



Wong words and visuals

by Irene Wong

Adapted from a presentation to the ASTC(NSW) conference in October 2007.

For some time I've wanted to add visuals to my documents. Not pictures for the sake of them, but ones that would enhance my message. But where to start? I've always known my limitations but didn't know how to overcome them. This started me on what has been a lengthy and fascinating journey. If you are embarking on the same journey, then hopefully you'll be able to learn from my experiences, and then extend them with your own research.

Let me share with you my visual information language (vile) journey

My vile journey

In my journey to reveal a world of visuals I soon found myself facing some new terms such as percepts and concepts. (See page 16 for an explanation.) I must confess that I've tried to avoid articles that refer to linguistics and semiotics because fully understanding visuals from this approach would take more time than I have. Unfortunately, I don't have the luxury of a year or more for a crash course in visuals. The reality is that I want to start producing more visuals now.

Visual or language culture? Choose one!

In our culture we have pushed art and literature apart. As children, we were encouraged to draw, colour in pictures and read picture books. But in high school art became subservient to language. Art was something future graphic designers chose or people who didn't choose the academic stream. I had to focus on the written word, not even accompanied by art, except perhaps for maps in geography, graphs in maths and a diagram or two in science.

In my high school, the art room and the typing room were in the same building, one part of the school that I stopped visiting after my first year there.

My journey is bringing language and visuals back together again. Most articles I am reading are stating that we need to consider them as one.

Forces driving the emerging visual culture

In our developed world we are relying less on language for information and entertainment. Some of the forces influencing this:

- Personal computers
- Games, multimedia, Internet and broadband
- TV
- PowerPoint-type presentations
- Video conferencing
- Graphic computer tools
- Personal digital assistants, phones and MP3s
- Digital Photography

- Impressive visuals in advertising
- More comics and animation (In Australia, Nicki Greenberg (*The Great Gatsby*) and Shaun Tan won best book in the NSW Premier's Literary Awards for *The Arrival*.)
- Movies and DVDs, FlickrR, YouTube and the like
- Less time for tasks at work and at home
- Varying reading skills and experience
- More frequent need for translations
- Shorter attention spans
- Varying and changing writing skills
- The increasing importance of aesthetics.

Why these forces matter

1. Most of these events are still happening and we should be observing how we can exploit them as well as being aware of the impact they are having on the mediums and methods we currently use.
2. We must understand what experiences our audiences have with these forces. If they are not familiar with them then we shouldn't use them or we should use them with care.
3. We need to be aware of the nature of visuals our audiences are exposed to. For example, the use of colour, animation, typography and design. Advertising in hard copy, on TV and online is a good indicator of the changing nature of visuals. The advertising industry supposedly spends money to observe social, technological and other changes.
4. Senior managers in our businesses see the quality, suitability and apparent ease of creating visuals. They expect the same of us without appreciating the time and resources that are vital for producing appropriate, stylish and correct visuals.

Benefits of communicating visually

So much has been written about why we should use visual communication techniques. Research has proven many of the advantages and a number of my references allude to this.

In the "Mapping the steps to visual excellence" web page, "The Award Goes to..." says we can expect four benefits if we take advantage of the power of visualisation:

- Attention
- Motivation
- Comprehension
- Memorability.

These are all very important to us as technical communicators. There is no space to elaborate on these benefits and in any case I am no expert. Clark and Lyons, in *Graphics for Learning*, give you an idea of the issues we need to address in planning visuals.

With the promise of so many benefits we should also think about using visuals where we may not have used them before such as when:

- developing strategies and planning
- presenting conclusions and progress reports, and
- storyboarding scenarios.

Look at the references by Kevin Cheng of Yahoo and accompanying Sun links about using comics for conveying product concepts. The Sun website has comics you can copy to use for such presentations.

Four benefits of using visuals:

Attention

Motivation

Comprehension

Memorability

My goals in studying visualisation

When I started my journey, all I wanted to achieve was to:

- Learn how to recognise where we should use a graphic
- Develop a core set of diagram types we could use for a particular type of document
- Find ideas for diagrams for our consumer website
- Develop a style guide for diagrams
- Be expert enough to edit diagrams.

