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Graphic Devices: Narration and Navigation

Readings of narrative texts rarely include attention to the graphic devices that structure presentation in print or electronic formats. These devices are rendered largely invisible by habits of reading. But, I would suggest, these graphic elements do more than structure the conditions in which narration is produced. By their hierarchy, arrangement, organization, and other features they contribute to the production of the narrative in substantive ways. In my usage, the term *graphic* includes all aspects of layout and composition by which elements are organized on a surface, though "surface" is a deceptive term for describing the temporal and spatial complexity of books, comics, and other textual instruments. In an electronic environment, this complexity goes even further—since the screen surface is clearly an illusion concealing a complicated model of narrative possibilities under a fully-rendered visual interface.

Navigation, the other term in play here, refers to the active manipulation of features on the level of discourse and presentation. Though many of my examples are drawn from illustrated books or other dramatically visual materials, I would argue that graphic devices play an active role in all instances of textual presentation, not only those in which images or pictorial elements are present. My goal here is to demonstrate that these graphic devices can be read as an integral part of narrative texts. Demonstrating that the graphic devices that appear to constrain discourse functions also contribute to the chronological experience of events (within

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either the presentation or the story) will tend to shift my argument towards a transactional, reader-based production of narrative and away from a more strictly structuralist or formal analysis of story texts. But the benefit will be to include aspects of navigation, encoded as graphic devices, in our understanding of narrative production. These navigational elements are historically and culturally specific, and thus learning to read them provides another way to understand the foundational assumptions and ideological values that form and inform a text. Graphic devices, in other words, are a dimension of narrative texts—sometimes more obviously involved in presentation, at other times actively contributing semantic content—available for analysis and interpretation if we can attend to their particulars through an appropriate descriptive language. This paper outlines ways to conceive of the role of graphic devices as an integral dimension of narrative texts.

In an essay titled "The Illustrated Short Story" (included in the 2004 anthology, *The Art of Brevity*), Stuart Sillars makes a case for analyzing the placement of images in short fiction published in late 19th century journals.[1] His example is taken from *The Harmsworth Magazine*, and is designed for readers whose attention spans and time allocations were shaped in part by patterns of reading that had sprung into being with suburban railway lines. The historical and cultural specificity of this graphically structured reading mode embodies its reader-subjects, collapsing assumptions about *how* they read with *what* they read. Charles Kennett Burrow's "The Golden Circlet," the tale under consideration, was published in 1898, accompanied by images by the artist Ralph Peacock. Sillars argues that the images in the story are positioned so that they anticipate the events in the narrative, never follow them. Their presence shapes the reader's idea of the outcome of the story. Anxiety, question, confrontation, climax, and resolution are all neatly signaled in a series of five illustrations. Their "content" is sentimental, predictable, and perfectly coincident with the middle-class values of labor rewarded and family commitment that form the core of the story. The visual details they provide confirm masculine and feminine types and circumstances of middle class standing, including proper dress, body language, and grooming that are not duplicated in the verbal descriptions in the tale.

But their conventional and legible pictorial information is not the only focus of Sillars' discussion. No one would dispute the contribution of images to the narrative content of an illustrated text. But the more subtle aspect of his argument is as likely to escape notice as the features to which it attends. That point is that the graphic *placement* of the images plays a crucial part in the way they produce meaning within the text. In other words, Sillars reads the structuring effect of the layout as an integral feature of narrative production. Paragraph indentations, placement of images, section breaks, or other basic graphic features organize the presentation of the textual elements, even though they are presumably extra-diegetic. On the surface, their work is largely *navigational.* Graphic features help us find our way; they keep us oriented to our location within the story and the publication, and help us chart our reading path section to section and page to page. The layout punctuates and orchestrates the textual presentation. But do these graphic elements

contribute to the *narrative* or do they remain extra-diegetic? Since the graphic armature inflects the story, it is not only an element of the discourse field, but enters into the production of the narrative.

The distinction between the text-and-image elements of narrative and the elements I will identify with the general term *graphic devices* is crucial. Graphic devices are elements of layout and composition that organize and structure the presentation of narrative elements—in that sense they appear to be elements of discourse. The graphic devices include headers, page numbers, spacing, and margins in print materials; framing and diagrammatic elements in print and electronic media; and any other visual element that serves a navigational purpose. Navigation activity includes orientation and location within a work as a whole. Navigational devices provide the means for moving through or manipulating the sequence of the elements that constitute the narrative. Page numbers are clearly navigational devices, for instance, not narrative elements, though the milestones they provide for marking progress also have an impact on reading, and this is where the blurring of lines between discourse and story, navigation and narration, can first be noted. (An action taken early in a narrative has a different value attached to it within the story world than the same action taken later when, as knowing readers, we have already built our story space and modeled our expectations for narrative resolution. So noting *where* one is in navigating the narrative determines the meaning or value we attribute to elements in the story.) Margins and layout features are simply navigational elements, but when they encode fundamental information about the narrative organization and structure, they also blur the distinction between presentation and content. The contrast between the size and layout of body text and that of chapter titles, whose size and placement (often in headers) frames the reading of the textual and visual material bracketed under its rubric, also carries a narrative implication. Some might disagree with this, but consider the way a chapter title, by its size and its role in naming and framing the chunked section of a work for which it is the guiding rubric, actually inflects the story. That framing role is announced discursively—in size and placement—but acts performatively on the narrative. The emphasis granted a chapter title, set off in larger type, gives it a defining role. If it appears in the running head, it becomes a refrain against which the chapter text contrasts as it unfolds. The graphic facts of presentation participate in the textual field in this instance, inflecting the semantic value.

