

HYPertext GARDENS

Hypertext Gardens: Delightful Vistas

Mark Bernstein
Eastgate Systems, Inc.

Into the Garden

Beyond the Navigation Problem

The Limits of Structure

Gardens and Paths

The Virtue of Irregularity

Gates and Signposts

Statuary and Follies: Punctuating the Reader

Experience

Planning Pathways

Seven Lessons from Gardening



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<http://www.eastgate.com/garden/Enter.html>

HYPERTEXT GARDENS

Seven Lessons from Gardening

1 Hypertext disorientation most often arises from muddled writing, or from the complexity of the subject. Many hypertexts do not require elaborate navigational apparatus.

2 Rigid hypertext structure is costly. By repeatedly inviting readers to leave the hypertext, by concentrating attention and traffic on navigation centers, and by pushing content away from key pages (and traffic), rigid structure can hide a hypertext's message and distort its voice.

3 The shortest path is not always the best.

4 Gardens are farmland that delights the senses; parks are wilderness, tamed for our enjoyment. Large hypertexts and Web sites must often contain both parks and gardens.

5 Visual effects and other irregularities enhance pathways. But use punctuation sparingly; unwanted interruptions are tiresome and intrusive.

6 The boundaries of parks should be especially clear, lest readers see them as mere wilderness. Gateways introduce

structure and guideposts confirm it, assuring visitors that they are amid a crafted experience, not chaotic wilderness.

7 Rigid structure makes a large hypertext seem smaller. Complex and intricate structure makes a small hypertext seem larger, inviting deeper and more thoughtful exploration.

In Conclusion...



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HYPERTEXT GARDENS

Introduction

The attention of the audience is a writer's most precious possession, and the value of audience attention is seldom more clear than in writing for the Web. The time, care, and expense devoted to creating and promoting a hypertext are lost if readers arrive, glance around, and click elsewhere.

How can the craft of hypertext invite readers to stay, to explore, and to reflect?



Tech: Building the garden



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Garden's End

At times, wilderness is exactly what readers want: a rich collection of resources and links.

At times, rigid formality suits readers perfectly, providing precisely the information they want, no more and no less. Indeed, individual hypertexts and Web sites may contain sections that tend toward each extreme.

Often, however, designers should strive for the comfort, interest, and habitability of parks and gardens: places that invite visitors to remain, and that are designed to engage and delight them, to invite them to linger, to explore, and to reflect.

[Into the Garden](#)

[Beyond the Navigation Problem](#)

[The Limits of Structure](#)

Gardens and Paths
The Virtue of Irregularity
Gates and Signposts
Statuary and Follies: Punctuating the Reader
Experience
Planning Pathways
Seven Lessons from Gardening



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HYPERTEXT GARDENS

A New Path

In learning to hold the reader's attention, we may seek guidance from the literary arts, from narrative theory and criticism. Like creators in any new field, however, hypertext authors should look to many disciplines for forms, techniques, and insights. Lessons from literature are found in "Patterns of Hypertext" and "Chasing our Tales"; here, I explore how architecture and landscape design might guide us in crafting hypertexts.

