUAL RHETORIC INTO THE PROFESSIONAL COMMUNICATION COURSE

Because they so greatly influence the rhetoric of any document, visuals cannot be divorced from the verbal text of a piece. It follows, then, that visual communication instruction cannot be separated into a discrete unit or lesson, but instead must be incorporated into the entire professional writing course. Chapters 2 and 3 introduced and argued these propositions. Chapter 4 will examine just how BTC instructors can accomplish this merging of words and graphics.

Dividing document design education into two approaches, Killingsworth, Pike, and Booker outline an elemental approach and a functional approach. Their elemental approach focuses on the graphic devices available to the professional communicator (VC-33). Such an approach teaches students what tools are available and how to mix their visual pallet to create different designs. The functional approach "concentrates on the different functions of text." A functional approach is generally used in the "heat of the writing process" as writers make decisions about the presentation of their information (VC-33). Being situational,

the functional approach accords well with the contextual and nature of visual rhetoric defined in Chapters 2 and 3.

This bipartite division of visual communication education provides a useful guide for professional communication instructors. After all, before students can apply visual artifacts to solve a rhetorical problem, they must know which artifacts are available to them. But, as this thesis has argued, students must evaluate the rhetorical impact and effectiveness of visuals in their documents. The two approaches are complementary, and they are not completely exclusive, as this chapter will show.

## ELEMENTAL INSTRUCTION

In order to talk about visual communication, students and teachers need a common vocabulary. Unfortunately graphic design jargon is just as mystifying as professional communication jargon is to outsiders. Fortunately, though, Charles Kostelnick has created a scheme that quickly translates graphic design terminology into language understandable by verbally-oriented instructors and students. In a 1988 article, Kostelnick outlined his "12-Cell Matrix of Visual Communication" that offers a scheme of visual communication vocabulary specific enough to describe professional communication design. Reproduced in Figure 14,

the matrix divides graphic communication elements into three coding modes and four levels. The modes describe the type of graphic element:

- Alphanumerical/Symbolic: "raw materials" consisting of letters, words, and symbols
- Spatial: arrangement of text on the page
- Graphic: iconic representations, rules, shapes, colors, etc. ("Readability" VC-44)

Writers manipulate these modes on four levels:

- Intra-textual: governs the "local" design of text, including typeface, spacing between letters and words, and punctuation
- Inter-textual: controls the relations between textual elements such as headings, justification, and bullets
- Extra-textual: manages elements that are independent from the text like logos, graphs, and pictures
- Supra-textual: encompasses the "global" organization of the piece, including pagination, arrangement of charts and graphs, page shape, color, and size ("Visual Rhetoric" 79-80).

Students and teachers can use Kostelnick's matrix to help organize discussions of visual elements in their documents. Using for the most part, vocabulary found in business and technical communication courses and textbooks, the matrix can be handed out to students and discussed quickly, thus offering

an efficient and effective means of learning the elements that make up document design.

| | Alphanumeric/ Symbolic | Spatial | Graphic |
|---|---|---|---|
| Intra | 1<br>variations in style, size, weight of letters, numbers, symbols | 2<br>local spacing between textual units: picas, CPI, kerning | 3<br>marks: punctuation, underscoring; iconic forms of letters |
| Inter | 4<br>levels of headings; letters, numbers signaling textual structure | 5<br>line endings; indentation; matrices, lists, tree configurations | 6<br>bullets, icons; line work, arrows; geometric forms on charts, diagrams |
| Extra | 7<br>legends, captions, labels; numerical description of data | 8<br>plotting of data on X-Y axes; viewing angle, size of pictures | 9<br>tone, texture, shading of data displays; details on pictures |
| Supra | 10<br>section titles, numbers; page headers, tabs; pagination | 11<br>placement of extra-textuals in text; page breaks, section breaks | 12<br>marks, icons, color, line work, logos unifying pages & sections |

**Figure 14: Kostelnick's 12-Cell Matrix of Visual Communication** ("Systematic" 33)

Kostelnick explains the usefulness of his scheme this way:

> The four levels and three coding modes on the matrix describe a flexible visual vocabulary which the

> writer/designer can adapt to each communication problem. The rhetorician can use this vocabulary for various purposes--to create emphasis, stimulate reader interest, guide the reader through the text or to the most significant information, enable the reader to compare and contrast data, persuade the reader to take action--in short, for many of the same reader-oriented goals writes achieve with language. (82)

The scheme isn't all talk, though. By combining some elements from a few or all of the cells, students can create different visual messages in documents. The matrix serves as the palette students need in order to paint a visually-informative communication.

