



The Rhetoric of PowerPoint

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Abstract

The presentation program PowerPoint is probably the most used tool in the schools, high schools and universities of today. The use of this program, however, comes at a cost, because it is not just a different and neutral way of teaching. Like the use of any technology, PowerPoint affects not only the way we present and teach, but also the way we think, learn and understand. The program carries an inherent tendency to create fragmentation of thought and cognitive overload. In order to avoid this we should stop thinking in terms of technology and begin to think rhetorically. What we need is media rhetoric: the ability to communicate persuasively and appropriately.

“Bullet me, bullet me, I take the full
responsibility”
(*The September When*, 1991)

In the town of Alexandria, in the state of Virginia in the USA, there lived a woman we can call Sarah Wyndham. She was getting cross and tired of her two daughters ignoring her repeated requests to tidy their rooms and do their household duties.

Finally she'd had enough, sat down at the computer, opened the PowerPoint program and wrote: “Family matters. Ideas/opportunities for positive change for the Wyndham family team.” On the next slide she began to write down the relevant points:

- Lack of organization leads to confusion and frustration among all family members.
- Disorganization is detrimental to grades and to your social life.
- Disorganization leads to inefficiencies that impact the entire family.

Instead of simply pleading for harmony in the home she was pitching it – she was giving a talk. Before long, she had 18 slides with PowerPoint bullets, supplemented by colour photographs of happy families on cycle trips – and on the last page a key: the key to success. This family briefing was held only once. The experience proved so upsetting to the daughters that the mere threat of yet another PowerPoint presentation was enough to make them burst into tears.

How far this story is true I'm not sure. I've taken it from Ian Parker's essay “Absolute PowerPoint. Can a software package edit our thoughts?”. In May

2001, this article in *The New Yorker* was one of the first texts to make critical comments on the Microsoft program.

Whether this incident took place or not, the story of the Wyndham family contains a few relevant truths. In the first place: *PowerPoint is everywhere*. It's probably just a matter of time before family members use bullet points to communicate with each other. In the second place: all these endless bullets and contrived clip-art images can bring even the hardest man to tears. The problem lies in *PowerPoint's cognitive style*, for the software forces us to speak and think in particular ways. Like all tools – and media – it has constraints, certain possibilities and limitations. The solution therefore is not to do away with PowerPoint but to develop rhetorical competence in the users. Just as we need Media Literacy to be conscious receivers of communication, we need *Media Rhetoracy* to be conscious communicators.

PowerPoint is everywhere

The 70's and the early 80's was the age of the overhead projector. A change began in 1984, the year that gave its name to George Orwell's frightening book. In that year, some of the employees in the Silicon Valley company *Forethought* began work on an electronic presentation program they called *Presenter*. The name was quickly changed to PowerPoint, and in 1987 version 1.0 was available for Macintosh. Three years later, PC users with Windows could also use the software. Since then, it has spread throughout the world like something between a virus and a new religion.

At an estimate, the average PowerPoint user as early as 1995 was creating about 4-5 presentations a month. Only three years later, this figure rose to 9 presentations a month – more than two a week. According to Microsoft there are more than 300 million registered users of its software (Keller 2003). Every single day, at least 30 million presentations (Parker 2001) are given, that is 1.25 million presentations an hour (cf. Mahin 2004).

In today's business world, it is inconceivable for any sales pitch or company presentation to be given without PowerPoint. Universities and colleges gladly follow their lead. In 2006 a researcher can hardly listen to a lecture, take part in a conference or personally give a lecture without a series of slides.

In the USA, and quite probably in Europe and Scandinavia too, more than 80% of all presentations at business colleges use PowerPoint (Keller 2003). Such presentations do not automatically engender student activation. For, although PowerPoint teaching is based on new technology, its use risks leading to an old-fashioned, didactic form of teaching. Students expect this format, however, and they insist on being able to download the teacher's slide presentation from the Internet.

And it doesn't stop here. Microsoft's slides have begun to make their way into the teaching of children. In the USA, PowerPoint is one of the most popular forms of software in schools (Tuftte 2003, Guernsey 2001). In Europe, or in Scandinavia at least, the program hasn't yet taken over in the classroom but it seems only a matter of time.

Even when the USA's Colin Powell was attempting in late 2003 to convince UN delegates that Iraq possessed weapons of mass destruction, PowerPoint was the chosen tool. Fine though the slides were, they failed to convince the delegates (cf. Pece 2005). And they did nothing to change the fact that to date no one has found a trace of the dreaded weapons, the alleged cause of the war.