Beyond Navigation ▼ The Limits of Structure

Gardens and Parks

The Virtue of Irregularity



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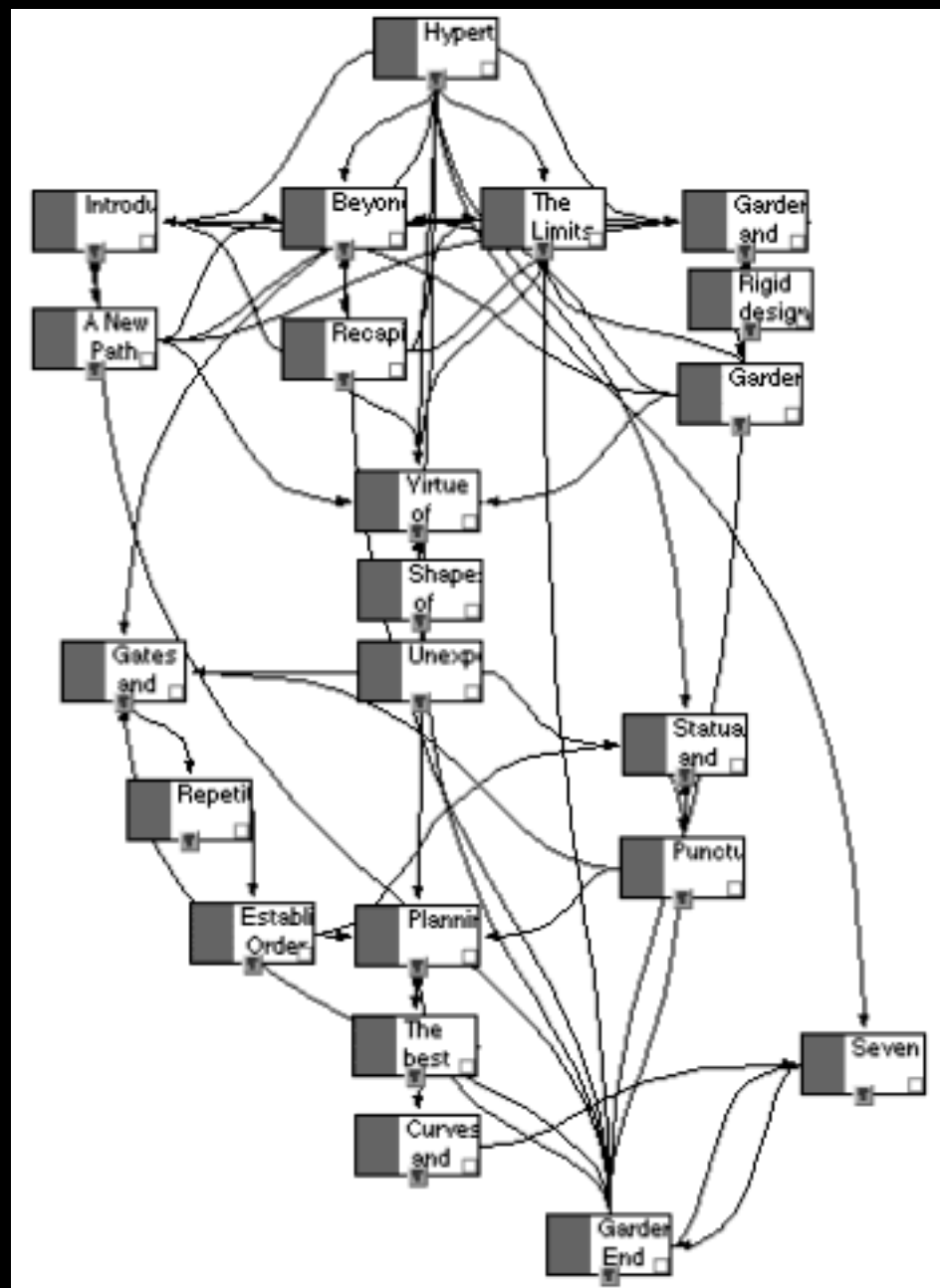
http://www.eastgate.com/garden/A_New_Path.html

HYPERTEXT GARDENS

Building This Garden

An early draft of this hypertext was sketched as a conventional essay. The essay was then imported into Storyspace and extensively revised, both to extend the discussion and to refine its hypertext structure.

Illustrations were created with Painter 5.0, pastel, and colored pencil. Photo credits: Corel Digital Library and ArtToday.



The structure of the garden hypertext is clear from this map, based on the commercial Storyspace map view but drawn by a new hypertext tool currently under development at Eastgate. Readers enter through a single portal (top), move through found parallel lanes of introduction and motivation, and then enter the more densely-linked core discussion of parks and gardens. The opening section is a formal garden, the

later discussion is parkland.