The navigational features I'm calling to attention here are all graphic. They are elements that often pass unnoticed, rendered invisible by familiarity or by the inconsequential role they are usually assigned. Calling these features back into visibility is preliminary to addressing the way they engineer narrative experience and encode ideological values (like those about time and reading pattern in the example of "The Golden Circlet" above). I think it is essential to keep the distinction between discourse and narrative intact in this discussion, in order to gauge how graphical features of navigation shift allegiance, sometimes participating in the constraints modeled into presentation, and sometimes contributing to the story either by inflection (as in the case of the chapter headings described above) or

through substantive content (images, italic, marked breaks and ellipses, or other devices that border on semantic). My definition of narrative acknowledges the temporal unfolding of events within a story, and the structural and material fact of texts, images, books, web environments—but it also stresses *narrativizing* as an action taken by a reader. In the narrow sense, I want to demonstrate that graphic devices contribute to story, that they are part of that chronological sequence of events and introduce links of causality. But in a broad sense, I want to demonstrate that graphic devices model the discourse field in ways that constraint or engineer the narrative possibilities for a reader. Narrative, in that latter, readerly experience—particularly in the new media environment—is an effect of reading rather than a structure within the text, and coherence is produced across a sequence of textual, visual, and graphic elements. In that instance, however, chronological causality is implied—the result from a reader's urge for meaning, closure, or resolution of the experience. Such a "produced" narrative might not be engaged with fiction or structured texts with an explicit narrative arc, but would be understood as the tale constructed by a reader to impart coherence to the experience of reading. Such a definition is far too broad for textual analysis, but it serves a purpose in describing the way the navigation of environments that are not themselves narrative (web sites) produces a narrative effect (clicking here or there *because* one is motivated by a desire to know what is *next,* what *follows,* or to reach a resolution or register a cognitive state change about an event). By invoking the ideology of graphic devices, I mean to call attention to the way these encode the values and beliefs in any historically specific cultural circumstance. The term ideology carries no valence on its own, and my descriptive use of the term is neither pejorative nor celebratory.

Sillars's example shows that the cultural history of reading practices (including social profiles and demographics of imagined audience, the situated-ness of fiction within class-based regimes of transport, labor, and leisure) are all interconnected in these graphic features. Rather than being an incidental and trivial aspect of a "story's" production, the graphic organization of the work shows its ideological operation at a meta-level where assumptions create an order of things "narrative" shaping expectations, even outcomes. The format of "The Golden Circlet" conforms to rules and procedures never made explicit, though they are commonly understood within the publishing world of turn of-the-century journals—and fully encoded in practices common and conventionalized in its sphere.

Trying to describe this graphic armature with a terminology from narrative theory stretches the critical vocabulary. The term graphic refers to the distribution and organization of legible elements on a surface. Within the field of layout and composition, basic graphic variables enact their own semiotic operations of difference. Jacques Bertin, the French semiotician of cartography, identified seven basic variables—color, size, position, orientation, tonal value, scale, and pattern—with the neatness that structuralist accounting brings to its critical approaches. Useful as these are, they don't provide a vocabulary for relations—either of the stark, mechanistic variety that was the focus of gestalt psychology and its visual analytics, or of the sort that comes from literary study, psychoanalysis, linguistics, and

cinema. A more elaborate typology of relations emerges from montage (Sergei Eisenstein in particular, and other members of Russian formalist circles) and other descriptive semiologies (Roland Barthes, most conspicuously, with his contributions in the form of anchor, relay, and "third meaning").

But again—and I repeat this for deliberate emphasis—the "graphic" devices I want to call to attention here are of another order. They are not incidental aspects of verbal-visual relations. Graphic devices constitute their own order of meaning-producing elements. Their syntactic *and semantic* qualities enact a powerful rhetoric of inter-textual connections and structures. This rhetoric is articulated through graphic means, *as* graphic means, creating relations among the familiar verbal-visual-pictorial narrative elements. Graphic devices don't just "serve up" such narratives in some decorous manner. They are frequently integral and substantive aspects of meaning. The armature often passes as *mere* navigation device—directing the reading of a textual field. But in many instances, such navigational elements participate directly in the production of semantic aspects of the story being told.

The larger stakes in such an inquiry go right back to Sillars's example. His cultural reading of "The Golden Circlet" elements connects the engineering of that layout with the ideological circumstances to which it aligns its readers. Such alignments, encoded as normative structures that disappear through their naturalized familiarity, are all over the present environment of web-based reading and its peculiar combinations of narrative substance and navigational (discursive) features. Other critical debates have arisen with regard to electronic narratives and the challenges they pose for conventional narrative theory. (Here I'm gesturing to the critical literature of cybertext theory, particularly those discussions initiated by Espen Aarseth.) Those debates are not my focus, but, as in many instances where critical work encounters digital artifacts, I find the awareness that this encounter brings to our relation with traditional forms and formats useful. Leaving aside some of the challenges posed by cybertext to narrative, we can still look at electronic texts for the insights they provide into the workings of books, diagrams, and graphic art. We lack a critical vocabulary for talking about graphic devices in *every* reading practice. So I draw my examples from four different reading environments: books, graphic novels/comics, diagrammatic images, and digital works. In doing so, I want to demonstrate that graphic features order, direct, and organize the sequence or encounter of visual and textual elements in a way that often collapses the clear distinction between navigational and narrative domains.