So perhaps *New York Times* journalist Clive Thompson has a point when he speculates on whether or not PowerPoint in a unique way contributes to our contemporary confusion and obscuring of thought; a time in which manipulating the facts is as important as presenting them clearly (*New York Times* 14/12-2003).

“If you’ve got nothing to say”, starts a maxim from the advertising world, “then sing it”. Perhaps we could say much the same about PowerPoint: “If you’ve nothing to say, PowerPoint can help you say it loudly and clearly”.

Like any other technology, the ubiquitous slide show isn’t without problems. In 1997 Scott McNealy, CEO of the company Sun Microsystems, found PowerPoint so problematic that he forbade his employees to use it. Why? Because they were spending too much time on the software and the program took up too many bits on the servers. Result: waste of time and band width. McNealy himself described the problem and solution in these words:

We had 12.9 gigabytes of PowerPoint slides on our network. And I thought: what a huge waste of corporate productivity. So we banned it. And we’ve had three unbelievable record-breaking fiscal quarters since we banned PowerPoint. Now, I would argue that every company in the world, if it would just ban PowerPoint, would see their earnings skyrocket. Employees would stand around going, "What do I do? Guess I’ve got to go to work.

In the American armed forces, people have had the same concerns. The military’s e-mail was cluttered with so many slides of rumbling tanks and whirling sector diagrams that here too it used up available band width and delayed the sending of classified messages from the Defense Department. And even worse: these slides prevented effective communication. In 2000, the Pentagon began to clamp down on the widespread use of bullet points, fonts, dingbats, clip-art and animations. General Henry H. Shelton ordered American bases around the world to use simpler presentations (Jaffe 2000, cf. also Pece 2005).

PowerPoint’s cognitive style

Nine years after McNealy’s prohibition, computers have a vastly improved storage capacity and this problem isn’t so critical. But there are still many employees, researchers and teachers around the world sitting out there spending a considerable part of their working hours developing PowerPoint presentations. And the software has been subject to criticism from various quarters.

The hardest and least compromising critic of PowerPoint is undoubtedly the graphic and design guru Edward R. Tufte, professor emeritus at Yale University. With original and attractively designed books such as *The Visual Display of Quantitative Information*, *Envisioning Information* and *Visual Explanations*, he has made his name as a key expert on graphic and visual presentations.

In his pamphlet *The Cognitive Style of PowerPoint*, Tufte expresses merciless criticism of the Microsoft program: presentations are like bad school drama performances: very loud, very slow and very simple.

The problem with PowerPoint, writes Tufte, is that it is exclusively *speaker-oriented* and neither content-oriented nor audience-oriented (Tufte 2003: 4). The standard set-up and fixed formats that make the task of communication comfortable for the presenter are unfortunately at the expense of both content

and listeners. The price paid is presentations empty of information, lacking in content and endlessly tedious. Anyone who has been exposed to PowerPoint presentations can only nod in recognition. We've all experienced an instructor or speaker standing in half-shadow with his back to the audience, reading in a staccato voice:

- each
- word
- on
- every
- single
- slide.

But the problem isn't just boredom, accuses Tufte. The software's poor resolution and standard format depends on, and gives rise to, a cognitive style with abbreviated argument and fragmented thought. A strictly hierarchical single-track structure is the model for all organization of content. Narration and information are therefore broken up into stand-alone slides and the barest fragments.

The audience is served rapid, short sequences of thin information. At the same time, this cognitive style leads to conspicuous embellishment and content-less "PPPfluff" – as he calls it. The Microsoft program makes us focus on indifferent form and destroys content through a commercial approach that turns everything into a sales pitch.

PowerPoint is therefore not just an alternative method of teaching and giving presentations. For as culture critic Neil Postman (1985) states, *any technology is also an ideology*. And Microsoft's presentation software is a technology which fundamentally changes our way of communicating and thereby of thinking – even without our being aware of the change.

- The software makes us think and speak in isolated blocks, instead of in coherent context, totalities, narratives or linear reasoning.
- Each block makes us think and speak in concise, discrete and hierarchizing sections and points.
- The software encourages us to use particular forms of visual material and defined formats and to use ready-made visual material and animations, even if they have no clear relevance to what is being said.
- The software invites ritual conformity of visual style.

Poor resolution and fixed formats

All these problems relate to two connected main properties of the software:

In the first place, the problems have to do with the interface's poor resolution and limited band width. In the second place, they concern the way the program invites us to present all information in fixed formats and patterns.

