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Between the grid and composition: Layout in PowerPoint's design and use

Abstract: Ubiquitous software such as PowerPoint has contributed to making layout an important semiotic resource in everyday professional communication. Drawing on developments in the visual arts, graphic design, and social semiotics, this paper presents two central and complementary principles for layout design and analysis: the grid and composition. These principles are then applied in a conceptualization of the template as an interface between the grid and composition, which provides a basis for comparing default layout templates in PowerPoint for Windows 2003 and 2007. The comparison reveals that options in PowerPoint 2007 are less explicit from the perspectives of both grid-based design and composition, and considerably limit users' freedom in layout design. We then consider the implications of the limited guidance that PowerPoint, through its default layout options and help menu, offers its users on how to use layout effectively with reference to a survey of twenty-seven slideshow presentations from corporate and higher education settings and three case studies selected from this data. The survey and case studies suggest that PowerPoint users can benefit from explicit advice about both grid-based design and composition as well as a stronger awareness of the limitations and advantages of using templates.

Keywords: layout; grid; composition; template; PowerPoint; new writing

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1 Orientation: Layout in contemporary professional communication

Layout is a primary resource in ubiquitous semiotic software, or software for making meaning, such as PowerPoint. Not only does PowerPoint feature a separate menu with default slide layout options, but one of these must be applied before

users can modify it and/or populate a slide with content such as written text, still or moving images, and so on. Alongside other advances in computer technology, software design has thus contributed to shifting the status of layout so that it is no longer the specialized domain of graphic designers and artists alone, but a semiotic resource that others too are increasingly expected to be aware of and use effectively in professional communication.

This paper presents a study of the interaction between the design and use of layout in PowerPoint, and aims to expand existing knowledge of layout as a key resource in visual design, of PowerPoint as a semiotic technology (i.e., a technology for making meaning) and of the norms that regulate the use of layout in PowerPoint slideshows. Our interest in PowerPoint is motivated by its dominance as a ubiquitous software for designing presentation slideshows in corporate and higher education settings. Specifically, this paper develops an understanding of how layout is used in PowerPoint slideshows as an example of everyday professional communication and as a site for what Van Leeuwen (2006, 2008, 2010) terms “new writing,” or writing that relies on visual as well as, and even more than, verbal resources for signaling relationships between ideas.

To meet these goals, we first present two central and complementary principles for layout design and analysis, the grid and composition – as they have been developed in the visual arts and more recently graphic design, and theorized in social semiotics – and conceptualize the template, the starting point for layout design in ubiquitous office software, as an interface between the grid and composition. This conceptualization provides a basis for comparing default layout templates in PowerPoint for Windows 2003 and 2007. The comparison suggests that although the software’s design and help menu incorporate some principles for using layout (as well as for using other semiotic resources, as discussed for example in Djonov and Van Leeuwen 2011; 2012), changes in PowerPoint’s default layout templates limit users’ awareness of these principles and potentially also their freedom in using layout in presentation slideshows. We then consider the implications of the limited guidance that PowerPoint offers its users on how to use layout effectively with reference to a survey of twenty-seven slideshow presentations from corporate and higher education settings and illustrate these implications with three case studies selected from this data. The discussion suggests that PowerPoint users can benefit from explicit advice about both grid-based design and composition as well as a stronger awareness of the limitations and advantages of using templates. Such advice is especially pertinent to the increasingly common practice of distributing and viewing slideshows within a company or an educational context on their own, independently of other resources, such as speech and gesture, which accompany slideshows in live presentations (see Farkas 2006; Yates and Orlikowski 2007).

2 Two perspectives on layout

Layout is an integrative semiotic resource; it enables images, words and other spatially co-present elements to be combined to form cohesive and coherent multimodal texts (Kress and Van Leeuwen 2006 [1996]: 177). In this section, we draw on work in painting, graphic design and social semiotics to outline two perspectives on layout, incorporated into two central and complementary tools for layout design and analysis – the grid and composition – which have the potential to help understand and improve layout in PowerPoint’s design and use.

2.1 The grid: A foundation for composition

Broadly defined, the grid is “a structure or pattern of lines used to guide the placement of the elements of a design” (Ambrose and Harris 2008: front cover). The grid is thus a technology for approaching layout from below, that is, as a foundation for visual composition, by considering how to organize available design space. To illustrate this, we compare its use in two distinct contexts: Renaissance painting and contemporary graphic design.

2.1.1 The grid in Renaissance painting

The Renaissance grid is a structure of parallel horizontal lines and vertical lines converging into a vanishing point (Figure 1), and was developed as an instrument

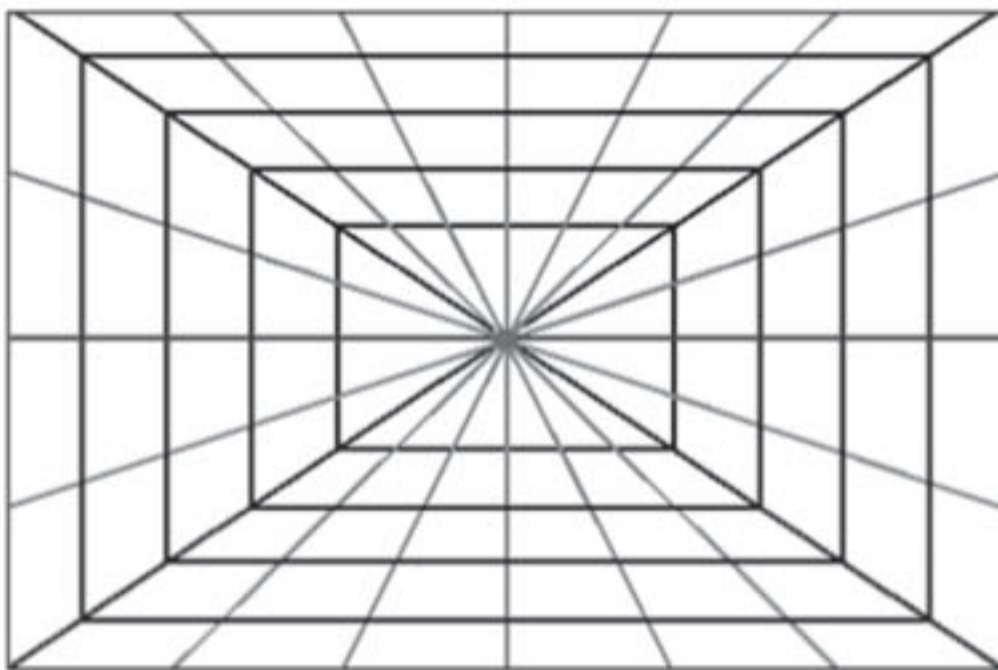


Fig. 1: One-point perspective grid

for realizing the concept of linear perspective and achieving naturalistic pictorial representations. It serves to determine the relative scale of elements in two-dimensional representations of three-dimensional space and produce an image that subjects the viewer to observing what is represented from an individual, subjective, point of view. The Renaissance grid thus reflects the humanist values of empiricism, secularism and realism alongside those of individuality and subjectivity (Kress and Van Leeuwen 2006 [1996]: 129–133).

To be effective, the representation created with a perspective grid has to render the grid invisible. Perspective grids could only be seen in preparatory drawings such as that for the altarpiece *The Adoration of the Magi*, which Leonardo da Vinci began in 1481 and another artist completed fifteen years later (see further Library of Congress 2006). Besides painting, perspective grids are commonly used in architectural and landscape design as well as animation.

2.1.2 The grid in graphic design

In graphic design, the grid is an orthogonal structure of horizontal and vertical lines whose intersections define regions of different proportion for the placement of written text and images on printed or electronic pages. These regions may be columns or modules and are separated from the edge of the page by margins and from each other by gutters. In modular grids, a given content (e.g., a paragraph or an image) can occupy one or more modules. Modules combined in this way form a spatial zone. The webpage in Figure 2 is based on a modular grid and belongs to a website offering access to resources on grid-based design.

The grid behind it can be viewed in its entirety, as shown in Figure 3, where a column, row, margin, module, and spatial zone have been identified.

Typically, however, the graphic design grid only becomes visible to viewers as they observe the consistency it creates in the placement of similar types of content elements (e.g., written text or images) across pages, double-spreads, screens, etc. This is illustrated with three double-spreads from the fashion and lifestyle magazine *frankie* in Figure 4, which appear different at surface level (as each reflects the relative freedom that has been exercised in the positioning of elements on it), but use the same modular grid.