In retrospect, I liken my initial naivety to that of those people who think that just because they-

- *learnt English at school, they can write a manual or*
- *purchased a DTP program, they are publishers.*

What have I discovered?

It is difficult to just dip into a few references about visual language, pick out some ideas and then produce a visual. As with any expertise you really need to have a body of knowledge underlying even simple tasks. It is also difficult to pass on basic knowledge when you don't understand much more than what you're conveying to others.

I started my journey in my usual manner with Google and Amazon searches. I bought a few books from Amazon, choosing ones that seemed to be often referred to in web articles.

Roll on parity with the USs

I was surprised to find how difficult it was to come to grips with what I was reading. I felt I was not penetrating the topic. It didn't seem relevant to my goals. My initial reading took me into semiotics and I couldn't see the practicalities of it for me.

At one time I said to a colleague that I didn't think that there was going to be much to learn and that we'd just have to try out for ourselves. Down the track we could review what we'd discovered.

I still believe that my advice to just get on and try out

some diagrams was appropriate, but I now know that we can benefit from existing research and that we don't have to rely on our own discoveries and make mistakes in the mean time.

I eventually read two items that made an impression on me. I knew I was finally entering into the world of visual communications.

From Scott McCloud's books on comics I realised how just a few black lines can change the meaning of a drawing. It's a bit scary really but a line just a few millimetres long can suggest movement, the passing of time, rain, sunshine, a mirror or reflexion in water, what to read next and grass. And they can suggest emotions such as anxiety (a few drops of sweat, a twisted brow) or sadness (teardrops or the shape of an eye or mouth).

Another one of my initial reasons for starting this journey was to learn enough to be able to know a bad or misleading diagram when I saw one. I must ensure we don't publish anything that is wrong or open to misinterpretation.

Imagine my concern on realising that a few misplaced pixels can skew the meaning of a diagram. I think that I already understand how the placement of a word in a sentence can change meaning (for example where "only" is placed) but the reality of what can go wrong with a diagram was starting to hit home.

My journey had really begun...

My learning also progressed with Robert Horn's visually rich book that is still helping me understand where I am going. I have known for a while that we learn best when we can relate new facts to existing knowledge and that without that existing knowledge we struggle to learn new content. Horn activated my prior knowledge of written language.

... we learn best when we can relate new facts to existing knowledge ...

Horn compares the traditional analysis of written material with his visual language analysis. He points out that the components of language include words, phrases, clauses, sentences and paragraphs that are all used to build documents. He then points out that visual language also has elements that:

- can be identified and combined
- convey meaning themselves and when combined with words
- are interpreted to have certain meaning(s).

It all began to make sense. I had read about these components in a number of books and articles before finding Horn's explanation. But until now I hadn't understood where they fitted into my visual language education.

I retraced my steps, again dipping into Dondis' book that everyone had spoken so highly of.

I am beginning to understand what Dondis means:

"The visual elements are the basic substance of what we see, and they are few in number: the dot, line, shape, direction, tone, color, texture, dimension, scale, movement. Few though they

may be, they comprise the raw material of all visual information in selective choices and combinations." page 39.

Apart from my vile agenda, which was work-related, this whole topic has woken a long-lost awareness of visuals and a fresh interest in critically evaluating, interpreting, remembering and enjoying visuals around me.

You need to know the lingo

It's not enough to say "That's a good diagram" or "That image doesn't do much for me" or "It isn't what I wanted". (Well, perhaps it is enough if you have a good designer who has been carefully briefed on the goals and who has worked with you before.)

I began to see that my challenge is to codify my knowledge and communicate it to others. I must be able to specifically describe what is good or bad, describe why it doesn't achieve its goal and where it should be changed. Without this knowledge and the vocabulary to match I can't take advantage of my developing visual literacy skills.

I was beginning to think as a creator with *explicit* knowledge and not as a reader with *implicit* visual language skills.

Guidelines for visual effectiveness

As you have already gathered, I have reservations about my ability to pass on any expertise about this subject based on my journey so far—but I'm sure you are hoping for some tips!

Well, I do feel confident enough to offer you my 8 top tips for beginners.