The problem with the interface's poor resolution and limited band width is that, for example, very little textual or statistical information can be presented on the slides. This can lead to paucity of information and hinder certain forms of communication and teaching.

When giving a lecture, we utter about 130 words a minute. The manuals for the presentation software show about 15 words per slide. If we think of an average lecture of about 45 minutes, the words would fill about 240 slides.

No speaker, of course, puts all his words on slides, but the example illustrates how little information can be put across per slide. As Tufte points out, most factual and informative statements are too long for PowerPoint and, with so little information on each slide, speakers must use a long series of slides. Information is heaped sequentially on even more information. When new information comes along, the previous information is gone and it is very difficult to understand the connection and to evaluate the relationship between the many statements.

Visual presentations normally work best when the informative elements are presented in juxtaposition and within normal visual range, claims Tufte. But there is no room for this on a slide that follows Microsoft's templates; for less than half the slide area is available – and, because the resolution is so poor, large letters are needed. In serious lectures and talks, he emphasises, we should preferably replace PowerPoint slides with hand-outs showing words, figures, data, graphics and pictures *together*. For handouts with high band width allow the audience to contextualize, compare, narrationalize and process the evidence. In contrast, he writes, the meagre, sketchy and forgettable slides tend to

“make audiences ignorant and passive, and also to diminish the credibility of the presenter. Thin visual content prompts suspicions: “What are they leaving out? Is that all they know? Does the speaker think we're stupid?” “What are they hiding?” (Tufte 2003: 12)

For the same reason it isn't wise to show longer text examples on PowerPoint. If I intend to go through a page of Aristotle's *Rhetoric*, I shouldn't use a projector to show it, as it would be almost impossible to read. Instead, I should quite simply hand out a photocopy of the page to each student.

The other big problem is, as we have said, that the software encourages us to squeeze all information into fixed formats and templates and present it in relentless sequence. This leads to a problem in relation to good communication and teaching because the rhetorical and pedagogical choices the speaker ought to make in the concrete situation have already been made automatically by the software.

These pre-determined choices are the result of e.g. the templates, which contain the typographics in a presentation, including the type and size of the set-up with bullet points and type fonts, textbox dimensions and placing, background design and colour, colour schemes etc.

In the same way, the AutoContent Wizard contains text suggestions for each slide. The speaker can use these as a basis and replace the suggested text with text of his own choosing.

When AutoContent Wizard was included in the software in the mid-'90's, the name was actually an in-house joke, based on the rather absurd idea that you just have to press a button and abracadabra, there's your content. Or, as Ian Parker puts it (2001): “a rare example of a product named in outright mockery of its target customers”

For example, if you want to present a teaching course, the program is designed to let you do this by means of nine slides.

- 1) First, a title page with the name of the speaker and lecture.

- 2) Then an introduction with three points: 1) Define the topic, 2) specify what the participants are expected to learn, 3) Find/produce all types of background material of relevance to the audience.
- 3) Next comes a slide entitled *Agenda* and a list with two points informing the audience what will be covered and the time to be spent on each topic.
- 4) The fourth slide is entitled *Overview*, together with two points giving an overview of the topic and explaining the connection between the individual themes.
- 5) The title of the fifth picture is *Vocabulary*. Here the points comprise a vocabulary list and definition of terms.
- 6) In three points, the sixth picture will set out the first theme, by 1) describing the theme, 2) giving an example, 3) providing exercises designed to reinforce the learning process.
- 7) Using exactly the same three points, the seventh picture presents the second theme.
- 8) In the eighth slide, the heading is *Summary*, to be done through three points: 1) Repeat what has been learned, 2) Define learning methods, and 3) Ask for feedback.
- 9) The ninth and final slide is entitled *How to find out more* and here are the three points: 1. other courses, 2. lists of information sources, 3. lists of consultancy services.

This is the set Microsoft template for learning – regardless of topic and situation. With such templates and automatizations, we can say that there is something already written before you write, something composed before you compose, created before you create. The Norwegian media researcher Anders Fagerjord (2005) uses the term *prescript* of these ‘already written’ texts and almost-ready elements in every computer program used to create expression and content.

A prescript is a set of *precepts*, that is, a format or template that determines the scope of what may be written or designed. It is those parts of a text, e.g. an Internet page or a PowerPoint presentation, formed by the template and software before the speaker produces a single message.

When we set out to create a new presentation in PowerPoint, we immediately encounter a template where certain choices have already been made for the speaker, certain guidelines drawn up. There are headings and texts that have to be written in specified places and using specified methods, dispositions that must be followed and points that must be filled out.