Beyond the elemental level, however, Kostelnick's matrix also provides a scheme around which students and instructors can discuss the rhetorical implications of various designs on the entire document. The matrix, then, bridges elemental approach to learning to the functional approach that stresses the situational nature of visual design.

## FUNCTIONAL LEARNING

Up to this point, this thesis has emphasized three main characteristics of effective visual rhetoric in professional writing courses:

1. Visual design must be integrated throughout the course
2. Visuals and their instruction must be rhetorically controlled and fully contextualized
3. Documents should be designed using a rhetorical-problem approach

Taking a functional approach once students have become familiar with the vocabulary, instructors can truly begin to integrate visual communication into their verbal instruction by looking at the various functions and purposes of documents typically written in professional writing courses perform. After all, it is the overall, global rhetoric of the document that directs the verbal and visual choices in effective communication. Once students have determined and analyzed the document's rhetorical variables, they can begin to make sound verbal and visual decisions.

But to learn that rhetorical problem-solving, students need to familiarize themselves with the kind of graphical choices and combinations typical of professional documents. Kostelnick suggests an inductive examination of existing

documents to help students learn the conventions and possibilities of professional communication ("Visual Rhetoric" 83). Inductive analysis is the key to incorporating visual communication into the BTC classroom for it offers a sound pedagogical method for teaching rhetorical analysis of both the visual and verbal messages of a document. Additionally, analyzing "real world" documents lets students discover for themselves the actual design practices in business and industry.

**Inductive Investigation**

Analytic exercises in which students look at actual documents and analyze their visual and verbal systems can be facilitated using Kostelnick's matrix as a guide. Students begin to see how raw materials from the cells combine to form unique visual systems ("Visual Rhetoric" 80). Many instructors currently bring "real world" memos, letters, reports, manuals, etc. for students to examine, looking at the rhetorical effectiveness of the verbal message. Incorporating visual communication into those discussions draws the whole rhetoric of the document into the discussion. Kostelnick's matrix provides a systematic way to look at the visual messages and creates an avenue to examine the verbal message.

For example, in Figure 15, the brochure promoting Dow Corning Corporation illustrates visual elements from several cells on the matrix such as:

Cell 1: various typesizes, serifed typeface gives the document a modern, lean appearance

Cell 4: headings are all one level, thus they give no sense of a hierarchy of organization and do not guide readers to really significant portions of the document

Cell 6: bullets set off part of the document, but are not used consistently throughout the piece; rule lines surround headings, possibly interfering with their readability

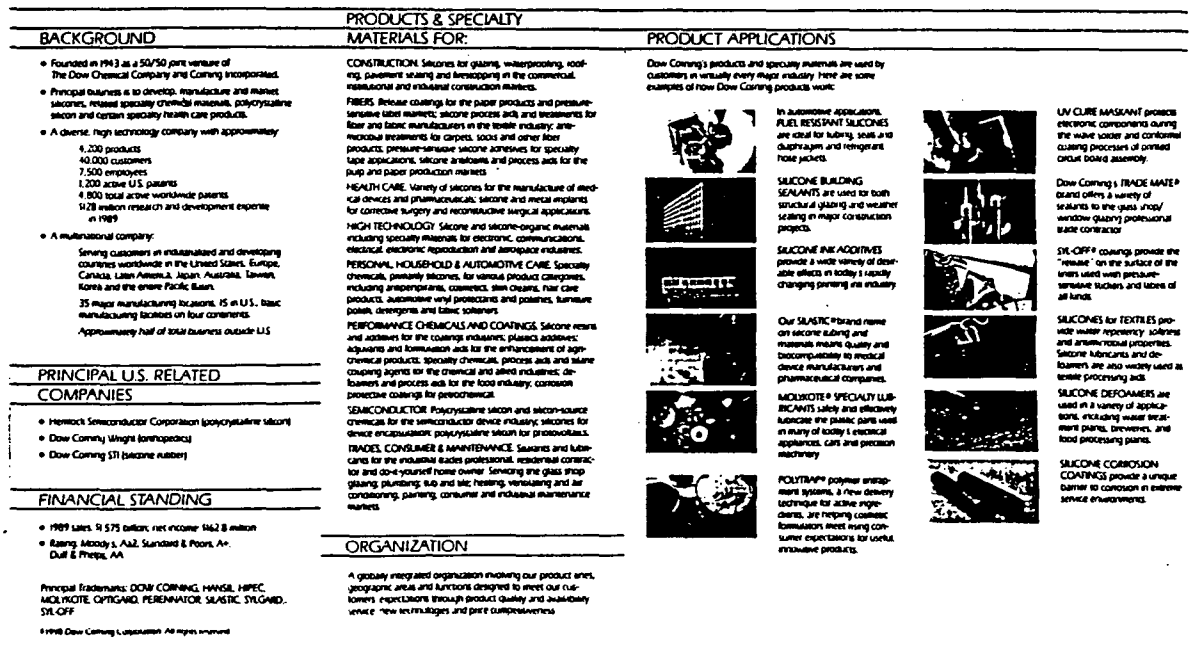
Cell 11: the placement of pictures so close together makes them a little hard to distinguish; the four-panel design makes the brochure easy to handle and display