Grid-based design emerged alongside the field of graphic design in the mid-twentieth century in response to several interrelated factors. Increased literacy levels and mass production called for standardization in print materials and gave rise to the need to ensure consistency, efficiency and clarity, yet allow sufficient freedom in the design of documents that combined written text with images and



Fig. 2: The Grid System: homepage with some visible grid divisions (Carusone 2008–2012)

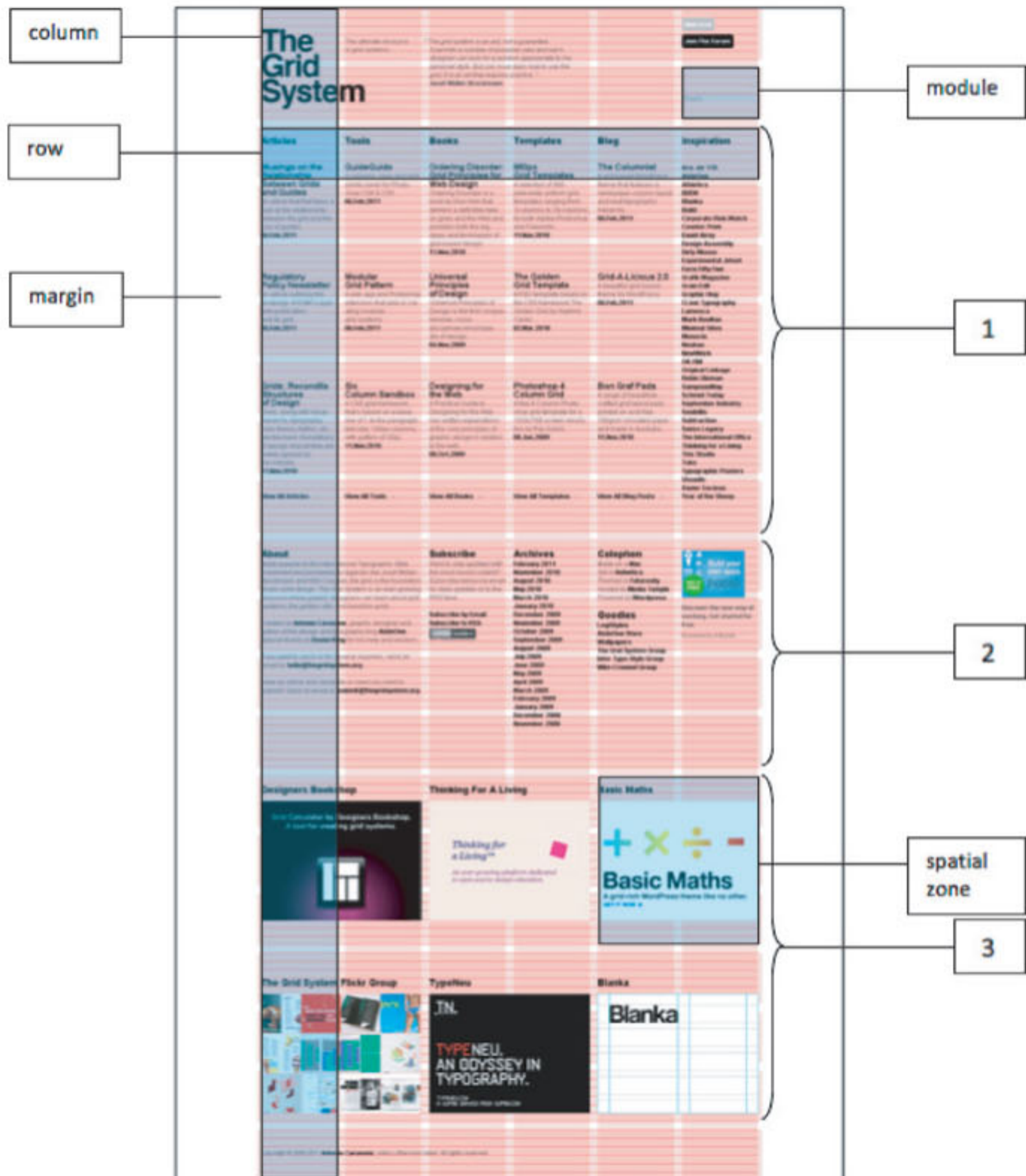


Fig. 3: *The Grid System*: homepage with its grid completely visible (Carusone 2008–2012)

other graphic elements on and across pages. A grid system also offered a solution to establishing and maintaining a unified brand identity among a company's print and later online communications. (More detailed accounts of the history of grid-based design are offered in Roberts 2007; Samara 2002). More generally, the grid was seen as a symbol of rationality, progressive thinking, and universal access – values central to both modernism and constructivism:



Fig. 4: Three double-spreads from *frankie magazine*, Issue 35, April 2010 (pp. 20–21, 22–23, 106–107)

Design which is objective, committed to the common wealth, well composed and refined constitutes the basis of democratic behavior . . .

Working with the grid system means submitting to laws of universal validity.

The use of the grid system implies:

the will to systematize, to clarify

the will to penetrate to the essentials, to concentrate

the will to cultivate objectivity instead of subjectivity

the will to rationalize the creative and technical production processes

the will to integrate elements of color, form, and material

the will to achieve architectural dominion over surface and space

the will to adopt a positive, forward-looking attitude

the recognition of the importance of education and the effect of work devised in a constructive and creative spirit. (Müller-Brockmann 1996 [1981]: 10)

Whereas the perspective grid in painting is an instrument for overcoming the limitations of *a two dimensional surface* in order to create naturalistic visual representations, the graphic-design grid facilitates breaking away from the constraints of the frame of the page, screen or window (Lupton 2004) so as to establish a hierarchy of importance and meaningful relations between visual and verbal elements and to balance creative freedom with consistency, efficiency, and clarity *within and across pages and documents*. As Kane has argued: “A grid [in graphic design] is not about painting a page – creating the perfect composition within the frame of the paper trim. Rather, it is about building a page – providing a framework within which *visual and typographic elements work to reinforce meaning*” (2002: 153, emphasis added).

Balancing consistency, efficiency, and clarity with creative freedom involves two types of choice in grid-based design:

- i. *intrinsic*, which concerns the potential to vary the proportion, alignment, position and orientation of images and written text within a grid, and
- ii. *extrinsic*, associated with the ability to combine features of the grid such as alignment and proportion with design elements extrinsic to it such as typography, color, and movement.

Intrinsic choice is subject to two main factors. The first is granularity: the more and the smaller a grid’s modules, the more the possibilities for forming spatial zones with various sizes and orientations. The second is placement: the extent to which different positions within the grid are reserved for specific (types of) elements. To illustrate, in a single-column (or manuscript) grid, written text can only be presented within a single block, and different relations among parts of that text can then be signaled through grid-extrinsic elements such as color and typography (e.g., paragraphing and/or using different font types, styles,

and sizes). In a multi-column or modular grid, parts of the same text can be assigned to different columns or modules in order to emphasize their different functions in the text. The homepage in Figure 2, for instance, uses columns to demarcate the website’s main sections (“Articles,” “Tools,” “Books,” “Templates,” “Blog,” “Inspiration”), each of which presents content related to the website’s central theme, The Grid System, but offers access to a distinct type of resources. The size of the modules in this grid allows it to accommodate images of various dimensions, with several modules combined to form spatial zones for larger images with written text. This, in turn, increases the different possibilities for horizontal and vertical alignment within spatial zones, columns and rows, as well as for the orientation (e.g., landscape or portrait) of elements within the grid.

The interaction of intrinsic and extrinsic choices also establishes meaningful relations on this webpage. The main sections are signaled as similar through the horizontal alignment of their titles, yet there is a difference between the first five sections and “Inspiration” since its title – unlike theirs – cannot be activated as a rollover and is not clickable.¹ Variation in typography and color helps establish a hierarchy of information, too, as the segment in Figure 5 illustrates.²

Articles

Musings on the Relationship Between Grids and Guides

An article that that takes a look at the relationship between the grid and the use of guides.

06.Feb.2011

Fig. 5: Segment from *The Grid System* (Carusone 2008–2012)

1 Unlike the other sections, “Inspiration” is presented solely on the homepage and serves the purpose of providing access to webpages listed below its title that do to belong to the same website.

2 The section title “Articles” appears in a font larger than the hyperlink anchors below it (“Musings on the Relationship between Grids and Guides”). In turn, a description of the content to which each hyperlink leads (e.g., “An article that that takes a look at the relationship between the grid and the use of guides.”) is positioned below the anchor, and presented in smaller, thinner, and lighter-colored type, signaling its subordination to the anchor. The date the link was added to the website is then differentiated from the description through its bold, black type.

Grids enable graphic designers to respond to various pragmatic and ergonomic as well as aesthetic constraints. By prescribing repetition in the placement, alignment, and size of like elements on and across pages and within as well as across documents and design projects, the grid increases the efficiency of the design process (Ambrose and Harris 2008; Müller-Brockmann 1996 [1981]; Roberts 2007) as well as of readers' orientation and comprehension; "the junctures of horizontal and vertical divisions act as signposts for locating . . . information" (Samara 2002: 9), alongside elements such as color, typography, and format. For instance, in website design, key positions within a grid are reserved for certain webpage elements (e.g., top left corner of each webpage for the website/company's logo) in order to support user orientation, and color-coding typically combines with other resources for signaling how information is organized (e.g., labelling) so as to ensure website accessibility.

Aesthetic constraints are imposed through proportions such as "The Golden Section/Rule" ($a : b = b : (a + b)$, or aspect ratio 1:1.618), which is believed to reflect the harmony of proportions found in nature. Other proportions, initially considered aesthetically pleasing due to their mathematical elegance, are imposed even more tangibly through international page-size standards. Such standards blur the boundaries between aesthetic and pragmatic constraints; indeed, where rationality is valued, the grid is revered as an object of beauty:

Grids are generally made visible only through use, but some designers have exposed the workings of the graphic design machine to demonstrate that the grid is something not only of utility, but also of beauty. Once visible, the precision of the grid acts as evidence of design credibility, and its purity of form has a mystical draw. (Roberts 2007: 18)

A central challenge for grid-based design then is to achieve a balance between these constraints and creative freedom, or as Karl Gerstner, an early theorist, practitioner, and key advocate of grid systems in corporate design, put it: "The typographic grid is a proportional regulator for composition, tables, pictures, etc. It is a formal program to accommodate x unknown items. The difficulty is: to find the balance, the maximum of conformity to a rule with a maximum of freedom. Or: the maximum of constants with the greatest possible variability" (1968 [1964]: 13).