With its templates and rules, the PowerPoint interface makes it very simple to create slides with certain types of text and visual design. But it is much more difficult, even sometimes impossible, to create slides with other types of text and visual design. As it isn’t so easy to get away from the templates, we should be able to work both with them and against them, and to choose alternative templates and prescripts where possible and appropriate. For the average PowerPoint user, however, this isn’t so easy, for the software invites the filling out of bullet points more than independent thinking. It is quite simply easier.

Shooting with imperatives, obscuring with hierarchies

The most obvious rhetorical and pedagogical problem with the standardization in PowerPoint is therefore the bullet points. The program’s basic structure, and thereby the lectures and talks which use it, is the listing of everything in bullet points. These bullet lists, writes Edward Tufte, may perhaps help extremely unorganized speakers to be a little more organized, and for the naïve they may

“create the appearance of hard-headed organized thought. But in the reality of day-to-day practice, the PP cognitive style is faux-analytical”.

This is a harsh but not wholly groundless criticism. In the summer of 1998 three authors in the *Harvard Business Review* made the same point (Shaw, Brown & Bromiley 1998): the bullet point approach, so common in business life, leads to superficial and simplified ways of thinking.

In the first place, bullet points are too general and say things that are applicable to any kind of business activity: Cut costs! Boost earnings! Get a bigger share of the market!

Add to this the fact that lists state critical relations without specifying their connection in detail. For lists can only describe three kinds of relation: sequences, priorities and association. But they can neither explain relations between elements nor clarify narrative or causal relations.

In the third place, bullet points omit and suppress important lines of reasoning as to how something works and is interconnected.

When bullets in imperative form baldly command us to increase our share of the market by 25%, profits by 30% and introduce new products; the complex relationship between organization, market and customers remains understated and unexplained. Relationships of this nature are much better described through complete sentences with both subjects and verbs.

Tufte not surprisingly concurs. Instead of merely postulating briefly that we must introduce new products, he writes, we should rather say

who might do it and *how*, *when*, and *where* they might do it. Then several sentences together in a row, a *narrative*, could spell out the specific methods and processes by which the generic feel-good goals of mission statement might be achieved (Tufte 2003: 6).

The uncertainty about who does what, how, when and where becomes even more conspicuous when users of the software allow the division into bullet points to be followed by sub-points and confusing hierarchies – both in each slide and over a number of slides. That this use of PowerPoint can even have fateful consequences is illustrated in a report from the space centre NASA.

When in January 2003 the space shuttle Columbia broke up during landing, the reason was that a piece of insulation material had already broken off and damaged the shuttle during the launch. The fact that the mission leaders in NASA were not given a clear understanding of the risks during re-entry, however, was due to an unclear PowerPoint presentation.

This was the verdict of the commission investigating the accident. NASA has become too dependent on presenting complex and intricate information in presentation software that simplifies and outlines, noted the commission, which also wrote in its report:

it is easy to understand how a senior manager might read this PowerPoint slide and not realize that it addresses a life-threatening situation. (Columbia Accident Investigation Board: 191).

In presenting their risk analysis, the engineers had gathered all information in a set of densely-packed slides. The result was incomprehensible, the consequences were fatal. And the commission regretted “the endemic use of PowerPoint slides instead of technical papers”. The presentation had the usual PowerPoint problems: detailed bullet points, separation of words and figures,

confusing typography, unclear hierarchies and data locked away in illegible tables.

Communication experts Barbara L. Shwom and Karl P. Keller acknowledge the criticism of the slides the Boeing engineers used to explain what had happened when the space shuttle Columbia sustained damage. But, they ask, who is really responsible here? Tufte says that the poor communicative quality of the slides stems from the Microsoft program. Shwom and Keller assert, however, that it was rather the engineers' lack of rhetorical awareness and competence that created the problem. Software isn't the problem. Unclear thinking, writing and organization is the problem: "PowerPoint is not the cause of a poorly planned, disorganized presentation", in their view. The problem is instead: "a symptom of the writer's failure to employ simple slide design principles, basic communication skills, and – most importantly – fundamental rhetorical techniques" (Shwom & Keller 2003: 2).

Shwom og Keller (2003: 5) have made a new version of the infamous Boeing slide, where instead of bullet points they apply Tufte's principle of gathering information "adjacent in space" in contrast to "stacked in time", as happens for example with bullet points (Tufte 1990: 81).