Navigation conventions in the codex book are so familiar we forget they derived for and from specific purposes. Take a standard layout for fiction (for example, the Oxford paperback edition of Wilkie Collins's *The Law and the Lady*, though any standard book contains these generic features). The page has a header, page numbers, paragraph indents, chapter title, and space before and after the chapter division and titles. The text block leaves ample room for margins adequate for holding the book. We find our place, read, and turn the pages according to well-accustomed habit. So well-accustomed, in fact, that the history of this elaborate and highly articulate apparatus is lost in the mists of bibliographic time. But

centuries of monastic reading and copying occurred before the appearance of page numbers or paragraph indentations. These are navigational features. For sequential, uninterrupted reading, they weren't needed. As Malcolm Parkes showed in his 1976 study, the navigational features that are now common garden variety supported scholarly analysis, random access, and non-serial reading. But they also carry rhetorical emphasis, structuring argument, creating pause, effect, and conceptual punctuation within a text. Some basic textual apparatuses create a metatext that presents the argument and shape of the book in summary form such as a table of contents; and at that stage, the hierarchy of graphical ordering and the typology imposed by size, font, and other features, borders perilously close to semantic value. Other apparatuses organize the hierarchy of information, commentary, and authority in the forms of bibliography, footnotes, marginalia, and indexes of various kinds. Attached to the text block, or body, these para- and meta-texts rely on their own graphical features for legibility and functionality. Polyglot bibles, Talmudic commentary, and other highly structured texts make a dramatic demonstration of this (e.g. Euclid's geometry in Ernest Ratdolt's fifteenth–century edition). In one sense, the graphic organization of these pages is a kind of convenience. The layout simply serves the content. But *does it constitute* content? Does the proximity of commentary to text, the contrast of handwritten to printed marginalia, the use of italic fonts for emphasis, contribute semantic value? Certainly the semantic elements of a geometry proof depend on graphic structure and spatial order to mean what they say. The relation of parts to whole, and the ordering of graphic and textual events guide us through the commentary or, in case of the geometry text, the proof. These elements thus structure the causal relation of elements to each other within the temporal unfolding of the reading event. In a geometry proof, reading elements out of sequence or spatial organization would cancel some of the sense. A commentary placed randomly within a text would not dialogue with the same import. In extreme cases, the loss of graphic format features results in a cancellation of meaning. Words and numbers shaken out of a railway timetable lose their value entirely. Though a timetable is not a narrative text, it is a dramatic demonstration of the ways discourse and presentation are integrated with semantics. My argument is that the structure of book pages works similarly, through a semantics of graphic syntax.

Obviously, the headers in Collins's novel and section distinctions in Talmud or Euclid are navigational features. They organize the presentation of the text in graphic form. They are useful, but trivial, readily discounted in the semantic field. A header restating the book or chapter title only serves a vague mnemonic function, quickly absorbed into peripheral vision except in artist's books or other anomalies where every opportunity for text becomes an occasion for invention. Then new themes and content appear with the spontaneous generative energy of opportunistic organisms. For example, the "Table of Contents" from artist Brad Freeman's *Muzelink* records the development of his book from one stage of conception through a series of production phases, each of which altered the original section titles, page sequences, numbering, and so on. **(Figure 1)** This much annotated and altered table of contents, in a book that shows the workings by which a