Achieving an effective balance between freedom and conformity entails taking into consideration the amount and kinds of text and images, the kinds of meaning and levels of importance within them, and their relationship to each other and to the reader, for "the underlying principle behind any grid is that it is most successful as an expression of content" (Kane 2002: 53).

To summarize, the grid in both Renaissance painting and graphic design is a tool for approaching layout from below and is typically invisible. The perspective

grid provides a foundation for naturalistic representation and subjects the viewer to a single point of view. The grid in graphic design is a guideline for placing various graphic and/or typographic elements on and across pages and documents, and seeks to balance creative freedom with conformity to pragmatic, ergonomic and aesthetic constraints in order to achieve consistency, efficiency, and clarity.

2.2 Composition: Layout from above (the grid)

Another dominant tool for designing and analyzing layout is composition. Complementary to the grid, its focus is not on how to distribute available space among various elements, but on the relative positioning of these elements within an image or within and across pages. When a grid is used to support composition, composition allows features of the grid “to come alive as elements of artistic expression” (Arnheim 1988: 8), adding dynamism and value to certain positions on a painting’s surface.

This perspective has been developed considerably in Kress and Van Leeuwen’s (Kress and Van Leeuwen 2006 [1996]; Van Leeuwen and Kress 1995) social semiotic model of layout. The model consists of three systems – *framing*, *salience*, and *information value* – where choices from any system are independent from choices from the other two. Each system is fractal, that is, each can be applied to layout units of various sizes, and all three systems operate simultaneously and influence the reading paths viewers take through an image, page, double-spread or multi-page document. The aim of the model is to enable layout choices to be interpreted critically, in relation to socially significant issues, by relating visual design to features of the socio-cultural and historical context in which it operates. These issues may concern the relative importance assigned to either images vis-à-vis writing or to specific visual and/or verbal representations in specific social contexts.

Framing is the degree of connectedness or disconnectedness between layout elements, which may be signaled through contrast or similarity in color, font type or size, brightness, shape, spatial orientation, distance, movement, and the grouping of elements within a given area, apart from elements occupying other areas.

Salience is the degree of attention layout elements attract, which is determined by visual cues such as the size and weight of the area they occupy within a composition, sharpness, brightness, contrast, saturation, foreground or background position, as well as by their cultural importance or resonance with

individual experiences and taste. In audio-visual compositions, audio and kinetic cues such as the presence or quality of sound and movement associated with specific elements (e.g., rollovers) may also increase salience.

Information value involves distinctions between different zones within the composition of a layout unit, which can be a single image (or part thereof) or extend to include both images and words within a page, a double spread or a multi-page document. This system extends Arnheim's (1988) idea that paintings use at least one of two systems of composition, the "centric" and "eccentric." The centric involves a center and elements around it, which may form vectors moving towards or away from it; these elements function as Margins, are subordinate or ancillary to (any element occupying) the Center, and when equidistant from the Center, are also presented as equal in value to each other.

The eccentric system involves the use of parallel horizontal and/or vertical lines, as "found in the choruses of columns or trees or crowds of people" (Arnheim 1988: 7). Vertical distribution in eccentric compositions, as Arnheim illustrates with the arrangement of biblical figures in religious painting, is interpreted with reference to the physical experience of being subjected to or able to resist gravity, giving rise to metaphorical interpretations of objects or figures placed higher as superior, and by extension more general/abstract, to those, more "grounded" ones, positioned below them. Similarly, Kress and Van Leeuwen argue that elements occupying the top in vertically polarized compositions could signify the Ideal, "the ideal or generalized essence of the information," in contrast to elements placed at the bottom, which function as the Real, presenting "more specific information (e.g., details), more 'down-to-earth' information (e.g., photographs as documentary evidence, or maps or charts, or more practical information (e.g., practical consequences, directions for action)" (2006 [1996]: 187).

Horizontal distribution, on the other hand, lends itself to being interpreted in terms of the reading paths favored in literate cultures. Following Kress and Van Leeuwen, left-to-right reading/writing cultures are most likely to treat the left side in horizontally polarized structures as Given, as presenting something known, commonsensical, uncontested or taken for granted, and the right side as New, associated with the problematic, contestable, or unexpected. In other words, what is positioned on the left is likely to be interpreted as preceding (literally or figuratively) what is on its right. This principle can be extended beyond the page, so that content presented on, for example, a PowerPoint slide may function as Given in relation to content presented on subsequent slides.

When there is an element positioned between elements functioning as Given and New or Ideal and Read, as in triptychs, this element may function as Mediator establishing a transition between these contrasting values or reconciling their differences.

Like grid design, composition is subject to various constraints. In webpage design, for example, the visibility of elements important for users' orientation (e.g., the website or company's logo/homepage anchor, main navigation bars) and/or for the website's existence (e.g., advertising banners) is ensured by their conventional placement in the leftmost and topmost areas of webpages, as usability guidelines require that these elements be accessible without scrolling. This placement guarantees the salience of these elements for all users and creates a frame around the main viewing area of a webpage, separating webpage content from the homepage anchor, navigation bars and advertising (Djonov 2007).

2.3 The template as interface between the grid and composition

While the grid and composition still enjoy dominant status in professional layout design and visual and/or multimodal analyses of layout, the starting point for designing layout in ubiquitous software applications such as PowerPoint is the template.

In graphic design, templates can be seen as a strategy for reconciling the principle that "content must come first" (Ambrose and Harris 2005: 11) with the desire to employ grids as guides for placing "x unknown contents" (Gerstner 1968 [1964]: 13), particularly in projects aimed at ensuring an organization's communication presents a unified brand identity. Pioneered by the Italian designer Massimo Vignelli, who believed that "design should reject the individual impulse for expression in favor of developing overall systems," this strategy involves imposing "semantically distinct zones" (Samara 2002: 20) on the grid. As an example, consider the three semantic zones identified in Figure 3: (1) links to resources on grid-based design, which constitute the website's main content; (2) information about the website, or its functional content; (3) advertising content. A template is then based on an understanding of the key generic components of certain document types; it specifies where and how they should be distributed – spatially and in multi-page or dynamic documents also sequentially – and may also predetermine how they should be presented through typography, color, movement and so on. A template makes a grid partially visible, but also restricts its applicability to particular document types, content and/or company and the freedom of designers to experiment with the interplay between choices intrinsic and extrinsic to the grid.

From the perspective of composition, a template can be defined as a configuration of choices from the systems of *framing*, *salience*, and *information*

value, and can be designed for a particular format (e.g., webpage), genre (e.g., advice columns), and/or context (e.g., a specific magazine); templates thus vary in terms of the semiotic practice each is designed to support, which can be more or less narrowly defined. When a template is designed to house a text with a particular purpose (e.g., to entertain, to give advice, to explain), so that it specifies the obligatory and optional components and delineates the reading path/s needed to achieve that purpose, the template provides a structure for a particular genre (Van Leeuwen 2005b). Taking a social semiotic view on composition, Machin and Van Leeuwen (Machin and Van Leeuwen 2004, 2007; Van Leeuwen 2005a, 2005b) not only identify the templates behind specific genres in the women's magazine *Cosmopolitan* and acknowledge their role in constraining freedom in the layout design of these genres, but also explore the ideology these constraints support (cf. Bateman 2008). They argue that these templates are adopted in versions of the magazine across the world as a strategy to establish a consistent brand identity globally, despite each version featuring local themes and content. One such genre is the "hot tips" column, illustrated in Figure 6.

The genre's obligatory stages include a statement of an issue (e.g., "Does he want to be more than friends?"), which is typically a general problem, question or aim, and a number of specific tips for addressing it (e.g., "He acts protective."). These stages, alongside any optional ones such as case stories or maxims, are presented in a template that ensures the issue is made more salient through typography and color and positioned above the tips, and thereby presented as more general than the tips. (In Figure 6, for example, the issue, "Does he want to be more than friends?" is accompanied by a captioned image that illustrates one of the tips, "A stiff upper lip means he's smitten."). The tips are presented as a bulleted list, with each list item starting with a tip presented in bold font, followed by a plain-font statement elaborating on it. The bullet list is a key example of "new writing," writing that relies on visual-verbal interaction, rather than on verbal grammar or discourse-semantic structures, for creating cohesion and coherence, and is strongly fostered by technologies such as PowerPoint (see further Van Leeuwen 2006; Van Leeuwen 2008, 2010; see also Kress 2003, 2010).