In fact, it is not bullet points in themselves that are the problem, they write, but the excessive and unthinking use of them which destroys communication. The authors give the following advice to prevent the use of bullet points running amok:

On each bullet point slide, authors should address only one main idea: a single discrete category with sub-items consistently related to that category. Do not use bullet points to present a sequence of ideas. In other words, use bullets to present inductive reasoning, not deductive reasoning (Shwom & Keller 2003: 8).

Shwom og Keller are right in saying that communication is always the sender's responsibility and that it is therefore in that direction accusation should be directed if communication is unclear, boring or inappropriate in some other way. At the same time, however, it is important not to neglect the importance of the medium. The engineers may have been responsible for the poor communication but it was primarily the presentation software that made them form their message in a problematic way. As Greg Meyers puts it: "the software can be used (but need not to be) to de-skill the presenter" (Meyers 2000: 187).

Teaching with slides

The problems described above also apply – perhaps particularly – to teaching and lecturing. If I am to enrich my students with a real understanding of how rhetoric can influence people, it will not suffice simply to give a list of points stating that we can appeal to our audience through rational argument, the speaker's credibility and receivers' emotions.

Valuable rhetorical insights are found in how these three work *together*, how they influence each other and how different constellations of appeals function. In some cases, the speaker forms attitudes by stirring emotions but in other cases he stirs emotions by creating an attitude. The important, and not least the interesting, aspect of teaching is not the sequential establishment of statements and facts but rather the act of conveying an understanding of connection, causality, chronology and relational complexity.

Edward Tufte views the use of PowerPoint in schools as particularly perturbing. For the basic ideas of learning stand in direct contrast to the software's hierarchical and sales-pitch tendency to sloganizing (Tufte 2003:

13). Learning means being able to explain, reason and find out about things, he says. Instead of learning to ask questions and investigate content, PowerPoint in the classroom teaches children and young people to speak and think in general, context-less maxims. The PowerPoint exercises found in learning material and in student tasks on the Internet, writes Tufte, are marked by lack of content and a very empty style, PPPhuff, as he calls it.

There are normally 10 to 20 words and one clip-art image to each slide. With 3-6 slides altogether that makes about 80 words for one week's work. Reading 80 words will take about 15 seconds. That's pretty thin teaching, thinks Tufte, who would like to get PowerPoint out of the school. He writes:

Rather than being trained as mini-bureaucrats in PPPhuff and foreshortening of thought, students would better off if the schools simply closed down on those days and everyone went to The Exploratorium. Or wrote an illustrated essay explaining something (Tufte 2003: 13).

Here too Tufte expresses rather an extreme view. Or perhaps not. For the templates, prescripts and bullets on the PowerPoint slides do in fact encourage a form of teaching and lecturing leading to *passive learning*, rather than *active learning*.

The technology invites an outmoded monological and didactic mode of teaching. Because the software makes choices for us, we as teachers and lecturers do not need to concern ourselves with rhetorical considerations of what we want to achieve, what we have to do, why we should do it or how.

We are invited *not* to think rhetorically but rather merely to fill the format with whatever content we happen to have. We are invited *not* to examine our subject in detail when lecturing but merely to present an outline of the lecture, which often means reading out points in the dark with our back half-turned to our audience.

This kind of teaching is not likely to arouse students's attention and teach them to think for themselves. A lively method of learning and thinking is reduced to a lacklustre reeling off of points. Exposed to point after point, through long series of slides, students become stenographers without contact or deeper understanding of what they're writing. It's bad enough that pupils and students don't understand the relations between the points they're busy copying down. Even worse is that they aren't aware they don't understand.

We recognise this from our own experience. Most of us have tried to take notes and believed thereby that we understood what we were writing while what really happened was that the mere act of note-taking prevented us from reflecting over the actual meaning of the words.

In this way, technology risks posing a barrier between teacher and student instead of doing what it's meant to do, that is, building a pedagogical bridge between them. Teaching through bullet points teaches pupils and students to present statements but it doesn't teach them to argue. It encourages presentation rather than interaction. It closes debate instead of opening it up.

To all this we can object that bullets are after all only a form of checklist intended to hold the key points. And that is of course correct. It is therefore also a serious flaw in Tufte's criticism that he fails to acknowledge that slides do not function in a vacuum but on the contrary in connection with the spoken word and the speaker's performance. The interplay between speaker and mode of presentation is something he jumps too lightly over. As Yates and Orlikowski point out (: 11):

Tufte's argument is less persuasive because it conflates the use of graphics in written documents such as articles and newspapers with the use of graphics as visual aids in oral presentations, failing to distinguish between fundamental different genres (the article and the oral presentation) and the recurrent situations in which they are enacted. Moreover, as with all technologies, it is not the technology per se but how it is used that determines outcomes and consequences.