Analyses like this help students systematically evaluate design choices within the framework of their rhetorical usefulness.

Elizabeth Tebeaux also outlines a heuristic that is not quite as diagrammatic as Kostelnick, but nonetheless provides a way for students and teachers to analyze existing documents. She suggests working these questions into standard audience

and purpose analyses typical of professional writing courses (38). Part of her "graphics heuristic" follows:

- Are the graphics effective? (Is the idea they are conveying clear?)
- Do the graphics contribute to the overall effectiveness of the document?
- How are the graphics used? Do they replace written discourse, or do they supplement it? Is one technique better than the other?
- Are the graphics suitable for the intended audience? (33)



BACKGROUND

- Founded in 1943 as a 50/50 joint venture of The Dow Chemical Company and Corning Incorporated.
- Principal business is to develop, manufacture and market silicones, related specialty chemical materials, polycrystalline silicon and certain specialty health care products.
- A diverse, high technology company with approximately
  - 4,200 products
  - 40,000 customers
  - 7,500 employees
  - 1,200 active U.S. patents
  - 4,800 total active worldwide patents
  - $128 million research and development expense in 1989
- A multinational company:

  Serving customers in industrialized and developing countries worldwide in the United States, Europe, Canada, Latin America, Japan, Australia, Taiwan, Korea and the entire Pacific Basin.

  35 major manufacturing locations, 15 in U.S., basic manufacturing facilities on four continents.

  *Approximately half of total business outside U.S.*

PRINCIPAL U.S. RELATED COMPANIES

- Hemlock Semiconductor Corporation (polycrystalline silicon)
- Dow Corning Wright (orthopedics)
- Dow Corning STI (silicone rubber)

FINANCIAL STANDING

- 1989 sales: $1.575 billion; net income: $462.8 million
- Rating: Moody's, Aa2; Standard & Poors, A+; Duff & Phelps, AA

Principal Trademarks: DOW CORNING, HANSIL, HIPEC, MOLYKOTE, OPTIGARD, PERENNATOR, SILASTIC, SYLGARD, SYL-OFF

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PRODUCTS & SPECIALTY MATERIALS FOR:

CONSTRUCTION. Silicones for glazing, waterproofing, roofing, pavement sealing and ferrogasping in the commercial, institutional and industrial construction markets.

FIBERS. Release coatings for the paper products and pressure-sensitive label markets; silicone process aids and treatments for fiber and fabric manufacturers in the textile industry; antimicrobial treatments for carpets, socks and other fiber products; pressure-sensitive silicone adhesives for specialty tape applications; silicone antifoams and process aids for the pulp and paper production markets.

HEALTH CARE. Variety of silicones for the manufacture of medical devices and pharmaceuticals; silicone and metal implants for corrective surgery and reconstructive surgical applications.

HIGH TECHNOLOGY. Silicone and silicone-organic materials including specialty materials for electronic, communications, electrical, electronic reproduction and aerospace industries.

PERSONAL, HOUSEHOLD & AUTOMOTIVE CARE. Specialty chemicals, primarily silicones, for various product categories, including antiperspirants, cosmetics, skin creams, hair care products, automotive vinyl protectants and polishes, furniture polish, detergents and fabric softeners.