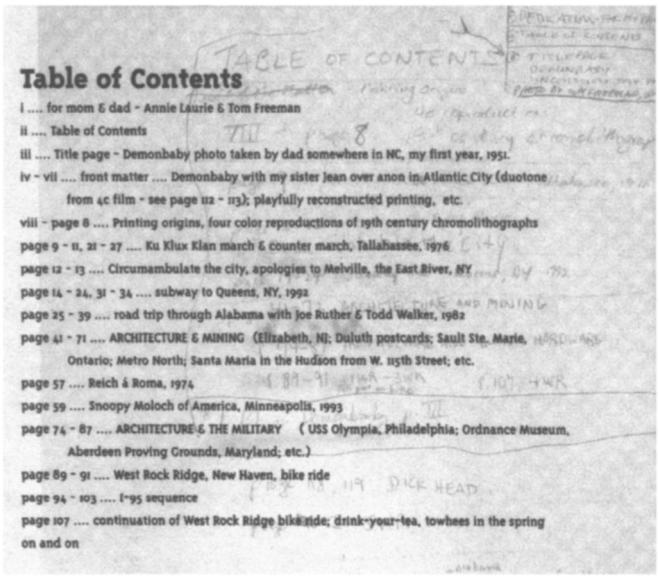

Table of Contents

i .... for mom & dad - Annie Laurie & Tom Freeman
ii .... Table of Contents
iii .... Title page - Demonbaby photo taken by dad somewhere in NC, my first year, 1951.
iv - vii .... front matter .... Demonbaby with my sister Jean over anon in Atlantic City (duotone from 4c film - see page 112 - 113); playfully reconstructed printing, etc.
viii - page 8 .... Printing origins, four color reproductions of 19th century chromolithographs
page 9 - 11, 21 - 27 .... Ku Klux Klan march & counter march, Tallahassee, 1976
page 12 - 13 .... Circumambulate the city, apologies to Melville, the East River, NY
page 14 - 24, 31 - 34 .... subway to Queens, NY, 1992
page 25 - 39 .... road trip through Alabama with Joe Ruther & Todd Walker, 1982
page 41 - 71 .... ARCHITECTURE & MINING (Elizabeth, NJ; Duluth postcards; Sault Ste. Marie, Ontario; Metro North; Santa Maria in the Hudson from W. 115th Street; etc.
page 57 .... Reich á Roma, 1974
page 59 .... Snoopy Moloch of America, Minneapolis, 1993
page 74 - 87 .... ARCHITECTURE & THE MILITARY (USS Olympia, Philadelphia; Ordnance Museum, Aberdeen Proving Grounds, Maryland; etc.)
page 89 - 91 .... West Rock Ridge, New Haven, bike ride
page 94 - 103 .... I-95 sequence
page 107 .... continuation of West Rock Ridge bike ride; drink-your-tea, towhees in the spring
on and on

Fig. 1 Brad Freeman. *Muzelink*. New Haven and Purchase, NY: JABBooks, 1998.

book is made, does not offer a way to navigate the basic sections of the work by finding topics and page numbers. It is a narrative in its own right, a story of the book's continual transformation. The navigational expedient remains, but the added value of a shifting history of the book's artistic and production history creates a blurred case. As a table of navigational devices, this "Contents" page narrates the books conceptual and material evolution and literally narrates a tale through its cross-outs, revisions, and palimpsests.

Todd Walker's book, *Three Soliloquies*, offers a very different example of book structure participating in narrative. In this case, the openings, not the pages, are the unit that structures the reading. Across a sequence of spreads, a series of photographs chart a conversational exchange. In effect, the photographs tell a story. But the way they are placed within the openings makes the gutter—and improbable "story" element if ever there was one—into a semantic element. A man and two women are shown in a series of postures, first grouped together, and then, as the conversation unfolds, separated by the gutter. The photographs on the pages on each side of the spread progress the story through manipulations of scale, shifts of gesture and proximity, registering the moods and impact of a verbal exchange. The social tension in the sequence is reinforced by the division of images from each other across the irrevocably physical fact of the gutter. By the conversation's end, the protagonists/antagonists are situated on either side of the gutter, in a condition of resolved but blocked communication. The gutter functions diegetically. It becomes part of the structure of the story line, it *is* the line of social tension in the

narrative. Book structures, after all, are like cinematic ones. The language of montage works to describe its cuts and jumps, frames and links. The language of montage assumed that a typology of structuring principles could be assigned a certain amount of semantic value. The content of form, to invoke a familiar phrase, turns up in surprising places.

In graphic novels and comics, where story-telling is the major business of the works, the space of the page is clearly organized by frames that direct and organize our reading. This organization is just there to present the text/images, but often functions as a primary semantic element in itself.

Krazy Kat, George Herriman's early 20th century masterwork, often demonstrated conceptual games of framing. Using the ground of the page as substance and support, Herriman played with the way the illusion of space and the literal surface could be invoked simultaneously. He lets a page work as a wall into which a door can be drawn and then opened as well as serving as a surface on which different scenes of action are arranged. The navigational aspects structure movement within the story space (a road suddenly appears and goes up to that unexpected door) so that relations among elements are clear—are inherently narrative and causal (something will happen next when Krazy goes across the threshold). Few conspicuous graphic devices (such as arrows or numbered frames) are in play, but the entire field of narrative production is activated by graphic means. (These are graphic tales, after all.) The gags in *Krazy Kat*, playing literal drawing/graphic production against illusion and convention, are sometimes simple devices. Scale changes, graphically registered, are not navigational, but the framing of one vignette within another so that the difference between one view, one moment, one event, or another can be understood temporally certainly is at once extra-diegetic (merely discursive, chunking the units), and narrative (structuring the chronological sequence of events).

In Winsor McKay's fantastic and seductive *Little Nemo* drawings, the compound effect of the stretching, changing shape and size of the panels integrates with the narrative in a story-telling formula that McKay used repeatedly at the start of each episode. As Nemo falls deeper into dream, he imagines the legs of his bed stretching. The panels and their frames correspond, and the elegant delineation of space between, that navigational device of difference, appears to be a mere scaffolding through which the dream tale can unfold. The framing of the panels through white spaces makes them distinct. The structure, emptied of the drawings, holds no specific semantic value. The framing is simply a hierarchically ordered sequence of relations. That *is* a semantics, of course, but not perhaps a narrative one—unless the scale and shape of passages and weight given to each element and feature factors in the reading that produces meaning in the whole. In this case, the graphic features inflect the story through their structure, but do not seem to carry strict semantic value in themselves, so their diegetic role is ambiguous.

As conventions become regularized within the history of comics and then graphic novels, mechanisms for sequencing and signaling relations of one panel to another also get established. Repetition, fragmentation, details, and text balloons

all combine in the classic comic format. The conventions are partly borrowed from cinematographic processes of cutting, jumping, juxtaposing images and point of view systems.

But the graphic elements that distinguish comics from cinema become striking in the novels of Chris Ware, who often makes extensive use of diagrammatic elements to organize his graphic space. (**Figure 2)** The narrative effect of the arrangement of the images, their placement, and their scale in relation to each other, is carefully articulated to structure the chronological sequence of events. Many of these decisions look like navigation, but the armature actually contributes content to the story, is part of the telling intimately bound to the told. The nine panels in the lower left show tooth-brushing as a rapid, sequential event. The uniformity of size, as well as the rate of change and repetition within the images, reads in contrast to the varied scale of the images on the upper right. There the overlap of the longest pane in the getting into bed sequence links it to the subsequent events in the bedroom. Within the panes, the diegetic elements of narrative unfold. The story events are clear. But their relation to each other is shaped by the graphic arrangement of the page, its divisions and subgroups, sequences and order. Navigation (directing our reading) and narrative (the substance of the story) are intermingled.