A template then can be viewed as an interface between the grid and composition. It is imposed on the grid and defines the scale, position, alignment and often also the presentation (e.g., color and typeface) of graphic and typographic elements on and across pages, and thus guides composition, or the way content elements, once known, are positioned to make meaning in relation to each other. By restricting the placement and orientation of various elements across a visual surface as well as prescribing the meaningful relations that can be established among these elements, templates play an important role in imposing norms on

professional communication, and rather than promoting design that follows content, force content to fit design. The influence of layout templates built into software products, moreover, extends far beyond a specific type of document within a company (e.g., posters) to encompass much larger domains of content across various professional settings (e.g., websites or PowerPoint slideshows in the corporate as well as higher education sectors). These changes give rise to the need to explore the rules that templates built into ubiquitous software impose on layout design as well as how these rules interact with other norms for the use of layout in professional communication. A step towards addressing this need, and thus extending existing knowledge of layout as a key semiotic resource in professional communication, is taken in the exploration of layout in PowerPoint's design and use which we present next.

3 Layout in PowerPoint's design and its use

This section opens with a discussion of layout in the design of the software PowerPoint (the semiotic resources available within it, its interface and help menu) and then proceeds to analyze layout in slideshows designed with PowerPoint for use in corporate presentations and undergraduate university lectures. It employs the principles of grid-based design and composition to illuminate the relationship between layout in the software's design and in its use.

3.1 Comparing layout templates in PowerPoint 2003 and PowerPoint 2007

Unlike professional graphic design software such as Adobe InDesign or QuarkXpress, where the first step in a design project is to create a grid (Lupton 2004), PowerPoint offers layout templates as the basis for slide design. Users can certainly view and use the underlying grid as well as change it, but the help menu encourages them to rely on the "professionally designed" slide templates and themes, at least as a starting point likely to lead to greater consistency.

Default options such as the built-in layout templates also make slide(show) design more efficient, which further increases their potential to influence the layout used in slideshows. Selecting one of these options, starting a new presentation with a title slide, and presenting the written text in the body of a slide as a

bulleted list are choices privileged through their spatio-temporal presentation in the software's interface; by contrast, creating a slide layout not available as a built-in template delays the process of slideshow design, as does not using the "Title Slide" template, which appears when a blank presentation file is opened, or presenting writing in the body of the slide without the bullet points that automatically appear when a user starts typing there (see further Djonov and Van Leeuwen 2012). PowerPoint's default layout options, through their presentation and the possibilities for combining different graphic and typographic elements they make available, thus function to guide users in the semiotic practice of designing slide layout. It is therefore important to evaluate the ability of default options to support effective layout use. In this paper we do so by comparing built-in layout templates in PowerPoint for Windows 2003 and 2007, the two versions most frequently used by participants in our research on PowerPoint.³

The two versions share many commonalities. Layout templates in both have two main types of placeholders: for titles (presentation title or subtitle, slide title and section title) and for objects below the title, in the body of the slide, such as text or still/moving images. When a new presentation file is opened, a title slide automatically appears, strongly suggesting that each presentation needs one. This suggestion is reinforced by the "Title Slide" template appearing first in the default layout menus in both versions. The fact that very few templates ("Blank," "Content") have no placeholder for slide title conveys an expectation that most presentation slides need a title, especially when there is written text in the body.⁴ Typing in all placeholders except those for titles and captions, automatically activates a bullet-point list, the typographic staple of PowerPoint, perhaps with the intent to encourage precision and economy in using words. Every template has built-in styles for font type and size, establishing a hierarchy of information between title and body text, first and second level bullet list items, and so on.

PowerPoint 2003 and 2007 differ markedly in the default layout templates each offers. PowerPoint 2003 offers 27 layout templates organized into four categories (see Figure 7 and Table 1). The label of each template (visible when the

³ Interviews with the participants in our study suggest that it is common practice for users to save time by pasting slides from slideshows designed with earlier versions of the software into slideshows designed with later ones; the purpose of such slide sharing may be either to re-use content and/or to reuse the visual design features of slides (e.g., layout, custom animation, etc.) from previous presentations.

⁴ Title placeholders, moreover, are easier to populate with typed text than images since the latter are not automatically resized to fit the placeholder's dimensions as they are when inserted in placeholders designed for other content.

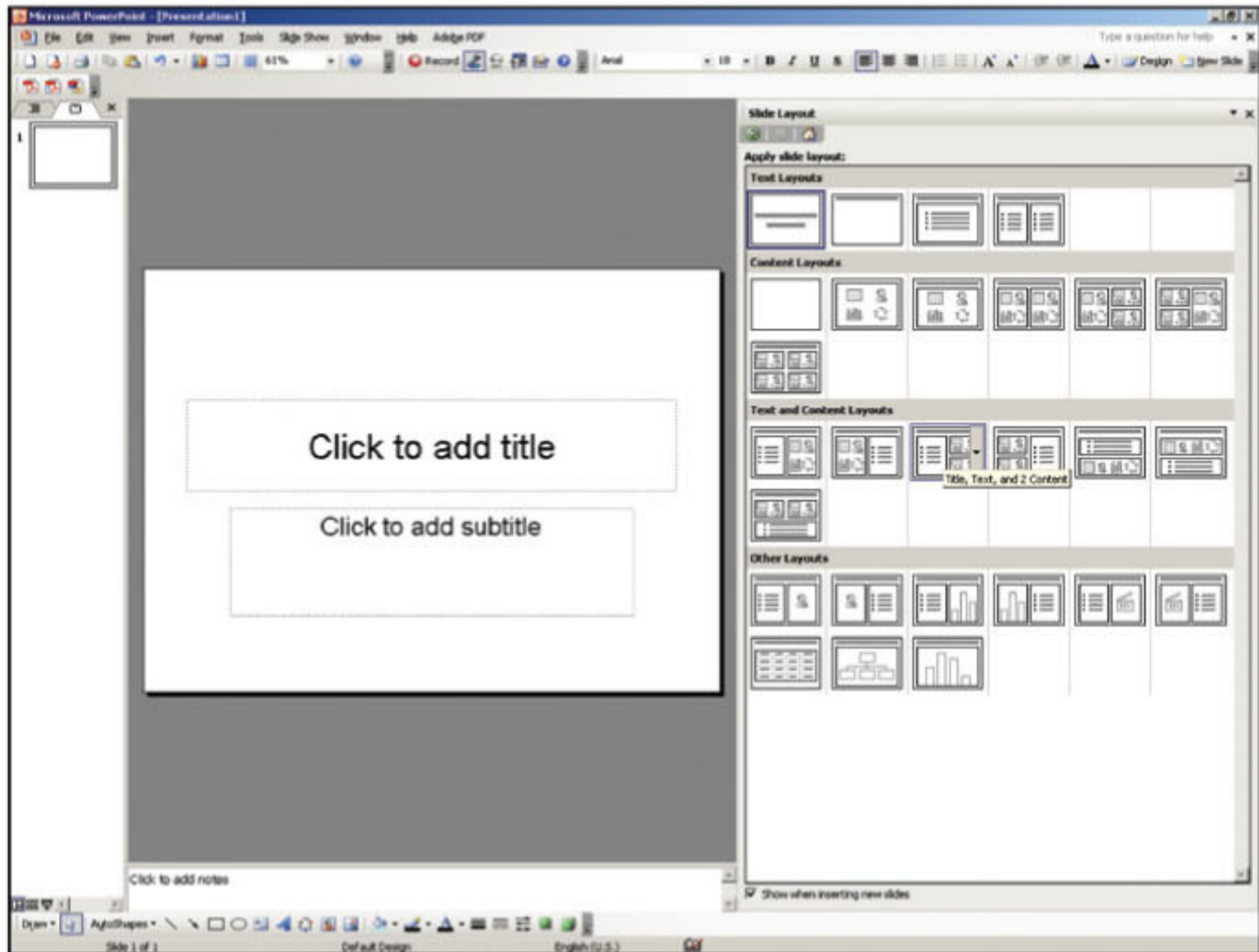


Fig. 7: Default layout templates in PowerPoint 2003. (Used with permission from Microsoft)

Table 1: Categories and labels of default layout templates in PowerPoint 2003

Category	Templates (read from left to right in Figure 7)
Text	Title Slide; Title Only; Title and Text; Title and 2-Column Text
Content	Blank; Content; Title and Content; Title and 2 Content; Title, Content and 2 Content; Title, 2 Content and Content; Title and 4 Content
Text and Content	Title, Text and Content; Title, Content and Text; Title, Text and 2 Content; Title, 2 Content and Text; Title and Text over Content; Title and Content over Text; Title and 2 Content over Text
Other	Title, Text and Clip Art; Title, Clip Art and Text; Title, Text and Chart; Title, Chart and Text; Title, Text and Media Clip; Title, Media Clip and Text; Title and Table; Title and Diagram or Organization Chart; Title and Chart