PERFORMANCE CHEMICALS AND COATINGS. Silicone resins and additives for the coatings industries; plastics additives; adjuvants and formulation aids for the enhancement of agrichemical products; specialty chemicals, process aids and silane coupling agents for the chemical and allied industries; defoamers and process aids for the food industry; corrosion protective coatings for petrochemical.

SEMICONDUCTOR. Polycrystalline silicon and silicon-source chemicals for the semiconductor device industry; silicones for device encapsulation; polycrystalline silicon for photovoltaics.

TRADES, CONSUMER & MAINTENANCE. Sealants and lubricants for the industrial trades professional, residential contractor and do-it-yourself home owner. Servicing the glass shop glazing, plumbing, sup and site, heating, ventilating and air conditioning, painting, consumer and industrial maintenance markets.

ORGANIZATION

A globally integrated organization involving our product lines, geographic areas and functions designed to meet our customers' expectations through product quality and dependability service new technologies and cost competitiveness.

PRODUCT APPLICATIONS

Dow Corning's products and specialty materials are used by customers in virtually every major industry. Here are some examples of how Dow Corning products work:

In automotive applications, FUEL RESISTANT SILICONES are ideal for tubing, seals and diaphragms and refrigerant hose jackets.

SILICONE BUILDING SEALANTS are used for both structural glazing and weather sealing in major construction projects.

SILICONE INK ADDITIVES provide a wide variety of desirable effects in today's rapidly changing printing ink industry.

Our SILASTIC® brand name on silicone tubing and materials insures quality and biocompatibility to medical device manufacturers and pharmaceutical companies.

MOLYKOTE® SPECIALTY LUBRICANTS safely and effectively lubricate the plastic parts used in many of today's electrical appliances, cars and precision machinery.

POLYTRAP® polymer entrapment systems, a new delivery technique for active ingredients, are helping cosmetic formulators meet rising consumer expectations for useful, innovative products.

UV CURE MASKANT protects electronic components during the wave solder and conformal coating processes of printed circuit board assembly.

Dow Corning's TRADE MATE® brand offers a variety of sealants to the glass shop/window glazing professional trade contractor.

SYL-OFF® coatings provide the "release" on the surface of the liners used with pressure-sensitive stickers and labels of all kinds.

SILICONES for TEXTILES provide water repellency, softness and antimicrobial properties. Silicone lubricants and defoamers are also widely used as textile processing aids.

SILICONE DEFOAMERS are used in a variety of applications, including water treatment plants, breweries, and food processing plants.

SILICONE CORROSION COATINGS provide a unique barrier to corrosion in extreme service environments.

**Figure 15: Typical brochure for inductive analysis (Dow Corning n.p.)**

Both Kostelnick's and Tebeaux's analyses emphasize the contextual and rhetorical nature of visual communication, particularly the realistic context of visuals in actual practice. Professional writing instructors can include similar questions in their audience and purpose analyses, thereby encouraging students to consider graphics as an integral part of the rhetorical puzzle of all documents.

## Conventions

Inductive analyses such as these also help students learn conventions that govern the visual presentation of data and information. Writer/designers need to know the basic conventions of graphic displays in order to use them accurately. As was explained in Chapter 3, correctness in visual design is critical and much of that correctness is achieved by adhering to certain design conventions. Conventions also help readers comprehend the material by activating their schemata for the graphic. By asking students to describe how charts, graphs, headings, bullets, typography, etc. are used in actual documents, instructors can let students teach themselves about graphic conventions. Additionally, teachers can save some precious class time and better reinforce students' learning by presenting design cases for student analysis. For example, Figure 16 presents a page

from an annual report from Illinois Power Company that illustrates several fairly conventional data displays. In their analysis, students might note that the Y-axis is longer than the X-axis. Discussions might determine whether this is good design or poor. Efficient design promoted by Tufte (and explained in Chapters 2 and 3) is apparent in the graphs that lack any axis lines. Instead, they include unobtrusive dotted lines to help guide readers' eyes. The title of the graphs and their legends are clearly marked and are placed in fairly conventional locations. The actual values are indicated directly above the graph lines and bars.