Scott McCloud's well-known *Understanding Comics* lays out a basic vocabulary for describing the frame-to-frame relations performed in these graphic works.

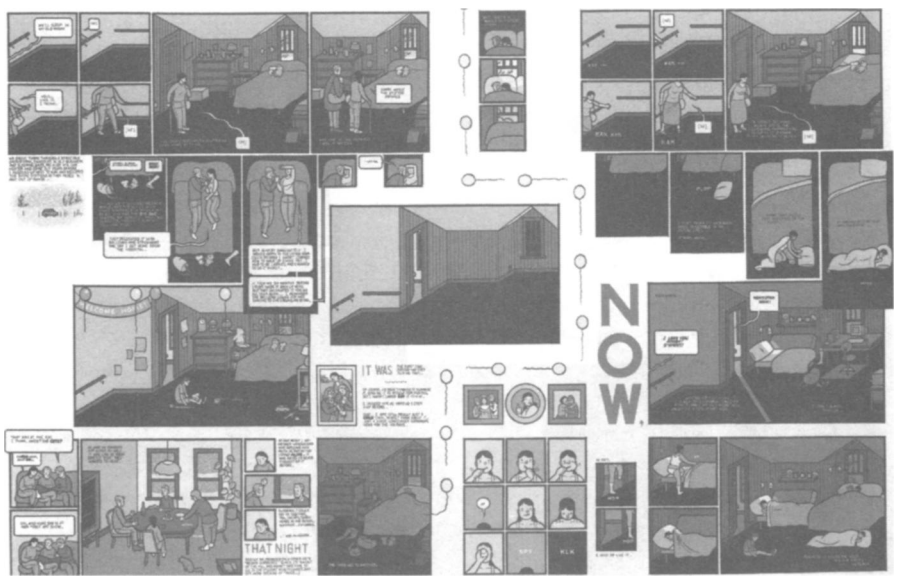

Fig. 2 Chris Ware, "Now." In *McSweeney's Quarterly, #13*. SF: McSweeney's, 2004., n.p.

Each of his descriptions depends on narrative conventions and classical continuities (of place, character, point of view, temporal realm, etc). His typology allows for leaps and frame-jumping, in the cognitive (Irving Goffman) sense as well, where the mind-game shift of perceptual frame that reveals that X is just a dream of Y or other re-orientation forces us to change our outlook to reincorporate the elements into a coherent whole. Such frames are not within the classic unities but rely on connections made across ruptures and breaks that shift register, sometimes radically, while keeping the story space intact.

The diagrammatic features in Ware's work (arrows, overlapping, directional orientation or devices that link groups of images) are not, strictly speaking, story elements. But the language of diagrams suggests that basic navigational elements like frames and groupings (what we would describe as chunking and linking functions, in a computational logic) are elements of the textual field from which narrative emerges as an effect. The story cannot live "outside" of these structures, and depends upon them for the internal unfolding of events.

If we shift our attention away from stories and fiction, and examine a diagrammatic representation that maps a different kind of event sequence, will it offer another kind of insight into the relations between narrative and navigation that have been sketched in the preceding examples? We can take a flow chart or diagram in which the arrows and directional devices code relations so that a "story" of the information is created as a sequence of events and their logical (maybe also chronological) unfolding. In my first example, a diagram charts the production of a story (making it an example that is self-reflexive in terms of narrative studies) in a highly amusing and reductively mechanistic manner. The outline of events is entirely organized by the graphical elements. If we remove the graphic devices that structure the piece, this becomes dramatically clear. **(Figures 3a and 3b)** Reading order may be assumed to follow our left-right, top to bottom, habits, but the re-iterative cycle and feedback loops are gone, as are the directional flows meant to order the sequence of vents. In other words, the "story" is now changed. Parts of it are missing. The graphic devices, so incidental-seeming they could pass as mere means to move among elements, turn out to have served a narrative function, were bearers of semantic value. They were connectors and transitions. They "said" this happens next, or this way, or not at all. The navigation function and narrative substance were one and the same, even though they were presented as graphic devices. Let's look at a few other diagrammatic examples.

Diagrams of lifecycles, or of complex events, depend on the capacity to show multiple moments in a long temporal sequence within a single image. Pictorial narratives are frequently subdivided in this way. Medieval illuminations are filled with multiple vignettes showing the life of St. Jerome, the stations of the Cross, or the life of the Virgin, and other religious themes in which narrative outcomes structured into the image create the moral meaning of the larger tale. In such images, the narrative sequence is implicit, not diagrammatic, and the reader's familiarity with the story is an aid in ordering these events. (Perspectival ordering of space organizes its own narrative sequences, hierarchies, and implied structures, and such conventions were highly legible when they flourished.) But in a conven-