After the hypertext structure was designed, Storyspace converted the hypertext to HTML. The exported HTML was revised with [BBEdit](#), with templates and macro facilities supplied by [CometPage](#).

Dynamic fonts files were created with [HexWeb](#) [Typograph](#), using a pre-release version of [Bitstream Prima Sans](#); these can be viewed, at present, using most versions of [Netscape Navigator 4](#). Every effort was made to ensure that this essay would work well with all browsers.



Garden: Garden gate



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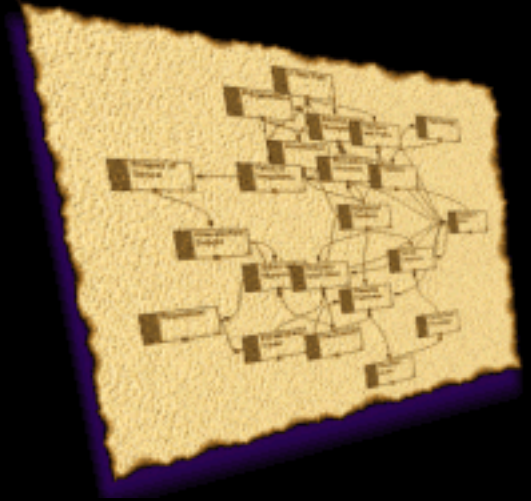
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<http://www.eastgate.com/garden/colophon.html>

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Beyond The Navigation Problem



Years ago, hypertext writers and researchers were concerned that hypertexts would enmesh readers in a confusing tangle of links. Early research called this the Navigation Problem. People sought to solve it in many ways: by providing many navigational tools; by keeping links simple; by using fewer links; and by organizing the links very rigidly.

In time, experience with actual hypertexts and the development of the Web suggested that the Navigation Problem was less forbidding than it had seemed. Hypertext

writers and researchers alike discovered that readers weren't getting lost, that occasional disorientation was common in all kinds of serious writing, and that muddled writing was more likely to be the source of confusion than hypertextual complexity.



Tech: The Navigation Problem



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Recapitulation

Web design is following the same path, although Web designers are only now discovering that the Navigation Problem is an illusion. Early sites, growing haphazardly, were indeed confusing and frustrating to use. In response, Web designers adopted rigid tools and rigid rules: organize sites hierarchically, provide navigation bars and menus everywhere, provide identical choices on each page, avoid complex link patterns.

This philosophy now dominates the Web, where it is embodied in

Web magazines, corporate sites, special-interest collections, and even personal pages. Indeed, the structure of a large business site is often indistinguishable from that of a magazine: a topical 'home page' provides access to isolated, sparsely-linked, 'article' pages. Consistent navigational apparatus is regarded as a necessary virtue: every page needs its top-banner, its side-menu, its bottom menu-strip, and every part of a subsite offers identical navigational choices.

Entering the Garden  The Limits of Structure

Gardens and Parks

The Virtue of Irregularity



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The Problem with the "Navigation Problem"

Today, concern with navigational clarity and efficiency often dominates discussion of Web design. The same concerns once dominated hypertext research, and many systems builders once feared that readers would find hypertexts unwieldy and unmanageable.

In time, the research consensus shifted. As designers and writers gained experience, their hypertexts gained fluidity and fluency. My own early work concentrated on new tools for orienting readers: bookmarks, compasses, and bread crumbs (the ancestor of links that change color when you visit their destinations) all helped readers stay oriented. In time, however, I observed that fiction

writers often adopted very elaborate gambits in order to disorient readers; if hypertext disorientation was an ever-present hazard, I asked, why was it so difficult to achieve? At the same time, George Landow began to argue that scholars and teachers often need to induce a measure of disorientation in order to make readers receptive to new arguments and difficult ideas.

Navigation is not a problem. All writers need to hone transitions, to craft arguments, and to discover fresh ways to present difficult ideas. Links need not be treated as dangerous hazards; links are new opportunities for expression.