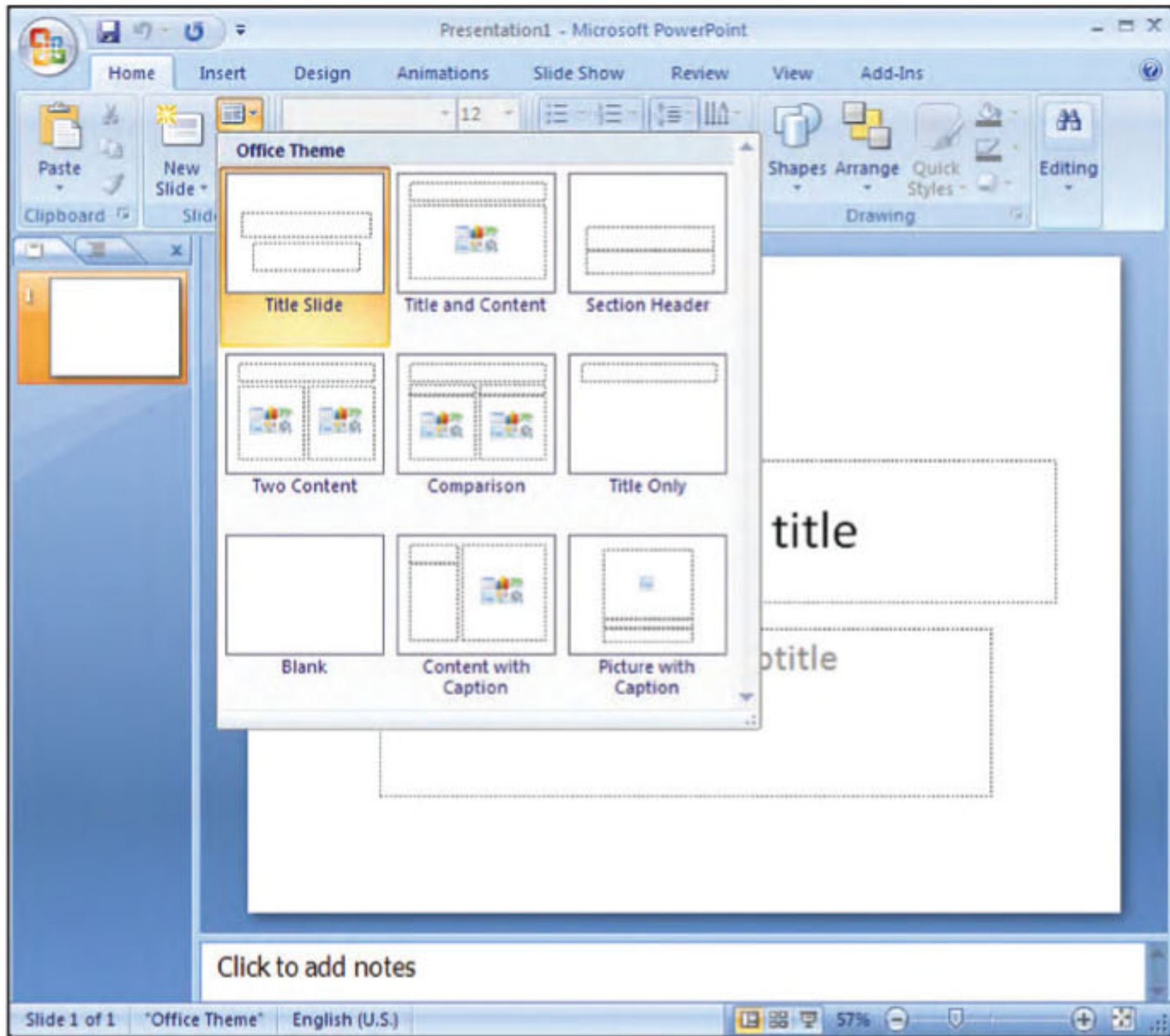


Fig. 8: Default layout options in PowerPoint 2007. (Used with permission from Microsoft)

template's thumbnail is activated as a rollover) lists the (number of) different types of placeholders it features in a top to bottom and left to right order (e.g., “Title, Text, and 2 Content,” “Title and 2 Content over Text,” “Title, Text and Media Clip”).

PowerPoint 2007 offers only 9 built-in templates (see Figure 8), eight of which have a “slide title” placeholder. There are also no designated “text” placeholders but only “content” placeholders, in which users can (as in PowerPoint 2003) type in text or insert images. Unlike that for “text” placeholders in PowerPoint 2003, the thumbnail for “content” placeholders in PowerPoint 2007's menu does not show a bullet list, perhaps because users are expected to know that bullet points would automatically appear when they start typing into a “content” placeholder. New in PowerPoint 2007 are the placeholder “Caption” and four templates –

“Section Header,” “Comparison,” “Content with Caption,” and “Picture with Caption.”⁵

3.1.1 A grid-design interpretation

From a grid design perspective, the main purpose of the categorization, labels and appearance of the templates in PowerPoint 2003 is to make explicit the different types of objects (e.g., text, media clip, clip art) that can be used in slideshows and possibilities for their placement and spatial orientation on a slide. Thus the template “Title and 2 Content” is redundant with options such as “Title, Text and Content” and “Title, Content and Text” as a “content” placeholder can be used for text as well as other objects. Similarly, explicitness seems to be the only reason why there are placeholders labelled “text,” “media clip,” “clip art,” and “(organization) chart” as any of these objects can be inserted in a “content” placeholder. “Text” placeholders are, however, somewhat privileged for text, as visual elements inserted in them are not automatically resized, as they are when inserted in “content” placeholders. The templates also suggest different possibilities for subdividing a slide into spatial zones (although the maximum number is five – title zone over four equally sized quadrants) with different orientation (horizontal vs. vertical). As PowerPoint 2007 has fewer layout templates, placeholder labels and placeholders per template (i.e., fewer spatial zones and more limited granularity) and features no default template with “content” placeholders positioned one above the other, explicitness about the objects (e.g., text, picture, media clip) that can occupy a slide and the possibilities for their distribution on a slide is significantly reduced. So too is the freedom and efficiency with which users can distribute various objects on the slide. While this change may not affect experienced users, it would constrain those who are unaware of or have no time to explore other possibilities for designing slide layout to the default templates built into PowerPoint 2007.

⁵ The drop-down menu in which all nine built-in layout templates are presented is also clearly labelled as part of the default “Office Theme.” As defined in PowerPoint 2007’s help menu, a theme is a “set of unified design elements that provides a look for your document by using color, fonts, and graphics,” and is similar to what in PowerPoint 2003 is labelled “slide design template.” This label draws attention to the fact that selecting another design theme (as in PowerPoint 2003) changes not only the color, fonts and graphics but also the placement of elements in the default layout templates (e.g., in the “Apex” theme, in the “Picture with Caption” template, the “Caption” placeholder is above the “Picture” placeholder, not below it, as in the “Office” theme).

In both versions, the use of default templates ensures visual consistency in the size, alignment, orientation and proportion of elements across slides as well as in the interaction of these variables with variables extrinsic to the grid such as font size, color and typeface. Visual consistency, however, is insufficient for establishing meaningful relations and achieving logical consistency within a slideshow's content. Perhaps with the aim of helping users achieve this aim, PowerPoint 2007 has introduced the four new templates. What distinguishes them from templates in earlier versions (excluding "Title Slide") is that their labels refer to semantic rather than spatial relations, and so prompt users to consider what logico-semantic relations may connect the different parts of a slide or a slideshow. "Picture with Caption" implies that visual material should be accompanied by a written reference to parts of it or elaboration on its meaning, and "Section Header" that boundaries between a slideshow's sections need to be explicitly signaled. Offering guidance on the structure of slideshows appears to be the main reason for the presence of the "Section Header" template as the template "Title Only" can also be adopted for separating sections. The template "Comparison" extends "Two Content" by adding a caption above each "content" placeholder, and so suggests that comparison is a dominant, though not the only, rhetorical relation that can obtain between two pieces of content positioned side by side and presented as similar in their size, orientation, and proportions. It also implies that no more than two pieces of content may be compared on the same slide, and that each should have a caption.⁶

3.1.2 A composition interpretation

In terms of composition, layout templates in both versions predetermine the relative salience and framing of different types of placeholders and design elements such as typography and color within them, without regard for the content users would insert. In terms of information value, neither version makes use of either centric composition (as both employ only eccentric designs) or of triptychs.

The layout templates in PowerPoint 2003 present more possibilities for establishing meaningful distinctions through the horizontal as well as vertical distribution of placeholders in contrast to PowerPoint 2007. The latter follows the convention of placing slide titles in topmost position, as "Ideal," but – with the exception of "Picture with Caption" and "Comparison" – makes no use of vertical polarization for signaling contrasts such as "general/abstract vs. specific/concrete" among

⁶ Using captions can improve the clarity of such comparisons when a slideshow is distributed and read as a document independent of a presentation or written paper, a common practice in both corporate settings and higher education.

objects below the title, utilizing instead only the horizontal distinction between left and right in the distribution of such objects. The potential of horizontal polarization to signify a contrast between Given and New, moreover, is not reflected in labels such as “Two Content” and “Comparison,” as it could be through alternative labels such as “Cause and Effect” or “Before and After.” Thus although the shift in PowerPoint’s design from 2003 to 2007 realizes a move towards turning spatial into semantic zones and configurations of framing, salience, and information value into rhetorical relations, this move provides only implicit guidance on how layout could be employed to signal such relations within a slideshow.