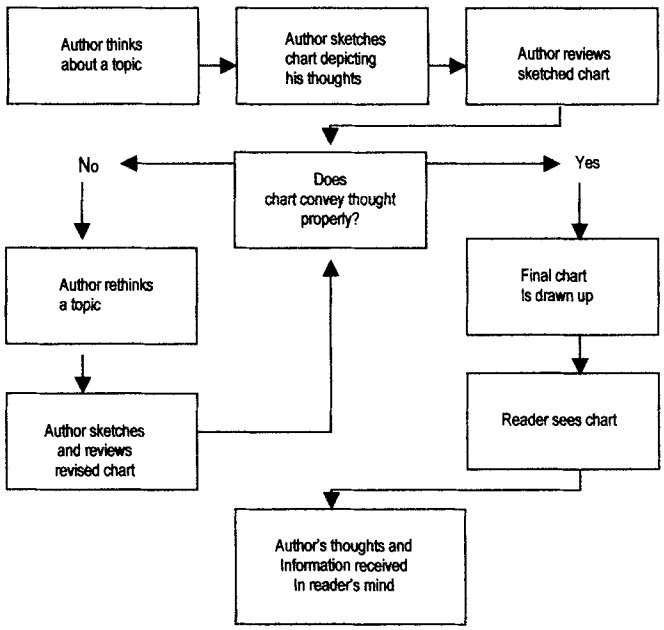

Fig. 3a Diagram on authorship, source unknown, Johanna Drucker's alteration.

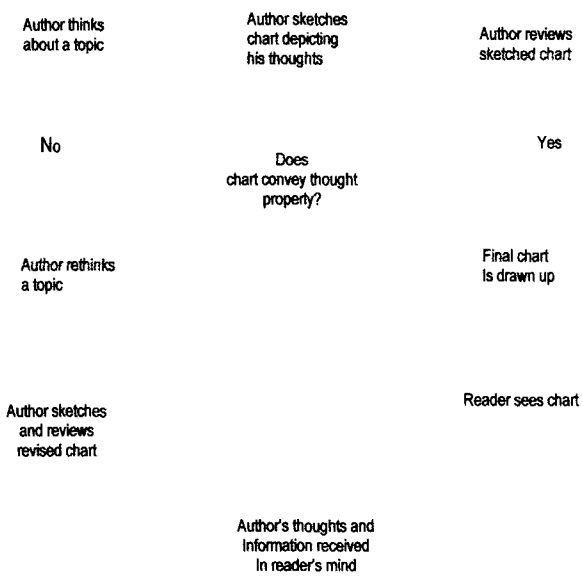

Fig. 3b

tional "lifecycle" drawing, the flow of time and development of narrative action is mapped by arrows or shifts of position or phase mapped along an x/y axis (where one axis charts temporality). In graphics, the use of more dramatic special-effects of arcs and angles adds *semantic* value. A hierarchy of importance, force, potency, power and thrust are all clearly coded in the graphic devices. But more to the point, they are story elements, not simply a means of navigating the tale. The graphics *are* the story, clearly, not merely signage directing a reading.

Books, artist's books, comics, graphic novels, and diagrams are all print-based examples. All provoke spatial-temporal readings, but they are materially stable and static with regard to inscription. They don't change as we read them, even if the text is produced anew (and differently) in every reading. The argument that the graphic devices by which we navigate these works are integral to narrative meets a new set of challenges when shifted into the realm of electronic texts or works.

Espen Aarseth, Jesper Juul, and other theorists in cybertext studies make the claim that traditional narrative theory fails when applied to online games and hypertext. The argument, in brief, is that the mutable character of cybertexts combined with their immersive properties should be thought of as *simulation* and not narrative. Online games, the argument goes, are not simply sequences of signs or stories. They are machines that function as sign generators and story possibilities. So though we may perceive a scene like a street in the online world, *Second Life*, as a representation, it is actually a simulacral system within which story possibilities arise. Whether one agrees with Aarseth, et al, or not, their suggestions shift the distinction between narrative and navigation into another register.

According to this distinction, the Bayeux tapestry is a representation. The images are scenes from a complex and interconnected narrative. As reader-viewers, we have to first identify the elements of the narrative—separate and chunk them. Here attention to the way diagrammatic features work as navigation in graphic texts come to our aid. Though the tapestry doesn't have the overt framing devices of conventional comics, it does chunk into recognizable groupings. **(Figure 4)** The basis

Fig. 4 Bayeux Tapestry, detail, source unknown.

on which we make that recognition, I would argue, is not the pictorial imagery, but the navigational scaffolding. The graphic device is simple enough (so simple it tends to pass without notice)—white space brackets groupings of figures within an otherwise undifferentiated strip. The navigational elements organize our reading experience in advance of our actual encounter with either verbal text or visual pictorial content. The "vignetting" effect makes it possible to read this narrative. The white spaces make the structure, the construct the narrative armature. Such features are clearly presentational, rather than elements of story, but the story is in part structured through these chunks, divisions, and relations. How can we distinguish the imagery in the *Second Life* environment from that of these more traditional artifacts using Aarseth and Juul's argument? Digital environments are distinct at a level of engineering design. Navigation refers to what we can manipulate, and how. The action of moving through (and the choices offered the reader in the construction of the sequence of events) has been the core of the cybertext-as-simulation argument. When we enter *Second Life*, we indeed have to move around in it. The clues about how we are to do this embed navigation in narrative (a doorway opened by a character is a navigational structure *and* a story element, as are details of style, architectural features, and difficulty or ease of opening or closing such portals). The *ergodic* aspect of narrative production disappears in the absorptive fictional or fantasy space, but motivation and causal relations are structured into the design in a way that blends navigation/presentation and story. By contrast, viewing a *recorded* sequence of the game experience turns it into a familiar filmic narrative, a movie of *Second Life*, but that is the experience at a remove. Being "in" *Second Life* is not the same as watching a fixed sequence of image-text-story that unfold. *Second Life* is not a single representation lodged in a stable inscription. The game design structures possibilities in a system in which behaviors, actions, characters, and all elements of the game space, have been modeled. A glance at the design process begins to show the complexity of modeling such a world—not just the complexity of visually rendering the image. The navigational clues in such an environment are not just scaffolding used to present elements in an ordered sequence or hierarchy. They are more like signage systems in a traffic flow. Like traffic signals, they allow for multiple movements, but are also signs with semantic value (red=stop). The signs are not the narrative, but as the conditions in which its constraints and possibilities are modeled by the narrative engine they create the set of choices within which movement and action, event and story, can unfold. They organize the possibilities of sequences of events, but do not structure specific pathways or links, nor do they create the specific character or plot scenarios according to which action unfolds. But this concept of a narrative engine, a model of possible stories, events, and experiences, provides a provocative way to understand web page interfaces.