Nevertheless, Tufte's criticism is largely justified. For as both rhetoric (cf. Yates 1974, Carruthers & Ziolkowski 2002) and cognitive psychology (cf. e.g. Eysenck 2001, Miller 1956) teach us, people don't tend to remember freestanding points very clearly. Particularly if there are lots of them.

Instead, we remember what is connected in emotive, logical or narrative context: vivid descriptions, arguments and stories. Understanding and remembering occur more readily when we are presented with a rich context. And depth and context are precisely what is difficult to communicate with the help of PowerPoint, and it is precisely those aspects the programme risks fragmenting. Take for example the works of Plato, E. H. Gombrich's legendary *The Story of Art* or Chaim Perelman's and Olbrecht-Tyteca's *The New Rhetoric*.

To present works like these as bullet points would be to violate them. It is not of course entirely impossible to draw some points from these books but it would hardly do justice to the style of the works or the thoughts they contain. For their value lies just as much in their style and development, their comprehensive examples and well-formulated descriptions. Together, such texts give an insight corresponding to the anthropological view Clifford Geertz describes in his explanation of the term "thick description" (Geertz 1973). In contrast to this, the use of PowerPoint often reveals a thin form of traditional positivistic thinking.

It is therefore no coincidence that the use of PowerPoint in educational institutions has gained widest ground in business colleges. Conversely, it is no coincidence that the software has gained least ground in the universities' interpretative disciplines.

For the literary researcher and the teacher of text analysis, the use of slides will often stand in direct contradiction to the textual analytical method and the detailed description of a work. Listing illustrative examples and narratives in standard template form and bullet points would go against the intentions of these communicative devices.

Engineer Peter Norvig's famous PowerPoint parody shows this clearly. With the help of "AutoContent Wizard" he has reworked Abraham Lincoln's masterly and poetic Gettysburg Address into a PowerPoint presentation. The result is as expected: a miserable, derisible fragmentation of what was once a perfect work of oratory.

It is primarily standardization through templates and prescripts that transforms and potentially destroys communication. Standardization is dangerous because it is so seductively simple. The same applies to the use of fixed, ready-made elements such as clip-art, pictures, sound-clips, animations and autographics. Because these ready-produced elements are so simple to use and include, they are often used to excess.

Instead of thinking rhetorically of what will best serve the pedagogical purpose, the speaker spends time searching for autographics, clip-art, pictures, sound effects and animations which often have only a tenuous association with the

subject matter. In this way, technology blurs both the aim of the lecture and the relationship between sender and receiver.

I shall shortly address the question of how we can adopt a constructive approach to PowerPoint when treating the relationship between speech, text, image and sound – how we can begin to develop Media Rhetoracy for presentations and teaching. But let me first briefly outline what empirical research says about the use of PowerPoint in teaching.

PowerPointing lectures

PowerPoint was originally designed for use in the business world. It is a rhetorical tool developed for the purpose of suasion.

The question is whether the software is also a suitable didactic tool. What happens when we transfer the didactic content out of traditional didactic forms such as blackboard teaching and lecturing and into a modern rhetorical form such as the PowerPoint presentation? Although PowerPoint presentations quite clearly have a number of inherent communicative and pedagogical problems, students still seem to prefer lecturers to use this technology.

Some empirical studies support this view (Simpson et al. 2003, see also Blokzijl & Roos 2004), while others indicate that most students would prefer some other form of lecturing medium than PowerPoint (Loisel & Galer 2004). However, in those cases where students were not obliged to sit passively watching a PowerPoint show but could also interact with the lecturer and the presentation material, the majority did prefer PowerPoint (Louise & Galer 2004).

Empirical research therefore provides no clear-cut answer as to whether students want the presentation software or not. The same applies to empirical studies of the program's learning effect. While some studies claim that the use of PowerPoint increases learning, others show that substituting PowerPoint for the blackboard does not lead to better performance or grades.

In one such study, the authors write that PowerPoint may help students to remember certain elements (recall), but that the technology should not be used *instead of* the blackboard, merely as a supplementary aid" (Szabo & Hastings 2000). Another study (Bartsch & Cobern 2003) shows that students who attended PowerPoint presentations with sound and pictures performed less well than students who attended presentations without these elements. A number of studies showed that the less relevant the pictures, clip-art, animations and sound effects, the worse the students performed and the less they cared about presentations using PowerPoint.