[Garden: Beyond Navigation](#)

Suggested Reading

The Navigation Problem

...and Beyond

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The Limits of Structure

The structural rigidity that makes navigation simple and ubiquitous, though it gives a hypertext the appearance of efficiency, can make that hypertext seem sterile, inert, and distant. We may find excitement in individual pages, but the hypertextual

whole seems a mere shell enclosing variously interesting bits. Rigid structure is often promoted for its efficiency and cost-effectiveness, particularly for large Web sites, but excessive rigidity can be costly:

- The repeated appearance of navigation centers -- the home page and other navigational landmarks -- can send the wrong message. Each time readers finish an article, the navigational apparatus returns them to a central page. Revisiting a

landmark always suggests closure, prematurely inviting the reader to leave the hypertext and do something else.

- Navigational centers exert tremendous power over the entire structure. Articles mentioned on key pages receive traffic; others are rarely read. Important parts of web sites effectively vanish from existence as soon as they vanish from the home page.
- Navigation pushes everything else out of the key pages, making design a perpetual headache. Minuscule type sizes become pervasive, and corporate home pages like [Netscape](#) and [Eastgate](#) begin

to look just like
Yahoo.

- Overly-efficient traversal may benefit neither the author nor the reader. A hypertext catalog, for example, is not merely a reference database; merchants want to give readers opportunities to discover things they need or want, including items the reader has never seen. Shoppers learn of new and useful things and find unexpected ways to meet their needs. Supermarkets and museums, similarly, serve both customers and proprietors by offering more than visitors expect. Efficient traversal provides the information readers think they want, but

may hide information
readers need.

Entering the Garden 

Beyond Navigation

Gardens and Parks

The Virtue of
Irregularity



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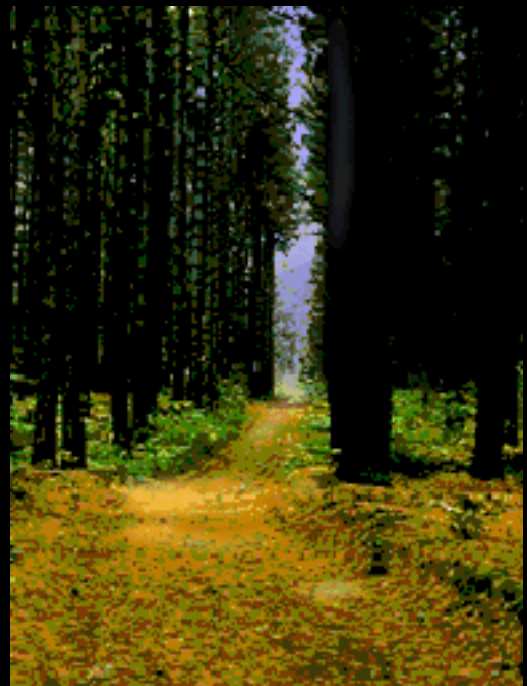
http://www.eastgate.com/garden/The_Limits_of_Structure.html

HYPERTEXT GARDENS

Gardens and Paths

**Unplanned
hypertext sprawl is
wilderness:
complex and
interesting, but
uninviting.**

**Interesting things
await us in the
thickets, but we
may be reluctant
to plough through
the brush, subject
to thorns and
mosquitoes.**





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Virtue of Irregularity



Today's Web designers are taught to avoid irregularity, but in a hypertext,

as in a garden, it is the artful combination of regularity and irregularity that awakens interest and maintains attention.

Rigid design considers irregularity a mistake to be corrected. Each place should behave exactly as expected,



each path should be clearly marked, and a few familiar paths should suffice for all.



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http://www.eastgate.com/garden/Virtue_of_Irregularity.html

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Rigid design

Rigid hypertext is streetscape and corporate office: simple, orderly, unsurprising. We may find the scale impressive, we admire the richness of materials, but we soon tire of the repetitive view. We enter to get something we need: once our task is done we are unlikely to linger. We know what to expect, and we rarely receive anything more.



