

Designing Attractive Web User Interfaces

Alistair Sutcliffe

Antonella de Angeli, Jan Hartman and Oscar deBruijn

Centre for HCI Design,
School of Informatics,
University of Manchester
P.O. Box 88,
Manchester M60 1QD,
UK

a.g.sutcliffe@manchester.ac.uk

The New Usability

- Traditional usability not the whole answer
 - aesthetics and emotion in design - Don Norman
- Some claim aesthetics is more important than usability
 - Graphic Designers v. HCI debate
- New Buzzwords
 - user experience
 - user engagement

but what does it all mean in terms of design ?

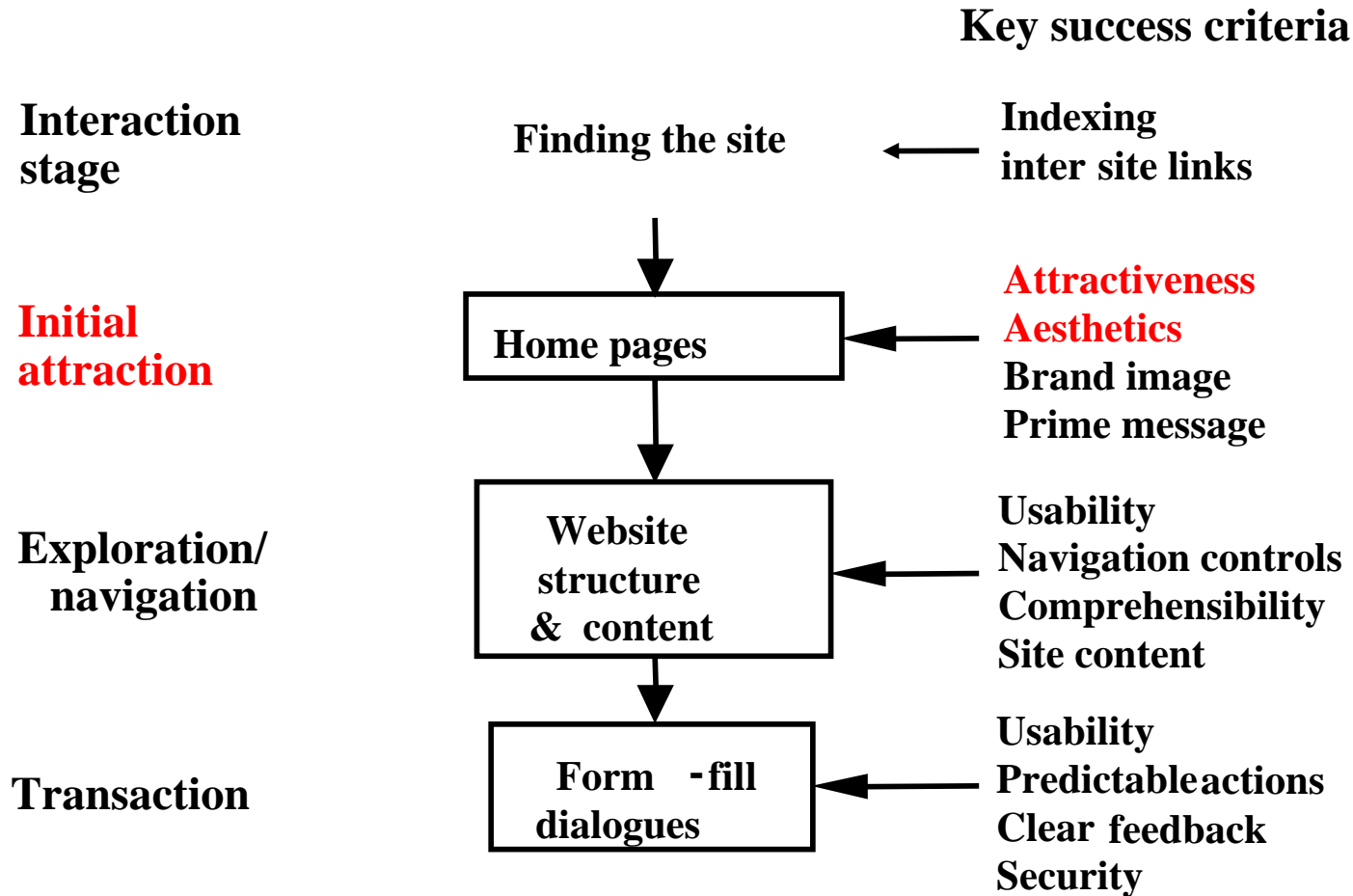
Presentation Outline

1. A framework for 'attractiveness' in UI/ web design
2. Some experiments in investigating attractiveness
3. Experiments on interaction and user engagement
4. Some conclusions- design principles for attractive UIs