Microsoft's presentation software undoubtedly tends to mould teaching and lectures into forms that prove limiting and problematic. But it also apparently has certain technological characteristics with the potential to create both satisfaction and learning.

Let me therefore, since the software is so ubiquitous – and since it has come to stay – conclude by drawing attention to a communication problem which can be resolved with a little rhetorical awareness and competence.

Media Rhetoracy

Since PowerPoint isn't going to go away, we can only try to adopt an active approach to this communication tool. I am critical of the scope and influence PowerPoint has gained over teaching and presentations. I do, however, use the

software in some of my presentations and lectures – but I take care to do so on my own premises, not on Microsoft's. And I don't use it every time I'm about to teach. We can certainly manage perfectly well without depending on the software every time we address an audience.

The solution to the PowerPoint problem is not for speakers to stop using the software – though it might help if many people did. The solution is for us to stop thinking in terms of technology and begin to think rhetorically.

As speakers, we should not be thinking of how to fill in a template. We should be thinking of purpose, goals and means. What do we want to achieve? How can we best achieve it? What tools will help us best? And what are the technological limitations and possibilities?

All this, of course, is the point of departure for speakers all over the world, regardless of the technology they use. As in any other form of communication, the speaker, before speaking, should emulate Cicero. He/she should perform a rhetorical analysis of the situation, the audience and communicative tools in relation to intention.

It has since become common to talk of Media Literacy (cf. Potter 2005, Erstad 2004), i.e. people's ability to decode, understand and relate to media and media statements. The time has now come for us also to think about Media Rhetoracy, in other words rhetorical competence. If Media Literacy represents the ability to read and interpret media statements, Media Rhetoracy represents the ability to create and communicate such statements: to write instead of reading, code instead of decoding, influence instead of being influenced. Among these skills is the appropriate and persuasive use of communicative tools such as PowerPoint.

Multi-media Learning

Practical skills require theoretical understanding. It is therefore important for us to understand the significance of Multimedia Learning. The supplementing of a teacher's presentation with texts, pictures and sound involves at the same time the software's pedagogical possibilities and limitations. It has to do with the way we humans perceive and decode information.

Cognition research has given us three hypotheses – or theories if you prefer – that describe how the human brain works (cf. Meyer 2001 and Mayer & Moreno 2003).

The first hypothesis is that we process information through two separate channels: an auditive and verbal channel which processes sound and verbal impressions, and a visual channel which processes images and visual impressions (Paivio 1971, 1978, Mayer & Moreno 2003).

In a PowerPoint presentation the speaker's words and any sounds or sound effects used will be picked up by the ears while words and pictures on the screen are picked up by the eye. Our working memory will then connect, select and organize the auditive and visual impressions through the respective channels, before the verbal and visual modalities are finally united in the long-term memory. This sound relatively unproblematic, but it isn't.

For the second cognitive hypothesis teaches us that both these human information channels have limited processing capacity. This is particularly relevant in the processing of multi-media impressions such as PowerPoint. True learning requires considerable cognitive activity in both channels. This is the third cognitive hypothesis. When in a learning situation we are exposed

simultaneously to words, images and sound, we therefore run the risk of *cognitive overload*.

In the progression from sensory impression to sensory memory and thence to working memory and finally to long-term memory, all teaching and learning entails the risk of cognitive overload (Mayer & Moreno 2003, cf. Moreno & Meyer 1999). If I'm too busy seeing, I'm not listening properly. If I'm too busy listening, I can't manage to read or take notes.

In PowerPoint presentations cognitive overload is a constant risk. Because we are continuously processing different representations such as written texts, design, pictures, graphics, ding-bats, animation effects, sound effects etc., our brain hasn't enough capacity to process the speaker's words.

Retention and processing of the many different representational forms absorbs our thinking capacity and leads to cognitive overload. Because both verbal and visual information come so rapidly and fragmentally, listeners can neither process and retain the information in their working memory nor transfer it to their long-term memory.

Redundancy and rhetorical focus

The solution is simple and rhetorical. In the first place, the teacher must remove everything not directly relevant to the main focus and desired aim of the teaching.

Away with everything just meant to be a little amusing and diverting. Away with irrelevant pictures and ding-bats, disturbing animations and sounds without function. Variety is positive but only if relevant and functional.

Secondly, we must create *redundancy*. We can do this in two ways: 1) we can repeat ideas over a period of time, or 2) repeat them simultaneously, that is communicate the same content in different ways, at the same time.

By repetition over time we create *diachronic redundancy*, as when we repeat verbally or visually something presented earlier. We can say or show the same thing in different ways, for example by reformulating the same points, giving different examples or by first presenting something orally then in writing, or first with an illustration and then in words.