8 tips for beginners

1	Always plan for words and visuals.	Visuals should not be an afterthought. Words and visuals belong together like bacon and eggs.
2	Know your goal very clearly.	This is the first step in a systematic design process. Ask your normal text question. What do I want people to find/know/do after they have looked at the visual?
3	Read about this topic and study visuals you see.	I have bolded some particularly important items in my reference list.
4	Be highly critical of diagrams and what they are purporting to show.	As with text, creators deliberately or accidentally get things wrong. Edit your own diagrams very carefully.
5	Only use those visuals that are essential to your goal.	Extra visuals will divert attention or confuse.
6	If your visual needs words, place them close to, or in, the diagram.	Research has shown that this increases the effectiveness of visuals.
7	Understand your audience's visual literacy.	
8	Start using the language of visuals to describe visuals.	

There is no single list of words to know and use. You'll need to read more about this for yourself but for a quick introduction I suggest the following web page "Mapping the steps to visual excellence". Run your mouse over the words for an explanation:

http://www.visual-literacy.org/stairs_of_viz/stairs_of_viz.html

All the following words are familiar to you. You can say them, spell them and define some of the ways you can use them:

- contrast
- continuity
- positive/negative
- ratio
- transition.

But can you effortlessly use any of them to describe a visual and to know that this is what you need, or didn't need, in a visual you are developing?

McCreight's handy little book lists over 90 such words and his is not an exhaustive list.

Using visuals for poor readers

I strongly recommend Chapter 7 of Doak, Doak and Root's book on this topic. It backs up its claims with references to research.

Risks of using visuals

1. Visuals are powerful communication tools. Advertising by companies and governments are excellent examples of how this has been exploited. In my mind, ethical issues apply as much with visuals as with text.

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Apart from visual communications I've continued my interest this year in how words can convey ideas and emotions by stealth. I've come across some more references on this topic. Confucius, Luntz, Poole or Lakoff have alerted me to the power of words beyond anything I had previously imagined. And now I am alert to visuals doing the same thing.

2. Just as we can all give examples of visuals that have helped us, we can all give examples of visuals that have failed us. Toys needing assembly on Christmas eve, come to mind.
One solution: User test.
3. At an IIID (International Institute for Information Design) forum in April 2003, Alan Davis of PriceWaterhouse Coopers in Toronto, Canada, discussed a survey of graphs in annual reports. He said that about 25% were seriously flawed. About 2/3 were flawed in favour of the company and 1/3 against. He talked about the problems of "visual arithmetic". He said the errors were caused by poor maths skills, poor software and designers who tended to work in ways which mystified business people.
Some solutions: Edit and review graphs; check the maths; check the plotting; check the scales; user test; study Tufte.
4. Your audience may not understand the format. For example, older people and people who have never used them at work, may not be familiar with flow charts and decision trees.
One solution: User test.
5. Content can be presented inappropriately in visuals.
The *Mapping the steps to visual excellence* web site warns about six pitfalls which may distort the information: oversimplification, clichés (may cause cynical, or indifferent, reactions), overload, ambiguity, misuse and manipulation.
Some solutions: User test; know clearly what you are aiming to achieve with a diagram.
6. There are cultural differences between readers. We are, for example, aware of different feelings about colours between people of different countries. And perspective is presented differently in Chinese art.
Some solutions: Use written or spoken words; clarify cultural backgrounds and design for them.
7. Less skilled readers apparently have poorer visual reading skills than more skilled readers.
Some solutions: Know your audience; user test; concentrate on main message; reduce amount of

reading; provide visual clues; provide motivation. See Doak, Doak and Root's book.

8. The investment in visuals for instructional materials may not pay off. They may not improve learning, they may not motivate learners and they may even disrupt learning.
Some solutions: Take advantage of the large research base and cognitive theory about how people learn from words and pictures. See Clark and Lyons who show how evidence from research can be used to help design visuals that help people learn and how the science of learning can be used to help you design visuals consistently with how people learn.

Concepts and percepts

"In traditional communication, *concepts* have been handled verbally and *percepts* have been restricted to separate boxes in which illustrations or diagrams appear. *Percepts* are thought of as impressions of objects received through the senses and *concepts* are considered to be mental ideas, possibly connected, but sometimes unconnected, with percepts. Visual language emphasizes the selection, inclusion, and integration of percepts with concepts". [My italics.]