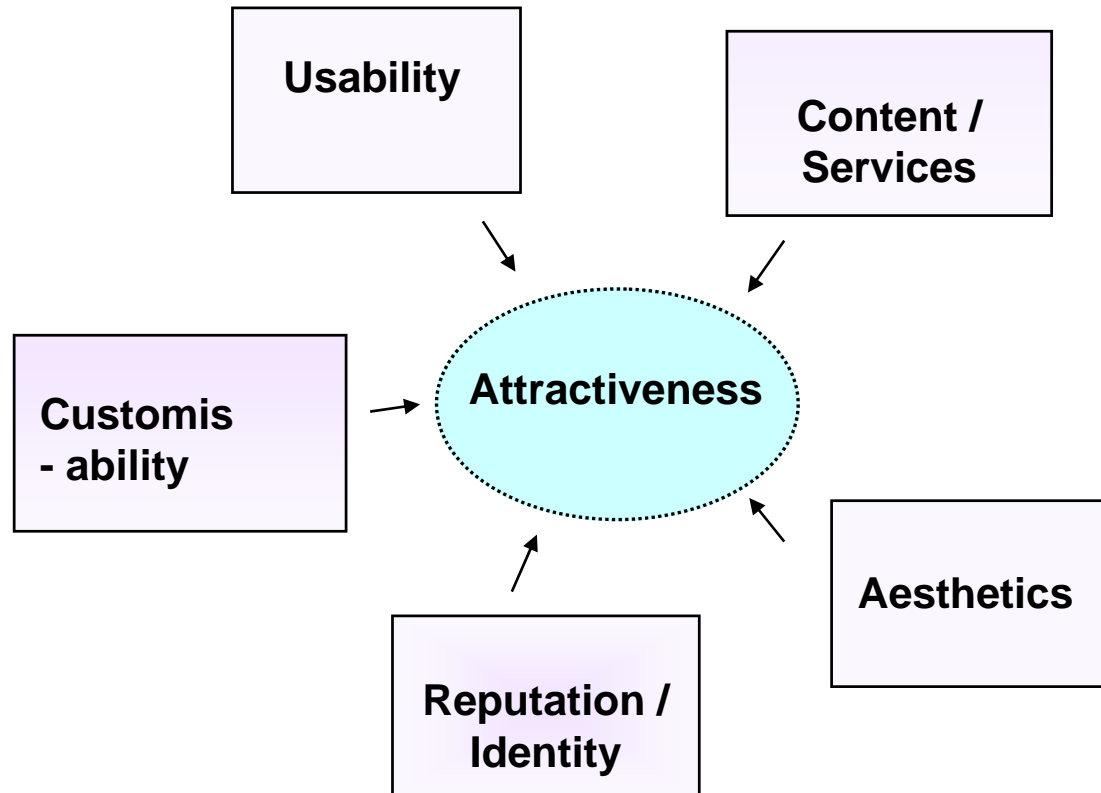
The Business Case

- UIs- especially on the web need to
 - grab the user's attention
 - hold the user's attention
 - deliver the goods
- Plenty of web design advice out there but does it say anything
 - new, beyond traditional usability ?
 - very helpful in terms of specific design guidance ?
- Most design advice at best 'best practice' at worst "punditology"

CSFs for Web Design



The Manchester **Attractiveness** Framework



Attractiveness “Pleasing or appealing to the senses, arousing interest” OED

Attractiveness

Aesthetic Heuristics

- Judicious use of colour: balanced and low saturation for backgrounds.
- Symmetry and style: visual layout and organisation.
- Structured and consistent layout: use of grids to structure image.
- Depth of field: layers in an image stimulate interest
- Choice of media to attract attention: video, speech and music.
- Use of personality in media to attract and persuade: use of human image
- Design of unusual or challenging images to stimulate imagination and increase attraction.

Attractiveness

content heuristics

- *Consistent visual style*, matched to target audience, helps navigation
- *Visibility of identity and brand-* organisational image
- *Matching arousal to user's mood and motivation-* media selection, tone of message
- *Selecting content to suit users' requirements-*
- *Stimulating users' interest by secondary motivation-* added extras to amuse, inform user

Experiment 1

- 3 web (airline) web sites
 - Equivalent content, service, all strong brands
- Exploration, purchase task
- Measured
 - usability (objective- observed errors, subjective rating)
 - aesthetics rating
 - content and brand rating
 - overall preference