Even the most ordinary screen in a digital environment (e.g. The University of Virginia's home page) displays the familiar elements. Now well-established conventions, they seem a far cry from the world of Lara Croft's fantasy or Second Life's ersatz paradise. But the use of point, click, link, arrow, and frame devices in the daily business of web activity force the relation of navigation and narration into focus. The leap from *Second Life* to the home page of UVA might appear dra-

matic. And any analogy between them might seem strained—one supports obvious fiction and storytelling, the other only incidentally and implicitly engages causal relations or any kind of tale. In addressing the effects of navigation in a conventional environment, the emphasis shifts to the idea of narrative effect, or the experience of reading, rather than to a structured, pre-existing narrative. But the acts of navigation through which our regular creation of sequential text orderings takes place—that is, through which the narrative acts of web-based reading are constructed, and, importantly, constrained is governed by models of narrative possibilities at a higher level. In both cases, the designs through which we navigate, the interface, are graphic manifestations of that narrative engine. What is possible to say, construct, or tell as a tale is constrained and coded into the graphical user interface of a web design. The user's persona, while of a different order than that of an artificial avatar, is a constructed effect of sequential actions and linked events.

In early days, before the WYSIWYG, in the early stages of the graphical user interface, every action made in electronic space registered with unfamiliar awkwardness. But in the subsequent decades, the flat screen space has been subdivided into ever smaller, highly defined units of real estate, each with its own data structure and feed. The graphic armature disappears into a familiar set of modeled behaviors to which we conform our actions and expectations. We hardly notice the ways its order shapes what is possible within the choices that can be made for moving through or out of a site. The navigation of game spaces is masked by a seamless, redraw, refresh rendering. But how much *more* masked are the navigational devices through which the reading of web sources occurs. By virtue of seeming to have little or no "content" to them, these devices (the structure of sidebars, hierarchical divisions of information, pull-down menus, etc.) appear to be void of semantic content. My argument is that that appearance belies a highly coded structure whose hierarchies and organizations are often semantic, and furthermore, that graphic organization expresses a model of what can and can't be said, done, and experienced through a given interface. In this instance, presentational features of discourse constrain narrative possibilities through the design, even if they do not constitute the specific content of the story that unfolds through the user's experience.

Bascially, every graphical interface encodes a form of "narrative engine" in its visual structures and schematic spaces. These spaces are all virtually rendered, to be sure. The virtual flatness, on which the illusions of space is framed, reinforces the subjective, first person viewpoint from which it is produced. Or, to flip this around in accord with Victor Burgin's observations in "Geometry and Abjection," the viewpoint that constructs us as subjects of the image is inscribed in the work. The graphic space is the site in which each subject position is brought into being, made, or constituted. Looking at an interface and all of its endless-seeming but seamlessly navigated possibilities creates a sense of omniscience. **(Figure 5)** The standard GUI allows navigation to produce a narrative (in the broadest sense, though the analysis of user motivation through a sense of causal connections occupies many psychologists and human interface designers) of continuous links, movements across various frames and spaces, through a sequence of events experienced as a continuous flow as if they require no effort—and have no conse-

Fig. 5 University of Virginia home page screen capture, http://www.virginia.edu (accessed 2/15/07).

Fig. 6 Second Life, screen capture, http://www.secondlife.com (accessed 2/15/07).

quences. The graphical devices through which that flow is produced are clearly navigational. They are the mechanisms by which we move through a series of connected text/image/screen spaces.

But, to repeat what I stated above, this navigation structures what can be narrated, by organizing and engineering our options within the model of the narrative engine or the information structures. In *Second Life,* the story details in any narrative line are created by a player or players in the game. (**Figure 6)** Similarly, the experience of any web environment is freshly made by every user in any instance according to the navigational possibilities that structured into its interface design

and underlying information spaces. In the case of web navigation (back to the UVA homepage example) an explicit "story" may occur only on the level of navigating the discourse field, and thus fall short of traditional narratives on any but the most structural level (the experience of navigation is a tale told through the user-subject following a series of options and choices across a temporal sequence of events). The design of web spaces creates constraints and possibilities that are an expression of conceptual and intellectual decisions shaped at other points in the design.