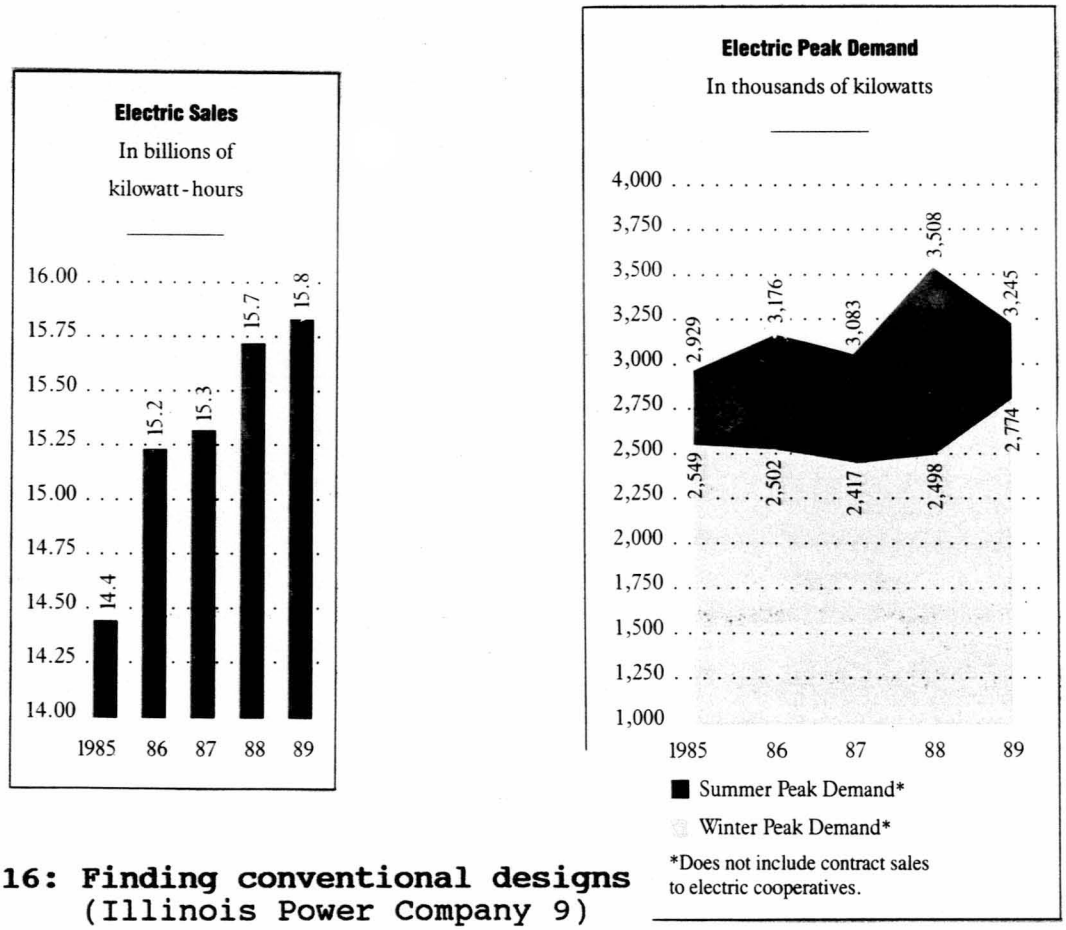


**Figure 16: Finding conventional designs** (Illinois Power Company 9)

Discussions of rhetoric can also stem from these analyses of conventions. Often writers will choose to break those conventions in order to achieve a different rhetorical purpose. When students find aberrations in graphical conventions as practiced in professional communication, they can discuss the rhetorical consequences and effectiveness of those deviations. For instance, in Figure 16 the shortened X-axis and also the values marks that are turned to a "landscape" orientation are unconventional designs for area and column displays. Students can discuss why the authors chose to break the conventions here--perhaps horizontal value figures would be too confusing with the other figures. Instructors may want to present cases like this one to stimulate visual thinking and discussion of graphic design.

## ACTIVITIES TO STIMULATE VISUAL THINKING

Formal and informal analyses give students opportunities to look at visuals as they appear in business and technical documents and also give them practice evaluating the rhetorical effectiveness of their own designs. However, cases are just one way to present visual rhetoric to students. Other activities let students compare different designs, practice making graphs, charts, tables, and illustrate

comprehension of principles that apply to both visual and verbal systems.

**Computers**

While stressing the necessity of contextualizing all activities, Barton and Barton encourage the use of computers in the professional writing classroom, especially for creating visual designs. This way instructors can emphasize "visual basics" rather than mechanics thereby using classroom time more efficiently ("Toward a Rhetoric" 141). More and more BTC programs are moving the courses into the computer lab. As a consequence they are increasing the number of visual tools available to students such as rules, columns, typography, etc. While introducing new opportunities for visual communication in their documents, visually capable programs also open new doors for rhetorical discussion and adaptation.