In sum, default slide layout templates in PowerPoint 2003 and 2007 draw on grid-based as well as composition design principles. They are based on a grid with horizontally and/or vertically distributed placeholders imposed over it, and promote certain configurations of elements intrinsic and extrinsic to the grid and of choices from the composition systems of *information value*, *salience*, and *framing*. The templates thus promote visual consistency within and across slides. Compared with PowerPoint 2003, PowerPoint 2007 offers fewer templates and is therefore less explicit about the ways different content objects may be distributed across a slide and assigned different information value and salience, which could further constrain variation in slide layout design. PowerPoint 2007 at the same time has placeholders that demarcate “semantic” rather than mainly “object-based” spatial zones (e.g., “caption”/“content” versus “text”/“clip art”) and draws more attention to the potential of some layout designs to signal broad logico-semantic relations such as “Comparison” within a slide. Despite these changes, as the templates are not designed for specific slideshow content, they – like the software’s help menu, which promotes built-in layout templates as the ideal starting point for designing slideshows – offer no explicit guidance on how a slideshow can be logically organized; rather, norms about using layout in presentation slideshows (e.g., starting a presentation slideshow with a title slide, using bullet lists to present written text, signposting section divisions, and using a title on most slides) are either implicit in and/or applied automatically through the software’s interface (see further Djonov and Van Leeuwen 2012). This raises the question of whether users follow these norms, supplement them with other principles of layout design they may be familiar with, or even seek to subvert them, which we explore next.

3.2 Layout in PowerPoint slideshows

This section considers the interaction between layout in PowerPoint’s design and in its use with reference to slide layout in twenty-seven presentation slideshows

(from ten corporate presentations and seventeen undergraduate university lectures) and a brief discussion of three case studies that illustrate different styles of slideshow layout design.

While there are different styles of using layout in PowerPoint, most of the twenty-seven slideshows conformed with norms built into the software’s design, even in cases which appeared or were reported to be based on the “Blank” layout template. All but two of the slideshows started with a title slide and used the default layout templates available in PowerPoint 2003 and/or 2007. Many also used end slides to present a “Thank You” note, credits, or, in the lectures, references to key readings and some used images such as a company’s logo on every slide as a strategy for establishing identity and cohesion. An example from a corporate presentation, which features the company’s logo in the bottom right corner of every slide, the company banner at the top, and an end slide with contact details is provided in Figure 9. Such examples illustrate conventions that are not built into PowerPoint’s layout menu (e.g., through a placeholder for a logo or a template for an end/references/thank-you slide), yet have a strong presence in the semiotic practice of slideshow design in corporate and higher education settings, and evidence that normative discourses other than a software’s design (interface and help menu) also influence the design of slideshows (see Djonov and Van Leeuwen

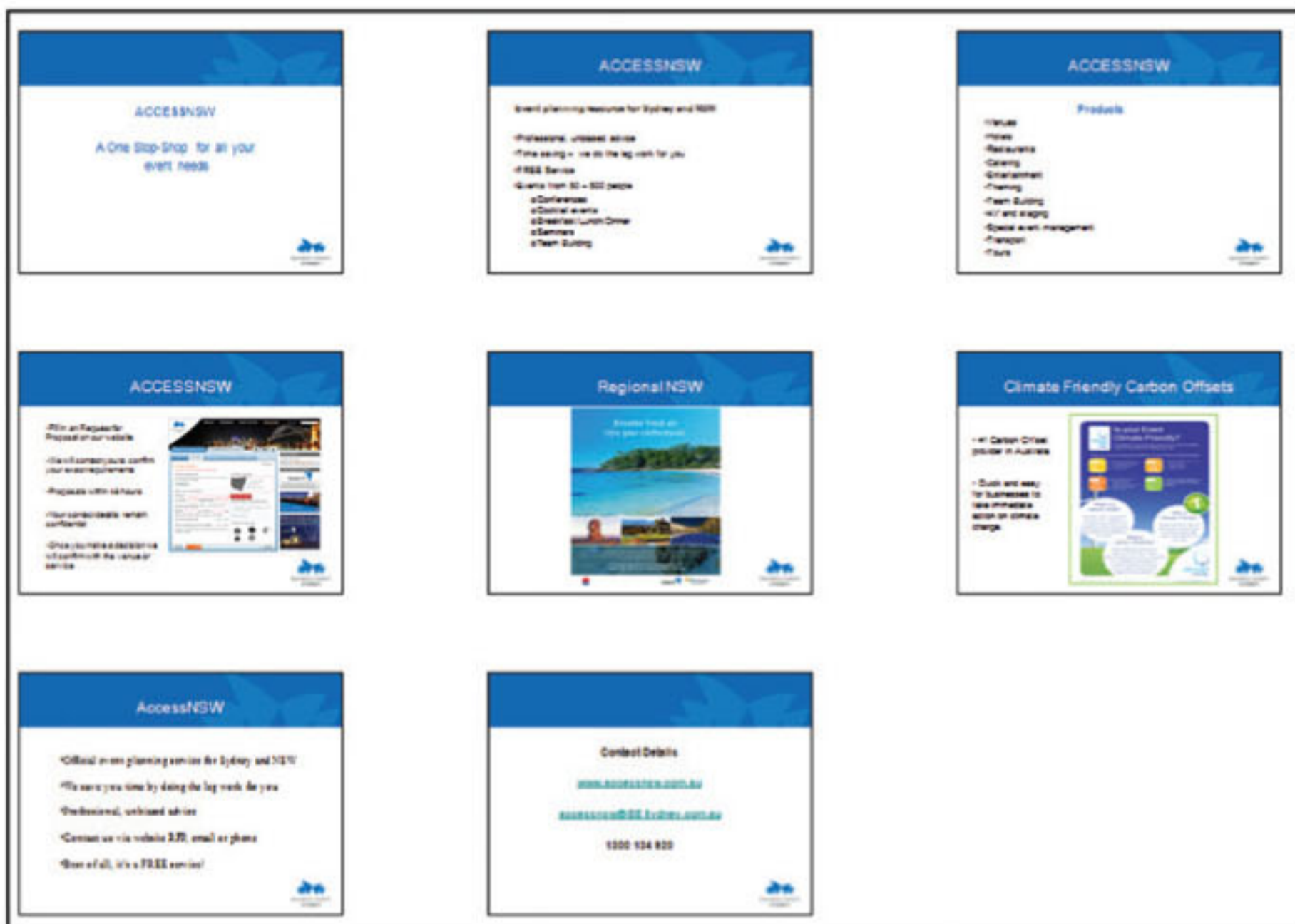


Fig. 9: Corporate presentation slideshow with end slide and company logo

2012 for a model for analyzing normativity in the interaction between software design and use).

Turning to the layout of individual slides, excluding title and end slides from the total number of 747 slides taken from all twenty-seven presentations leaves 707 slides (94.6% of the total slides), which we call “content slides.” Of these 707 slides, 620 (87.7%) had a title, 469 (66.3%) featured written text in the body, and 263 of those 469 (i.e., 56%) used bulleted lists to present all or some of that text (see Figure 10). This departure from using bullet points needs to be interpreted in light of the observation that many of the slides that illustrate it in our data nevertheless present text in the body in list-form; in other words, despite not marking each list item with a particular typographic symbol, they meet the expectation that a presentation would offer a number of items/points for discussion.