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http://www.eastgate.com/garden/Rigid_design.html

HYPertext GARDENS

Shapes of Space



**Parks and
gardens
shape our
experience
through
careful
combination
of regularity**

**and irregularity. Here we may find beds of
flowers -- alike in shape, yet each unique in
color or fragrance. Elsewhere, we might break
the rhythm of simple geometry with shade
trees or hedges, a pond or a boulder. This
crafted irregularity engages our senses by
offering the promise of the unexpected
without the threat of the wilderness.**



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http://www.eastgate.com/garden/Shapes_of_Space.html

HYPERTEXT GARDENS

Gates and Signposts



The more wild a garden's vistas, the more important it is to assure visitors that this is not a wilderness. This assurance is not merely a guarantee of safety and comfort, but also prepares visitors to enjoy the planner's art.

In hypertexts, embedded and irregular links suggest the wildness of nature, where thumb tabs, lists, and menus all suggest the

order of planning.
Order, too, is
suggested by links
that explain
themselves -- either
through explicit
annotation, or
through pop-ups,
mouseover messages,
or balloon titles.



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HYPERTEXT GARDENS

Repetition

Repetition itself is a valuable cue, for repetition always signals intent and artifice. The repetition need not be complete and literal, for a writer may gain the effect of repetition by repeating some elements and varying others, or by repeating some aspects -- position, typography, color -- while varying others.



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HYPERTEXT GARDENS

Statuary and Follies:



Punctuating the Reader Experience

Within the reassurance provided by guideposts and repetition, both hypertexts and gardens benefit from

punctuation -- from exceptional elements injected that encourage readers to pause, to reflect, to look again.

Follies -- unexpected pagodas and pavilions hidden in English gardens -- throw the organic art of the



**garden into sharper
relief through their
constructed contrast.**



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HYPERTEXT GARDENS

Punctuation



The same sort of sensory disjunction can revive attention and provoke reflection in a hypertext reader's

experience. When Diane Greco interrupts a discussion in *Cyborg: Engineering The Body Electric* to say:

You aren't going to like this.

she is not warning the reader so much as inviting him to consider the situation. When the reader moves on, he encounters the next page at a different pace and in a different frame of mind.



Gates and signposts

Planning Pathways



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HYPERTEXT GARDENS

Planning Pathways



Highways are judged by efficiency: distance, cost, safety, and time. Garden paths play a different role; they lead us through the best routes, not the shortest. They may bend to pace our journey, curving here to reveal a view, twisting there to lead us through

**a shady grove or a
sunny clearing.**



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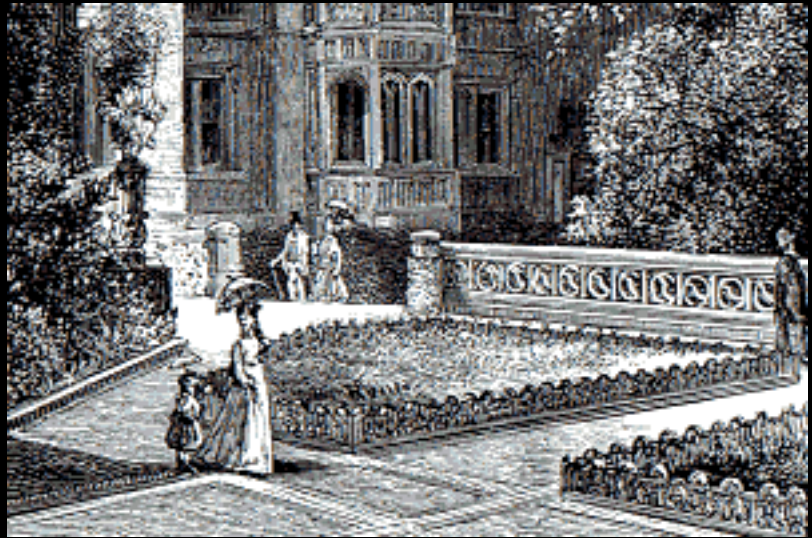
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http://www.eastgate.com/garden/Planning_Pathways.html

HYPERTEXT GARDENS

The best route

Just as garden paths craft our experience, hypertext paths can lead readers while also enhancing their



journey. A simple search can link readers directly to a destination, but thoughtful designers lead visitors not only to the answer to their question, but to better questions as well.