We can also create *synchronic redundancy*, which is simultaneous repetition, by communicating something both verbally and visually at the same time. We can describe the relevant elements in a picture, emphasise what the audience should note on the screen, or simply read the text out loud. Manuals on the use of PowerPoint often advise us not to read out what's on the slides. This is hammered home with exclamation marks: Don't read out what's on your slides! But pedagogically it's in fact quite a good idea. For in this way the message is communicated through both the recipients' verbal and visual information channels.

Speakers who bore their audience by reading from their slides is naturally a problem, but this is because they tend to have too much text and too much extraneous text and are much too reliant on their slides as their real manuscript.

As noted, we should be aware that PowerPoint (and similar presentation software) is a multimedia tool. But we should also remember that presentations are primarily oral presentations. The use of text, sound and pictures should support the person speaking, not replace the speaker. We

would therefore do well to remind ourselves of the traditional rhetorical aims of suasion, teaching and entertaining.

We should remember rhetoric's doctrine of *inventio*, which teaches us how to find the best content and the most convincing arguments. And which teaches us to prefer exploring one central argument in depth rather than superficially reeling off a number of different arguments. In the same way, rhetorical doctrine tells us about the appropriate development of our theme, *dispositio*, that the different sections of our disposition have different functions: the introduction should arouse interest and win good-will and credibility. The presentation of the matter should be brief, clear and concise. Our argumentation should provide proof of our theses and refute our opponents' objections. And our conclusion should summarize and where relevant appeal to feelings and action.

The waffling chat that often accompanies PowerPoint presentations would also benefit from greater attention to the rhetorical requirement that the language we use should not only be clear, correct and appropriate but also vivid. It is the use of tropes and figurative language that sharpens our ears and structures our thinking: anecdotes and descriptions, alliterations and assonances, metaphors and metonyms. These verbal devices aren't given free play when we use PowerPoint lists to present our thematic content.

To prevent these general rules about arguments, disposition and the use of language from petrifying into stiff genres – such as templates and prescripts in presentation software – they are always subordinate to rhetorical requirements for attention to functionality and regard to the concrete situation. The speaker must choose the right moment (*kairos*) to say what is pertinent and appropriate (*aptum*). Functionality before form.

Bullet me, bullet me

Despite the many objections to presentation programs such as PowerPoint, many people see no problems at all with the software. Particularly in business life, people will shake their heads and say that no one can blame a hammer because someone uses it to destroy rather than to build. It isn't Microsoft but incompetent users who make poor presentations. Using my terminology, we can say that they lack rhetorical awareness and competence: Media Rhetoracy.

This argument is in keeping with Aristotle's view of rhetoric as an amoral *techne*, information technology of purely instrumental character. He says that apart from virtue itself, people can misuse everything, including rhetoric. Like the knife: in the criminal's hand it can be used to kill, while in the surgeon's hand it is used to save life (*Rhetoric* 1,1,12-14).

Aristotle may be nearly always right but we should remember Neil Postman's assertion that *any technology is an ideology*. We should listen to medium theorists such as Marshall McLuhan, Daniel Boorstin, Walter Ong and Joshua Meyrowitz, who teach us that communication's forms and technology influence people's way of thinking, speaking and acting. Any kind of technology, any medium, has constraints, contains certain possibilities and limitations. There are some things they can do, some things they cannot. We don't eat cake with a hammer and we don't play volleyball with a knife.

If Edward Tufte's lament has its place, this is above all because PowerPoint is now so prevalent that other forms of presentation are met with scepticism.

If time after time we squeeze complex ideas into a series of disparate slides, with fixed templates and fragmented bullet points, we simplify not only speech

and content but also the way in which we perceive the content. Indeed, we influence all our ways of thinking. That is why Tufte talks about PowerPoint's cognitive style.

Aristotle is naturally right when he compares rhetoric to a knife and says that it isn't the tool or the technology in itself that is the problem. People themselves choose whether to act well or badly, morally or immorally. It is the ancient version of "Guns don't kill people. People kill people".

Quite correct, of course. And yet not. Allow me to conclude with a simple reformulation of an assertion by Peter Norvig, creator of the PowerPoint parody "The Gettysburg Address":

PowerPoint doesn't kill teaching and learning. Teachers and lecturers kill teaching and learning. But using PowerPoint is like having a loaded AK-47 machine-gun on the desk: you can do very unpleasant things with it.

That's certainly something we should avoid. And the best way is to think rhetorically.

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