For example, students can try several different typefaces and highlighting features in one segment of text to see the effect of tone on a document. Walker, Smith, and Livingston studied the appropriateness of typefaces for different situations. They concluded that even novices recognize certain characters in typefaces that make them more or less appropriate to certain concepts (30). A sans-serif type is considered more modern than one with elaborate serifs. A

sans-serif type may be more appropriate to a technological innovation than a serifed type. However, serifed typefaces are generally considered more readable.

Chapter 3 illustrated some "personalities" certain typestyles possess; students need to balance the personality they wish to project through typeface with the demands of readers. Sometimes, though a sans-serifed typeface like Helvetica may be better suited to the image the author wants to project, a serifed typeface such as Palatino may be better for the bulk of text. Readers will be better able to read a large section printed in Palatino than one printed in Helvetica.

Another way of typographically influencing the tone of a document is demonstrated by Kostelnick in "The Rhetoric of Text Design in Professional Communication." While considering the relationship of the author to her audience and the perceptual context, writers can vary the meaning as well as the voice of a statement simply by altering some intra-textual variables, as in Figure 17.

Please check all of the pressure valves before you begin.

**Please** check all of the **pressure valves** before you begin.

Please check all of the pressure valves **before** you begin.

**Please check all of the pressure valves before you begin.**

> Please check all of the pressure valves **BEFORE** you begin.

**Figure 17: Varying the message through visual means** (Kostelnick "Rhetoric of Text" 191)

By visually highlighting or embedding certain parts of the message, Kostelnick is able to convey different meanings and different voices from

> a polite request to an authoritarian command...for example, boldfacing the word "please" makes the command seem like an emotional plea...[and] embellishing the words "all" and "before" suggests some potential (or past) negligence on the reader's part. (190-191)

In the classroom instructors can encourage students through similar activities to look at the perceptual and rhetorical consequences of various type, highlighting, underscoring, and page layout available at a keystroke on computers.

Because of their readily available typefaces, columns, rules, bullets, and graphs, computers broaden the possibilities of page layout in professional documents--even in the professional communication classroom. Students can manipulate the text with typefaces, boldface, italics, underlining. Through such textual cuing, writers can signal readers to important sections and help them locate information more efficiently. Similarly, column formatting, kerning

control, graphical displays and the like help students use space and type to signal the organization of a document especially in resumes and instruction manuals and to foreground the distinctions between main and subordinate ideas (Rude 67). Waller also stresses the importance of typographical cuing in "Text as Diagram: Using Typography to Improve Access and Understanding." Layout, according to Waller, not only reveals the structure of the text to readers, but also serves as part of the "writer's repertoire of syntactic cues for giving a discourse direction and coherence" (150). When using computers, students' repertoires are expanded to the use of larger typefaces, columns, landscape orientation, etc. Instructors can support and encourage students to seek creative design solutions to documents such as resumes and process directions that benefit from careful visual management.

## Communication Principles

Many activities used in classrooms now can be modified to include a visual perspective. For example, topic sentences and forecasting statements give readers verbal cues about upcoming information. As explained in Chapter 2, signalling readers verbally tells them what to expect, thereby activating appropriate schema. Visual cues can also help prepare readers

to process information. For example, the following directions seem rather obscure without a forecasting statement, topic sentence, heading, or icon:

> The procedure is actually quite simple. First you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity of this task in the immediate future, but then one never can tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will have to be repeated. However, this is part of life. (Bransford and Johnson 400)

Schema theory tells us that without some reference to **washing clothes**, readers will have trouble comprehending the directions (Huckin 94). However, by signalling through visual cues such as a heading and/or an icon, picture, illustration or other access structures, writers can instantiate readers schemas so they can better comprehend the information (Schumacher 24). Bulleting, textual highlighting, and other page arrangements can increase readers' understanding of the text as well.

Presenting students with these amorphous directions and asking them to redesign them to activate reader's prior knowledge reinforces the linguistic necessity of textual cuing and the visual power of graphical cuing.