For instance, readers might come to a Web catalog to check the price of a new computer. A direct approach simply delivers the raw data. A more carefully-planned path could lead visitors to this data in the context of:

- **alternative computers (e.g. new models)**
- **different options (e.g. upgrading old equipment)**
- **other interesting products (e.g. ergonomic furniture designed for this computer).**

The path must not twist so much that visitors think they are being led astray, nor be so slow that visitors give up and strike cross-country through search engines. Nevertheless, twists and detours can help designers give their readers more than they expect.



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http://www.eastgate.com/garden/The_best_route.html

HYPERTEXT GARDENS



Unexpected Delight

**The key to planning a
hypertext garden is to
communicate the promise of
unexpected delight while
assuring the reader that she
is not entering an unplanned
wilderness.**

A rigid design might provide

identical thumb tabs on each page leading to the hypertext's entrances; a more fluid design might always offer both some consistent choices and some choices unique to each writing space. Where a rigid design places separate, stand-alone items within a navigational shell, an organic design might interweave relevant sections, enhancing an old section by providing a new path to new material or showing how a new contribution illuminates or responds to another page. This fluidity helps break monolithic articles and white papers into smaller, more

**natural units, pieces of
writing that can be reread
and relinked in new and
unexpected contexts.**

**Gates and Signposts  Statuary
and Follies**



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HYPERTEXT GARDENS

Establishing Order



Formal gardens are unmistakable, but parks -- especially parks situated amid wilderness -- may require architectural elements to

announce their artifice and to frame the visitor's first impression. The ranch-house gate, the monumental arch, the visitors' center: all serve this purpose. Hypertexts, too, can use formal frames and gateways to good effect, demonstrating design and planning at the outset while also

**demonstrating a deliberate intent to avoid
rigidly codified structure.**

Statuary and Follies

Planning Pathways



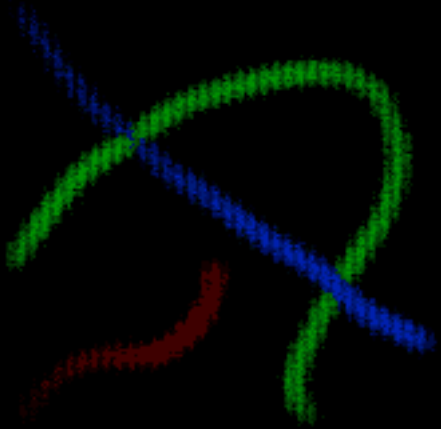
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HYPERTEXT GARDENS



Curves and Crossings

Curves, interrupted views, intersections, and incidental detail make small spaces seem larger. Hypertext pathways and intersections, similarly, make small hypertexts appear richer and more varied.

Too many intersecting paths, of course, can confuse the visitor; the designer's art lies in choosing which pathways to reveal while keeping other potential connections from sight. Where an abundance of detail might overwhelm the reader, rigid and regular hypertext design is useful -- just as broad vistas, straight avenues, and far horizons

**organize large spaces. Elsewhere,
intersections and irregularities invite readers
to explore more deeply, giving readers
opportunities for unexpected discovery and
giving writers a better audience.**



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http://www.eastgate.com/garden/Curves_and_Crossings.html

HYPERTEXT GARDENS

Gardens

Gardens and parks lie between farmland and wilderness. The garden is farmland that delights the senses, designed for delight rather than commodity. The park is wilderness, tamed for our enjoyment. Since most hypertext aims neither for the wilderness of unplanned content, nor for the straight rows of formal organization, gardens and parks can inspire a new approach to hypertext design and can help us



**understand the patterns
we observe in fine
hypertext writing.**

Entering the Garden ▼ Beyond Navigation

The Limits of Structure

The Virtue of Irregularity



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