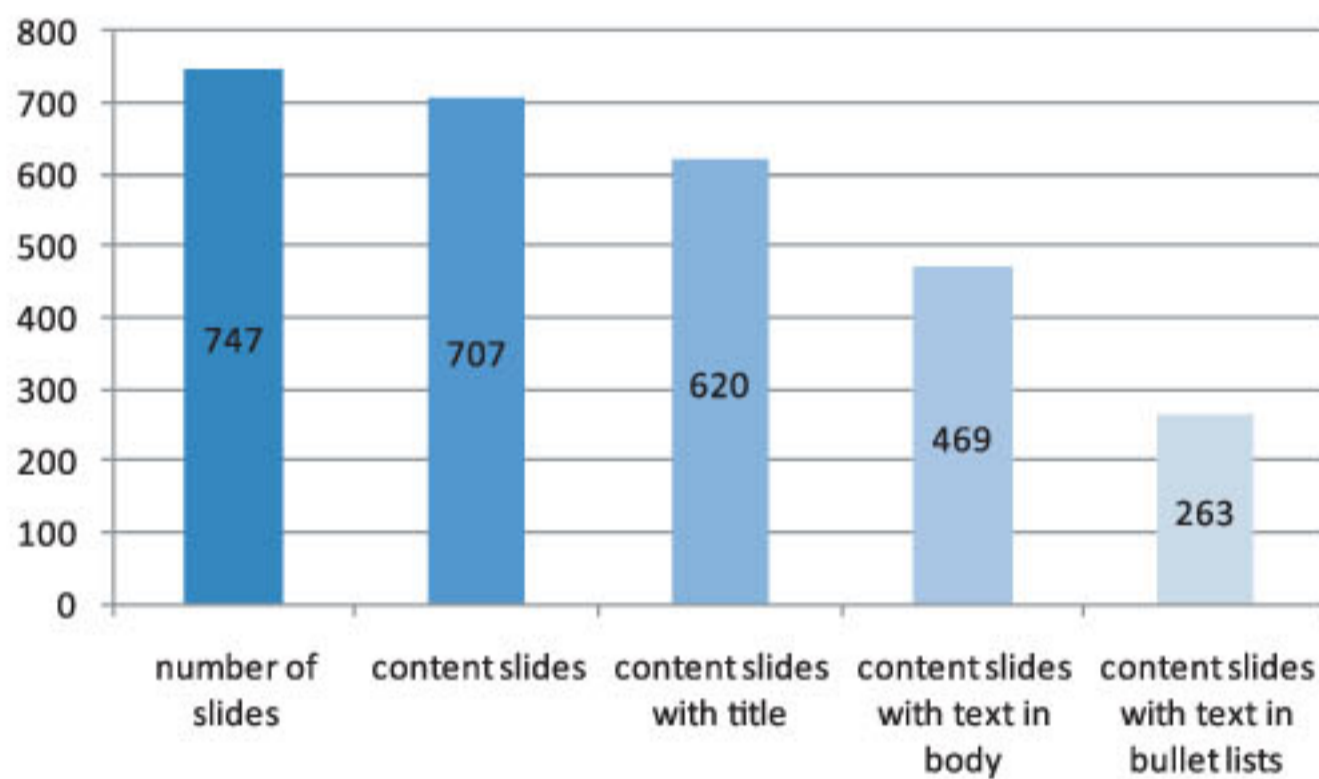


Fig. 10: Trends in slide layout design across 27 slideshows

These basic observations of our data suggest that the way layout is presented in PowerPoint has a significant, albeit not exclusive, influence on the layout of slideshows designed with the software. Considering the layout of individual slideshows in light of their use in presentations and of insights gained from interviews with their authors, on the other hand, reveals that users also follow layout design principles other than those promoted through the software’s design. In our data, the 17 university lecture slideshows, most of which belong to the broad field of cultural studies, displayed much higher variation in the use of layout design principles beyond those built into the software, as the three case studies presented next illustrate.

In a lecture on globalization in a large first year undergraduate geography unit, a lecturer drew on graphic design principles and used grid-extrinsic re-

<p>OUTLINE OF LECTURE </p> <ol style="list-style-type: none"> 1. Introduction: <i>Spatial Diffusion</i> 2. Globalisation of Culture: <i>Characteristics</i> 3. The Empire Strikes Back: <i>Reasserting the Local</i> 4. Transcultural Sounds: <i>Glocal Music</i> 	<p>1. INTRODUCTION </p> <ul style="list-style-type: none"> • Cultural diffusion: transmission of <i>ideas, practices, information & other intangibles</i> from one locale to another → the world as a single “cultural community” • McWorld: shared cultural codes, lifestyles, practices, value systems, ideologies 
<ul style="list-style-type: none"> • (i) Originator: place of origin • (ii) Carrier: spatial pathways • (iii) Adopter: place of adoption/destination • (iv) Barrier: spatial & social hindrance • (v) Scales: micro, local, regional, global 	<p>2. GLOBALISATION of CULTURE </p> <ul style="list-style-type: none"> • Held et al. (1999): lived & creative expressions of a group of people • Cultural expressions: architecture, art, texts, fashion • Lived cultures: political system, language, social value, lifestyle trend, music 

Fig. 11: Slideshow layout using grid-extrinsic resources

sources such as color-coding and the repeated use of a logo symbolizing the topic to establish cohesion and coherence within and across slides. Figure 11 features selected slides from this presentation that show red font, numbering, blue background banner and the image of the globe combined in order to signal the beginning of a new section in the lecture and blue font used in the body of slides to highlight important concepts.

These slides illustrate the importance of clarity and consistency in slide design, values the lecturer emphasized in an interview conducted as part of this research project:

I always have a few principles: clear headings, you must have those blue headings so people know we have moved to another section because sometimes . . . I may not articulate that orally but visually once you see the blue thing with the globe you know we have transitioned into a new section . . . The other principle is that 3a would never merge with 3b, so even if it is a brief thing 3a and 3b would not be on the same slide.

These slides, however, also exemplify consistency giving way to diversity as the globe on the second slide is specific to the example (McWorld) discussed in the lecture's introduction section, and clarity giving way to ergonomic constraints such as legibility on the third slide where red font alternates with blue to highlight important concepts on adjacent lines or differentiate the bullet point from words presented on the same line (or as the lecturer explained: "The words are highlighted in blue because the bullet is red, so it's a bit of a contrast"). The interview also revealed the lecturer's perceptions of ergonomic constraints on students' attention as the motivation driving the inclusion and placement of images vis-à-vis words on most slides: "So the visual is always important because it reinforces the message. But back to the human mind and human psychology just having a lot of words and not having a visual break which is different texture from words, to me that allows you to somehow get information just faster." Following such perceptions, rather than principles of grid-based design or composition, and including one or more images on almost every slide, regardless of the default layout template it was based on, resulted in reduced visual consistency across slides in this slideshow.

Another slideshow, from a first-year undergraduate cultural studies lecture on the senses and specifically touch, overcomes this problem by adhering closely to the software's layout templates, in addition to adopting a built-in design theme related to the lecture's topic. At the same time, much of the slideshow's design follows the composition principle of information value. As the body of slides in PowerPoint's built-in layout templates relies primarily on horizontal polarization, the top two slides in Figure 12 (which follow each other in the slideshow) are based on the contrast between Given and New, which the lecturer reported as having influenced the slideshow's design ("I must say the Kress and Van Leeuwen Given-New structure goes through my head occasionally") alongside principles from cinematography and website design. In the top two slides, the image of the fabric on the left aims to evoke a more immediate sensual response to the tactile texture it represents. By contrast, the writing on the right introduces a more abstract idea – in the first slide, that the senses play a role in people's understanding of their world, the sense they are able to make from and within it, and a specific case study researched by the lecturer, on the semiotic and socio-cultural value of touch, in the second slide.

Considered together, the slides in the lower half of Figure 12 (also consecutive in the slideshow) illustrate the Given/New contrast extended across slides. The second of these two slides treats as Given the dominant Western tendency to devalue the body and treat it as treacherous, a notion introduced on the previous slide. This notion is reflected in the quote in the bottom left corner of the second slide, from a review of an exhibition of Ron Mueck's sculptures. This connection



Fig. 12: Slideshow layout using composition principles

between the two slides is also revealed in the speech that accompanied the second slide in the lecture, especially by the continuity marker “so”:

So we've got this long history of constructing the body and because the body has the senses as treacherous which is um a point that was made by uh one of the reviewers of um an exhibition of Ron Mueck's and you can see some of Ron Mueck's work there. And as uhhh the reviewer made the point that “Touch, the sense which Mueck's rendering of warm, heavy, flesh or fine, downy hair most arouses, has been deemed unreliable, dangerous or even morally questionable.” So thinking out from that sentence, that whole preoccupation with uhh Western uh thinking with the body as a source of treachery rather than a source of knowledge.

The images of Ron Mueck's work on the right, by contrast, have the potential to stimulate alternative interpretations of touch and texture as they are given no interpretation by the lecturer. This slideshow thus suggests that awareness of composition principles can help organize slideshow content coherently,

while adopting the layout principles built into PowerPoint promotes visual consistency.

Yet, this slideshow also illustrates the risk that the visual consistency built into PowerPoint's default layout templates and design themes may obscure the semantic relations between different content elements. For example, the first bulleted point used to introduce the sense of touch as an example on the second slide in Figure 12 raises the unmet expectation that other examples/senses will be discussed subsequently, while the bulleted list on the third slide (reproduced in Figure 13) presents as visually similar points that belong to different levels of abstraction – the idea that touch is a universal aspect of embodiment and examples of how touch is viewed in two different cultures. Such examples are common across slideshows in our data and can be attributed to the limited guidance available to users of software that promotes “new writing,” such as PowerPoint, on how to produce such writing effectively, that is, how to establish cohesion and coherence visually or through visual-verbal relations, rather than through verbal (syntactic or discourse-semantic) structures alone (Van Leeuwen 2006, 2008, 2010; on bullet points in new writing practices see Djonov & Van Leeuwen 2014).

- | |
|--|
| <ul style="list-style-type: none"> ■ Touch is a fundamental aspect of embodiment - defining embodied being ■ Anlo-Ewe people of West Africa describe consciousness via the concept, <i>seselelame</i> - touch or feeling in the body (literally: feel-feel-at-flesh-inside) ■ Mind/ body split of western ontology devalues the body: consciousness configured as ‘mind’, of the mind/ intellect |
|--|

Fig. 13: A bulleted list with misleading visual consistency

A strong desire for freedom from the selected rules of “new writing” imposed through PowerPoint's layout templates could further limit a slideshow's cohesion and coherence. This is exemplified by a slideshow based exclusively on the “Blank” layout template, from which two consecutive slides are reproduced in Figure 14, where quadrangles and labels replace the images used in the original presentation.