So, what is the point? The graphic devices that direct and structure reading in a print environment are conventions that encode and express assumptions about reading practices, users, uses, and knowledge-entertainment-aesthetics-form-and-format. That is as true of "The Golden Circlet" story from which I began as it is of any narrative in a classic comic strip or the diagrams of the lifecycle of a story, an insect, or a storm. Once called to attention, the graphic workings of these structures become conspicuous. We cannot read for seeing the activity of white space on a page, frame divisions, groupings, and visual rhymes and so forth. We start to *see* these as conventions, historically shaped, culturally specific, value-laden and assumption-driven. Graphic devices encode models of reading, and the means of navigating a textual environment. They delimit the ground on which the figure of narrative emerges. They are the workings of the stage for the action. And then, they articulate the actions through the distinctions and relations they support. In at least some instances, these devices carry semantic content that contributes to the narrative, even if only partially or minimally.

In a digital environment, these workings are modeled at the level of data fields and their relations, as a logical structure. The textual elements of aesthetic texts produce a story within these structures, not necessarily because of them, but the relation of co-dependence is more than incidental, and sometimes highly substantive. Boxing elements off from each other within frames, or creating changing content in a display, may not carry intrinsic narrative value, but the basic act of differentiation creates the field of *différance* within which narrative meaning can be construed. The graphical scaffolding creates the structures through which navigation and narration occur.

And the ideology of it all? The future and present practice of reading is contained within conventions that shape our expectations and assumptions as surely as the layout of pages for suburban readers was given its form by the layout conventions of illustrated short stories in the 1890s. Not only are the stories told an expression of the values that masquerade as natural, but so are the devices through which they are articulated. Discovering a language of description through which to attend to the ways the navigation of complex information and entertainment spaces is engineered is, I suggest, an essential aspect of the analysis of narrative forms (understanding the fantasmatic image of subject positions created for the telling of tale of daily digital experience)—whether they come from the richly aesthetic world of artistic invention or the practical world of managed bureaucratic activity. If the world is experienced according to the stories we tell, think we can tell, and will tell about that world, then recognition of the structuring principles on which this telling operates—mostly mechanisms rendered invisible and natural through

habits of use—is an essential critical and analytical tool. Navigation is never natural; it is always the expression of a set of cultural assumptions and controls; it is a form of telling that sometimes carries semantic content, but always structures its expression within the constraints of presentation. Describing the graphical forms through which navigation operates is one way to get a purchase on that field.

As a final example, take the case of the online interactive game environment, *Flight Simulator*, and its provocative delirium of control. **(Figure 7)** The screen of the cockpit control panel provides a perfect example on which to conclude. Graphic? Absolutely. The clearly arranged space is composed to model behaviors and activities. Is it a narrative? No, rather, the interface is the means through which the narrative engine operates. The screen image puts the viewer/user in a position of "complete control"—just like any web interface does. CSPAN makes a useful

Fig. 7 Flight Simulator screen capture, http://www.microsoft.com/games/flightsimulatorx/screenshots.html (accessed 2/15/07).

contrast here, since its claims to transparency, limited special effects, and objectivity are clear while the nature of the medium and its effects are rendered invisible. The graphic in both cases is overtly and conspicuously navigational. In *Flight Simulator* the handles, controls, switches, and dials are all mechanism through which to create that ergodic simulation of immersion. The device operates by creating a circumstance of complete identification between user/player and the unfolding events of the game/narrative. The ideology of this example is not an exception. Instead, it is exemplary of the way the naturalized interface to a world of possible narratives is an engineered model already constrained by the assumptions structured into its organization. The myth of total control in such a device certainly encodes values and beliefs, as does the web interface that disappears through habits of daily use. On one level we can argue that the substantive distinction between types of games or web experiences—looking at pages of manuscripts on the British Library's site or playing a game of philanthropy or world salvation are not the same as inhabiting online war games or virtual worlds. But at the level of the *scene* of the action and illusion of control, all screen-based experience—cyber-games with their narrative engines or web-designs with their navigational armatures—situates a viewer in the same omniscient position of control. Here, again, the ideology of navigation edges close to a narrative situation in which the act and circumstances of the telling become foundational to the events that constitute the told.

My argument is not just for recognition of the semantic role played by graphic devices as integral to narration. That is foundational. I'm trying to show that within the larger task of interpretation (our work as critics, scholars, and teachers) we can read ideological, cultural, and historical matters in these graphic dimensions and the way they structure subject positions from which telling unfolds and within narrative is constrained and structured. I would go farther and say that certain assumptions, values, and beliefs can only be accessed through critical reading of these devices. In our era, first-person shooters, with their ubiquitous delirium of control, are thematically and situationally the model for much of web interface design. The daily business of reading in the narrative-producing navigation of the Web depends on this same effortless movement and absence of consequence in structuring our search and browse, linking and clicking activities as the absorption into story produced by first person identification. As theorists of cinema pointed out decades ago, the primary identification of the viewing subject is with *the situation of viewing*. Only after that does a secondary identification with *what is viewed* take place. The rhetorical force of media is in the way they interpellate us as subjects of their production and our alignment with this. Graphic devices perform many functions in such subject-production, as we have seen from the examples. Assumptions about readers, reading, demographics, aesthetic values, and ideological issues all intersect in the visual dimension of graphic devices.

You think you are writing a story, producing a narrative as a reading, but as the hard-learned lessons of critical theory taught us, we are the ones produced as an effect of texts. Graphic devices connect the space of navigation and narration, these directings and orderings shape what we can imagine the space of narrative to be.

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