Infinite variations on activities are possible. When discussing ethics in professional communication, instructors can ask students to design two graphs for different rhetorical purposes and to manipulate the data to favor their case. For example, in Chapter 3, two graphs of college enrollment show vastly different situations. One showed little change, a steady enrollment period. The other dramatize a precipitous decline in enrollment. While perhaps rhetorically effective to spur a board of regents to action, the dramatic graph is incorrectly designed with the X-axis much shorter than the Y-axis. It is, therefore, ethically inappropriate. Having students design such graphs illustrates the danger of

inaccurate data displays and promotes ethical communication practice.

To incorporate visual communication effectively and efficiently into business and technical writing courses instructors can draw on their experiences and classroom activities, computer programs, and existing documents to illustrate sound verbal and visual rhetorical principles. Many authors cited at the end of this thesis detail additional activities and assignments. However, these few examples illustrate the basic notion behind a merging of visual communication instruction with verbal communication instruction: many of the same principles and strategies currently used in the BTC classroom are equally suited to visual communication. Visual rhetoric can be included by adding additional discussions and analyses that stress the visual aspect of documents and visual processing of readers.

## ASSIGNMENT SEQUENCING IN VISUALLY-ORIENTED COURSES

In addition to activities, instructors can bolster visual rhetoric through assignment design and sequencing. Many of the kinds of documents typically assigned in professional writing courses readily lend themselves to visually-informative structures. Resumes are particularly graphic documents, as are process papers. Proposals and reports often

include charts, graphs, and illustrations. Letters and memos can be formatted to convey information at a glance. Requiring that students consider and include visual elements in all their assignments again reinforces the symbiotic contributions of text and graphics.

Asking students to include visual rhetoric in their documents' rhetoric is a relatively simple and minimally useful pedagogy. However, visuals can provide a scheme to solve a much bigger dilemma in professional writing: how to sequence assignments in business and technical writing courses. Much controversy has arisen over the "right" sequence for freshman composition courses. Discussions of the sequence of assignments proliferate in composition journals. Yet little has been written about the most effective sequence for professional writing courses. Which paper do teachers assign first? What skills should students learn first in the writing/design process? Which assignment or skills should be presented next? The jury may deliberate for some time on this point; however, a developmental approach to teaching visual communication may help instructors begin to sequence courses and assignments.

By considering the visual complexity of documents, instructors can arrange assignments that build on visual skills as well as verbal skills in a systematic manner. For example, beginning a business writing course with resumes and

letters of application immediately drives home the necessity and value of visual design in conveying information to a well-defined audience. Variables such as typeface, layout, rules, bullets, paper weight and style, print quality are essential considerations in resumes. Their designs do not have be elaborate. In fact, even following conventional designs for resumes still teaches and reinforces many sound and useful design strategies. Such an introduction encourages students to analyze design conventions and consider design variables from the start without overwhelming them with complex design problems. Through such critical graphic design, resumes introduce some visual tools, thereby teaching them the elements of graphic design and establishing its credibility in a rhetorically-based discourse.

Once students have begun to understand the importance of visual communication, instructors could then assign a sales campaign that asked students to create a letter and brochure. Brochure design uses other visual tools such as page shape, columns, color, pictures. In such a way, brochure design builds on the visual principles and practices introduced in resume design. Memos and letters can be assigned that reinforce textual access structures such as bulleting, listing, boldfacing. These designs, while critical to the rhetorical message and reader comprehension, are more graphically subtle than brochures and resumes, and therefore

teach students to use a broader and less prominent array of visual elements.

Proposals and reports can include all the elements practiced to this point and can introduce data displays. Graphs, charts, tables, illustrations, and icons can be added to the typefaces, rules, columns, and bullets learned in previous assignments. Finally, students can synthesize their new-found visual acumen in a process paper that relies heavily on graphic cuing to help readers follow and comprehend directions. Page shape and design can be taught by asking students to consider how readers will use the document, e.g. a computer guide that stands up on the table, a bicycle tuning manual that hangs off the handle bars.

Sequencing assignments through such a developmental process adds some rationale to their order and helps students build graphical abilities. It brings visual communication to its rightful place alongside verbal rhetoric. Incorporating visual rhetoric into existing activities and assignments gives BTC instructors the power and ability to include an essential communication skill into their already crowded syllabi.

# CHAPTER 5

## CONCLUSION AND CALL FOR RESEARCH

Throughout, this thesis has argued three main propositions:

1. Visual communication is an integral part of the rhetoric of professional documents
2. Visual rhetoric needs to be taught in professional communication courses
3. Visual rhetoric can be incorporated into business and technical communication courses through familiar rhetorical and compositional principles common to textual instruction.