Robert Horn, *Visual Language: global communication for the 21st century*, pages 95-96.

Horn's visuals include a perspective view of flat land covered with long wide arrows pointing to the horizon in the distance. The horizon has mountains and a rising sun (with the words "visual culture" inside the sun). The visual illustrates what is driving the emergence of visual language. Here's his explanation for using the horizon and a rising sun in his diagram.

Horizon

The horizon is a percept that is tightly linked in our minds with a number of conceptual ideas. Here, the mountains suggest a vast distance and imply that the infoscape is concerned with big ideas. The arc character of the horizon communicates "there is a global aspect to this" without words. The abstract nature of the landscape tells us that its content can refer to "anywhere" or "everywhere" in the timeframe of an "ongoing now".

Rising sun

We associate the percept of the rising sun with the concept of future and perhaps speculative thoughts. A percept, the rising sun, is tightly integrated with the concept of visual culture.

References

Bolded references are particularly recommended

Books you may already own or have access to

Gretchen Hargis, Michelle Carey, Ann Kilty Hernandez, and Polly Hughes. *Developing Quality Technical Documentation*, 2nd edition, Chapter 10. This is good if you are looking for a way of measuring the visual effectiveness of your work; based on IBM quality measures.

Irene Hammerich, Claire Harrison. *Developing Online Content*, Chapter 5.

Janice Redish. *Letting go of the words: writing web content that works*, Chapter 11.

Aaron Marcus. *Graphic Design for electronic documents and user interfaces*.

Doak, Doak and Root. *Teaching Patients with Low Literacy Skills, Chapter 7* (Out of print but whole book is available on line from Harvard University. An excellent book if you are writing for a general audience even if topic is not health related).

Carol Barnum and Saul Carliner (editors). *Techniques for technical communicators*, Chapter 6 by William Horton.

Michael Albers and Beth Mazur (editors). *Content and complexity*, Chapter 7 by Jean Vanderdonckt.

Specific visual communications books

Ruth Colvin Clark and Chopeta Lyons. *Graphics for Learning (invaluable)*.

Donis A Dondis. *A primer of visual literacy*.

Alex Gerard and Bob Goldstein. *Going visual*.

Robert Harris. *Information Graphics: A comprehensive reference (hundreds and hundreds of diagrams)*.

Gunther Kress and Theo van Leeuwen. *Reading images*, 2nd edition, buy from <http://www.aate.org.au/bookstore/>.

Scott McCloud. *Making comics; Reinventing comics; Understanding comics*.

Edward R Tufte. Any of his books.

Judith Wilde and Richard Wilde. *Visual Literacy*.

Robert Horn. *Visual Language: global communication for the 21st century*.

Web sites or articles available online

The language of graphics: the lecture by Yuri Engelhardt

<http://www.iaa.upf.es/activitats/semirec/LanguageofGraphics> (viewed 23 September 2007).

<http://www.infovis.net/index.php?lang=2> (viewed 23 September 2007).

Conrad Taylor. *New kinds of literacy and the world of visual information*

<http://www.ideography.co.uk/infodesign/eigvii/presentations/literacies.pdf> (viewed 23 September 2007).

Rene Pettersson. *Gearing communications to the cognitive needs of students: findings from visual literacy research*,

IIID Conference *Preparing for the future of knowledge presentation*, Chicago, May 30-31 2003,

http://www.knowledgepresentation.org/BuildingTheFuture/Summaries/Pettersson_summary/PetterssonQuicktime/Pettersson.pdf.

Kevin Cheng of Yahoo has written and spoken a lot about using comics, for example for conveying product concepts.

Sun have published comics you can use for this purpose. All (viewed 5 October 2007).

http://www.uie.com/articles/power_of_comics.

<http://kevnnull.com/2007/01/communicating-concepts-through-comics.html>.

<http://lukew.com/ff/entry.asp?316>.

<http://kevnnull.com/presentations/iasummit2006/Communicating%20Concepts%20Through%20Comics.pdf>.

http://blogs.sun.com/MartinHardee/entry/design_comics_templates_1_0.