This slideshow, from an undergraduate journalism lecture on spin in the news, as an interview with its author revealed, follows a “scrapbook approach” to slide layout in that its design is guided by available examples that can illustrate key points, rather than by the concept or theory that underlies these points. Its layout design reflects individual preferences as well as awareness of usability constraints, as reflected in this explanation about the choice of font for the slide-

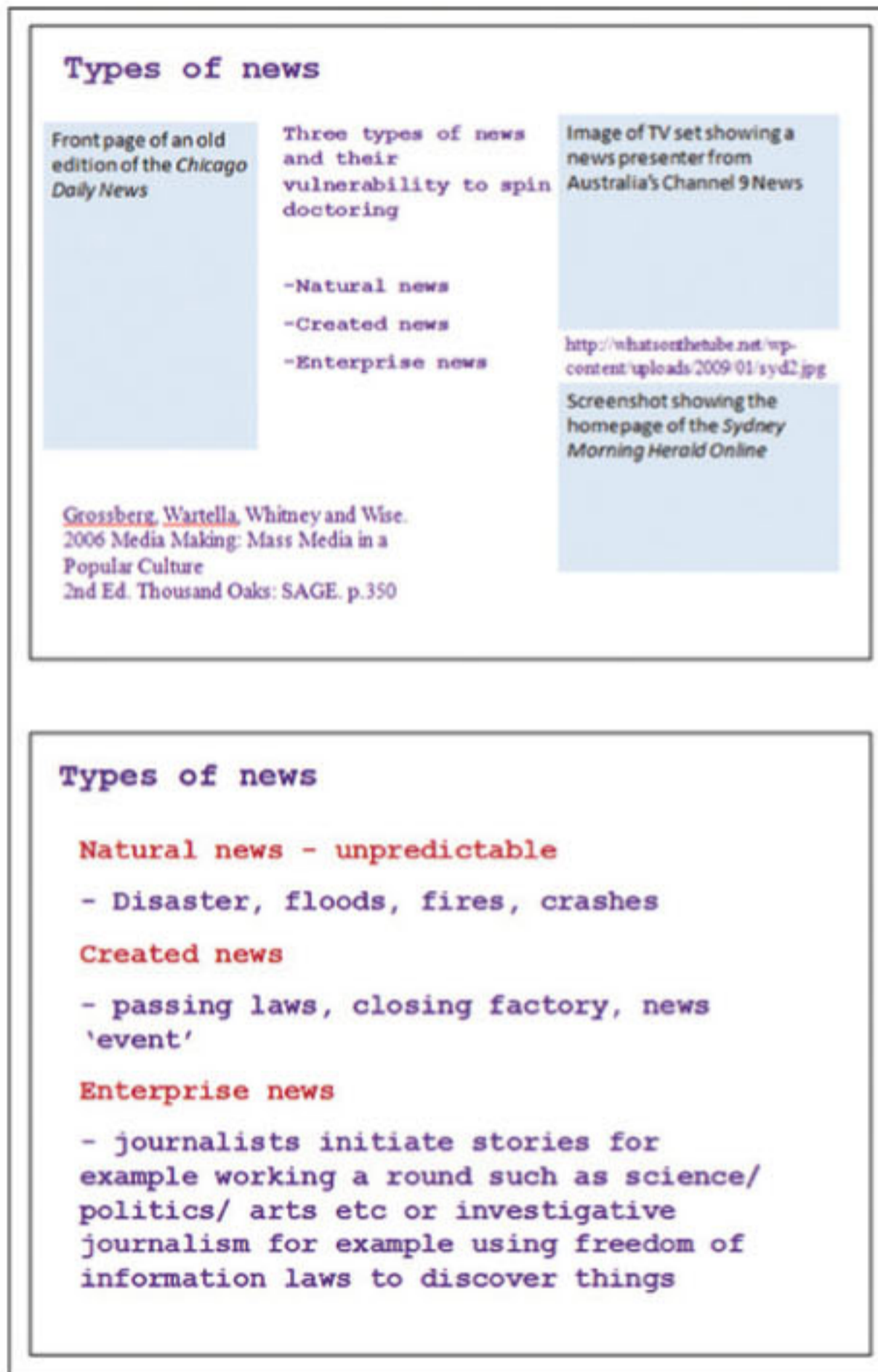


Fig. 14: Slideshow layout using “scrapbook” approach

show: “I’m a journalist and I think it’s good to have a distinct style. And it’s nostalgic and you’ll see that a lot of films have typewriter-like fonts for the credits. It is nostalgic and I was using American Typewriter but it was terribly unreliable on PowerPoint so now I use Courier New.”

The slideshow also adopts principles of newspaper layout design; for example, profile shots of people are placed so that their gaze would point the readers’ attention to the writing accompanying these images, rather than away from it or from the current page (“in newspapers normally . . . you would have the face looking in. So here this face, the face points to the left so it would push me to put the text in the right. That’s a journalistic layout thing.”).

Although this slideshow follows some of the principles promoted by the software's design such as using bulleted lists and slide titles, starting the design for each slide with the "Blank" slide template has resulted in a considerable break away from both grid-based and composition choices built into PowerPoint. The top slide in Figure 14, for instance, includes in its bottom left corner a reference to a source that describes three main types of news, bullet-listed in the middle of the slide (natural, created and enterprise news), in terms of the vulnerability of each to spin. As no grid-based template has been used, visual alignment is limited; the reference is neither aligned with the bulleted list nor centered at the bottom of the slide, which obscures its relation to other information presented on the slide, particularly when the slide is interpreted independently of the speech that accompanies it. If the reference is ignored, the body of this slide presents a triptych, a centered composition that none of the default layout templates supports. This triptych, however, does not lend itself to an interpretation based on the choices comprising the system of *information value* as the bulleted list in the center presents a classification of news (natural, created, and enterprise news) rather different from that represented by the three images on its left and right (traditional print newspaper, TV, and online news). Although it may be possible to interpret the classification in the center as a Mediator, as suggesting that these three types of news are susceptible to spin regardless of medium or that they were as susceptible in the past (represented by the image of the old edition of *The Chicago News* on the left) as they are in the present (represented by the images on the right, of a TV news presenter and an online newspaper's homepage), this interpretation is not supported by the accompanying speech, which mentions only the classification in the middle. The discrepancy between the two classifications of news presented on this slide, as well as the slide's key focus, becomes even more apparent as the categories of natural, created and enterprise news are defined on the following slide (see Figure 14). The relationship between these two slides then highlights problems with treating individual slides as independent units of meaning in the design and interpretation of slideshows ("I don't think that far ahead it's just about what I want to get on the slide and whether it's a flowing sentence.").

To conclude, the survey of twenty-seven slideshows exemplifies users' tendency to follow the layout design principles that designers have built into the software. The three case studies, on the other hand, reveal that the implicit guidance that PowerPoint's design provides is insufficient to support the effective use of layout in slideshows, and that, given enough freedom, users may draw on additional layout design principles. The analysis presented in this section also suggests that to use layout so as to establish cohesion and coherence within a slideshow (independently from the speech and body language that accompany the slideshow in presentations) users need to understand how the principles of

grid-based design and composition built into PowerPoint's layout design menu can help establish meaningful relations within a slideshow's content.

4 Conclusion

This paper has explored layout as a key semiotic resource in visual design and in the design and use of the software PowerPoint. Drawing on the grid and composition as central tools for designing and analyzing layout, we have conceptualized layout templates as a means of imposing norms on layout design, and argued that the templates provided in ubiquitous software can impose such norms not only on specific genres or within a given institution, but on ever larger domains of content (e.g., presentations across different social contexts).

As our analysis of layout in PowerPoint's design reveals, alongside the software's interface design and help menu, PowerPoint's default layout templates have the potential to constrain the use of layout in slideshows by promoting specific configurations of choices that the software's designers have made on the basis of their awareness of layout and other semiotic resources as well as of principles for the effective (co)deployment of these resources (e.g., visual consistency). The decrease in the number of layout templates available in PowerPoint 2007, compared to those in PowerPoint 2003, can thus be seen as a step towards limiting both variation in the layout of slideshows and PowerPoint users' awareness of layout as a semiotic resource, that is, of choices available for making meaning with layout beyond those promoted by the templates in the software's menu and/or commonly encountered in slideshows. These observations reflect Kress and van Leeuwen's argument that both the availability of semiotic resources and meaning-makers' awareness of the limitations and affordances of these resources influence the process of design, of selecting which discourses, or "socially constructed knowledge(s) of (some aspects of) reality" (2001: 4), will be realized through which semiotic resources in a given communication practice.

Our survey of slideshows created with PowerPoint evidences the software's considerable capacity to impose certain norms on the use of layout in slideshows. At the same time, a closer examination of these slideshows and insights gained from interviews with their authors reveal users' awareness and use of semiotic resources and design principles (e.g., from newspaper design, social semiotics, and psychology) beyond those promoted by the software's design. This is particularly noticeable in the examples from undergraduate cultural studies lectures presented in this article, which echo two more of Kress and Van Leeuwen's (2001) arguments about contemporary multimodal communication. The first is that

there is often no clear boundary between design and production, the material articulation of a semiotic event or artifact, as “at any point the implementer of a design [e.g., the user of PowerPoint] can become a designer with a respect to a particular facet of the productive process” (2001: 56). The second is that design is always contingent on the specific domain of practice in which it is embedded; the cultural studies lectures in our data display greater design freedom and authorial awareness of semiotic resources and principles than the corporate presentations.

The paper has also highlighted the significant role layout plays in establishing cohesion and coherence, often in collaboration with other visual resources and language, in contemporary professional writing as exemplified by PowerPoint slideshows, which are frequently distributed and required to make sense on their own. This need cannot be met either by blindly conforming to the highly implicit layout design norms built into PowerPoint’s interface design and templates or by subverting them. Rather, producing cohesive and coherent “new writing” with ubiquitous software requires awareness of the meaning-making potential and limitations of both the conventions for layout design supported by such software and principles developed for using layout effectively as a semiotic resource in the culture in general.

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