For harried professional communication instructors, the last proposition is the most salient. Though many BTC instructors have had little design education, they can, nonetheless, incorporate visual communication into their classrooms simply by adopting a rhetorical approach cognate to instruction in BTC courses. Assignments and activities employed by teachers now can easily be modified to reflect a sensitivity to visual rhetoric. Principles of composition and communication such as forecasting, clarity, tone, conventions, and organization cross the boundaries of verbal rhetoric and apply equally to visual rhetoric.

Visual rhetoric also accords with the process approach prevalent in business and technical writing. A contextualized visual approach emphasizes not the graphic product--the chart, graph, or page layout--but the rhetorical appropriateness achieved through careful planning and drafting, meticulous revision and editing.

Theoretically, visual rhetoric is bolstered by not only rhetorical theory, but also perception theory and cognitive psychology. Perception and thinking are inherently visual. This concept carries much weight for writers as well as readers. Readers process information visually and so therefore need documents that enhance their visual thinking. Writers need to design discourse that facilitates readers' visual thinking. Also, they can use visual thinking to help organize information for themselves. Plotting out arguments and instructions visually in information maps matches writers' thinking and helps them create more effective documents.

Research-validated theory, unfortunately, may be the weak link in this pedagogical chain. Barton and Barton lament the heavy reliance on intuition in visual rhetoric ("Trends" 116). Instead they call for "systematic research validation" that contributes to sound theoretical frameworks ("Toward a Rhetoric" 142). As visual rhetoric comes to the fore as a powerful force in business and technical writing, researchers

and instructors must seek increasingly sophisticated research to support their teaching.

Just a few areas desperately in need of research are

- Ethnographic studies to determine the kind of visual communication practiced in business and industry. To teach professional communication effectively, instructors must know how professionals communicate.

  Ethnographic studies reveal the practices of "real world" writers; this information can then be passed to students, preparing them to write in their careers.

- Reader-response and comprehension studies specific to professional communication. Research in psychology and reading theory have explained the reader's role and cognitive processing of many kinds of writing. However, more research specifically in professional communication would, again, help teachers better understand how readers process visual and verbal information. As well, such research would provide more evaluation standards by which student writers can assess their designs and can justify their design decisions.

- Pedagogical theory and application of visual rhetoric. Teaching theory and techniques used in the classroom need to be tested in a systematic

manner so teachers can practice validated and reliable methods.

- Assignment design and sequencing in BTC courses. Developmental psychology and learning theory can help instructors determine the best assignment sequence that would most benefit students. Research can help explain which concepts and assignments build off each other and help students develop in a systematic way communciation and design skills.
- Desk-top publishing and its impact on professional and visual communication. Computers have revolutionized communication, especially visual communication. Research can answer questions such as What is the extent of their effect in professional writing? How writing and design differ in organizations with computer networks? Does DTP actually improve communication? Is DTP more or less efficient?
- Modern rhetorical theory and its connection to visual rhetoric. Much research in visual communication has focused on its connection to classical rhetoric. Future research should look at the role of visual communication in modern rhetorical and managerial theory such as performativity, deconstruction, social construction, etc.

Lastly, instructors need adequate textbook support. Paul Anderson's textbooks have helped refocus professional communication by stressing the role of audience and visuals in business and technical discourse. Other authors have helped stir this revolution; among them are Paul Anderson, Arn Tibbets, Kitty Locker, and Elizabeth Tebeaux, all of whom include visual design as an inseparable component of professional communication.

## Journey's End

Like Martha, the executive of the hypothetical funding organization, many professionals rely on graphic cues as they quickly read the myriad documents crossing their desks each day.

As computers become increasingly pervasive in organizations, readers increasingly expect professional documents to be designed with reader needs in mind. Because using computers is relatively easy, executives appreciate and expect documents to be comprehensible visually. Writers, too, are finding DTP useful when preparing even memos and letters. Other BTC documents like instruction manuals, reports, and proposals are incorporating more visual artifacts to condense and clarify their information. The proposal in the scenario

with its flashy cover, typeset text, color illustrations, bulleted lists is typical of many BTC documents now quickly produced on DTP systems.

As informal, empirical, and ethnographic research reveals a growing expectation and necessity for visual communication in professional documents, researchers, textbook authors, and instructors must respond by incorporating visual design, visual thinking, visual rhetoric into professional communication courses.

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