<http://mediacast.sun.com/share/MartinHardee/ComicsDot9-1.pdf>.

<http://www.visual-literacy.org>

Martin Eppler, Ken Platts, Emre Kazancioglu. *Visual strategizing: the systematic use of visualization in the strategy process*.

http://www.knowledge-communication.org/EpplerPlattsKazancioglu_ICA_7_06_StrategyVisualization.pdf (viewed 23 September 2007).

<http://www.infovis.net> (viewed 15 October 2007).

<http://www.edwardtufte.com/tufte> (viewed 3 October 2007).

<http://infosthetics.com> (viewed 3 October 2007).

http://www.informationdesign.org/archives/cat_visual_design.php.

<http://infosthetics.com> (viewed 3 October 2007).

<http://dd.dynamicdiagrams.com>.

<http://infosthetics.com> (viewed 3 October 2007).

<http://www.visualcomplexity.com/vc>.

<http://infosthetics.com> (viewed 3 October 2007).

Articles on graphics novels viewed 3 October 2007

<http://www.theage.com.au/articles/2002/06/24/1023864544635.html>.

<http://www.smh.com.au/news/books/the-panel-beaters/2007/09/06/1188783375940.html>.

<http://www.shauntan.net>.

Journal articles and presentations

Geoffrey Hart. *Combining words and pictures: degrees of abstraction* Intercom, Jan 2007.

Some thoughts on visual vocabulary, grammar, and rhetoric, Intercom, May 2007.

Technical Communication journal, Fourth quarter 1998 was a special issue on visualising information.

Claire Harrison. *Visual social semiotics: understanding how still images make meaning*, Technical Communication, volume 50, no 1, February 2003.

Patrick Hofmann. *Polishing your pictures* Presentation, STC conference 2007, see www.stc.org.

Nicole Amare. *The language of visuals: text+graphics=visual rhetoric*, IEEE transactions on professional communication, vol 50, no1, March 2007.

Articles on communicating risk, viewed online for free, 11 October 2007:

John Paling. *Strategies to help patients understand risk* British Medical Journal (BMJ) 2003;327:745-748.

Gered Gigerenzer, Adrian Edwards. *Simple tools for understanding risks: from innumeracy to insight*, BMJ 2003; 327:741-744.

Adrian Edwards, Glyn Elwyn and AL Mudley. *Explaining risk: turning a numerical data into meaningful pictures*, BMJ 2002 324: 827-830.

Fortin, Hirota, Bond, O'Connor and Col. *Identifying patient preferences for communication risk estimates, a descriptive pilot study*, BMC Medical Informatics and Decision Making (2001) 1:2.

Isaac Lipkus and J G Hollands. *The visual communication of risk*, Journal of the National Cancer Institute Monographs no 25, 1999.

Wes Ervin. *Visualizing Uncertainty: The graphical representation of risk in investor communications*, <http://www.knowledgepresentation.org/BuildingTheFuture/Ervin/Ervin.html>, (viewed 11 October 2007).

Other visual references

Ruth Colvin Clark and Richard E Mayer, *e-learning and the science of instruction*. This was a book that was part of my early journey and has proved to be a great addition to my library.

Clark and Lyons. *Graphics for Learning* is a more comprehensive book than *e-learning and the science of instruction*. I will be referring back to this book for more than guidance on visuals.

Paul Mijksenaar and Piet Westendorp. *Open Here*. Wonderful illustrations on instructional design, how to open things, how to assemble, diagrams of structure and so on.

Donald McQuade and Christine McQuade. *Seeing and writing*. Not sure why I purchased this because it is about teaching students to write and to carefully observe what they see. Quite a lovely book in itself.

Using words

Frank Luntz. *Words that work: it's not what you say, it's what people hear*.

Steven Poole. *Unspeaking*.

George Lakoff. *Don't think of an elephant*.

Confucius. *Analects*, Book xliii, Chapter iii, at <http://www.gutenberg.org/etext/3330>.

Irene Wong is the Australian Securities and Investment Commission's (ASIC) publications manager. Irene has contributed in a major way to the intellectual growth of NSW technical communicators through her editorship of the ASTC(NSW) newsletter, conference presentations and her initiative of regular lunch time sessions for technical communicators.

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