Easyjet

Good brand visual identity



EasyJet web site- good on message but poor on layout and navigation

British Airways

Conservative style, little use of image

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print

Address http://www.britishairways.com/ecp_no_dhtml.shtml

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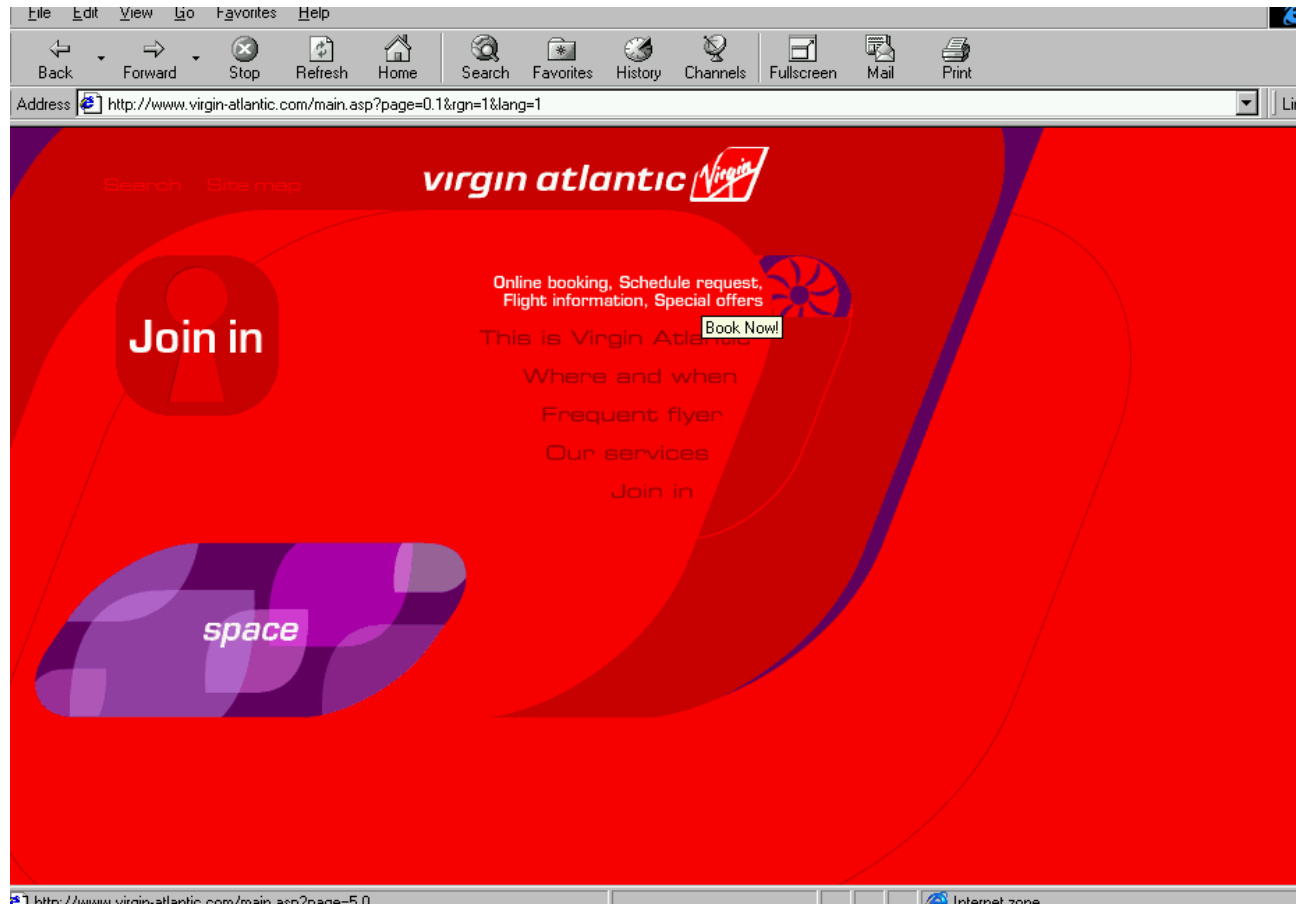
HIGHLIGHTS

➤ [Site Index](#) ➤ [Inside British Airways](#) ➤ **SPECIAL OFFERS**

- * [Make your money go further with the latest offers from the UK.](#)
- * [Latest news from British Airways, including press releases and media information.](#)
- * [For the latest financial performance, current share price and other shareholder information visit our investor relations site.](#)
- * [You can now check worldwide weather with our new online Weather Centre.](#)

Virgin Atlantic

Aesthetics, brand, & visual identity



Virgin web site, interesting visual design the window contained an animation to attract attention

Results

- Virgin – best overall, best for aesthetics
- EasyJet- worse on usability, but still a close run 2nd place, strong on content
- British Airways- best on traditional usability, good content, but still 3rd
- So looks like aesthetics matters
- But was it brand identity or aesthetics (or both) that makes an attractive design ?

A cautionary tale

Virgin home page today

Hello gorgeous! virgin atlantic

Home You are in the United Kingdom site **GO**

BOOK FLIGHTS

From: London | Departing: 5 December | Round Trip / One Way

To: New York | Returning: 6 December | **FIND FLIGHTS**

FLYING CLUB

Username: [Forgot your details?](#)

Password: [What is Flying Club?](#)

LOGIN

[Want To Login Securely?](#)

WHAT'S NEW

[New routes to Jamaica and Dubai](#)

[Advice for flights to Port Harcourt](#)

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YOUR SHORTCUTS

- Book Flights
- Book Hotels
- DIY Check In
- Email Updates
- Flight Status
- Update Booking

check in online

SAVE A LITTLE TIME

Beat the queues, check in online

[Tried our airport kiosks yet?](#)

NEW HEATHROW CLUBHOUSE

Discover the ultimate preflight experience!

[Take an interactive look at the new Clubhouse](#)

ENROL IN FLYING | **WORD IN YOUR** | **ECONOMY FARES**

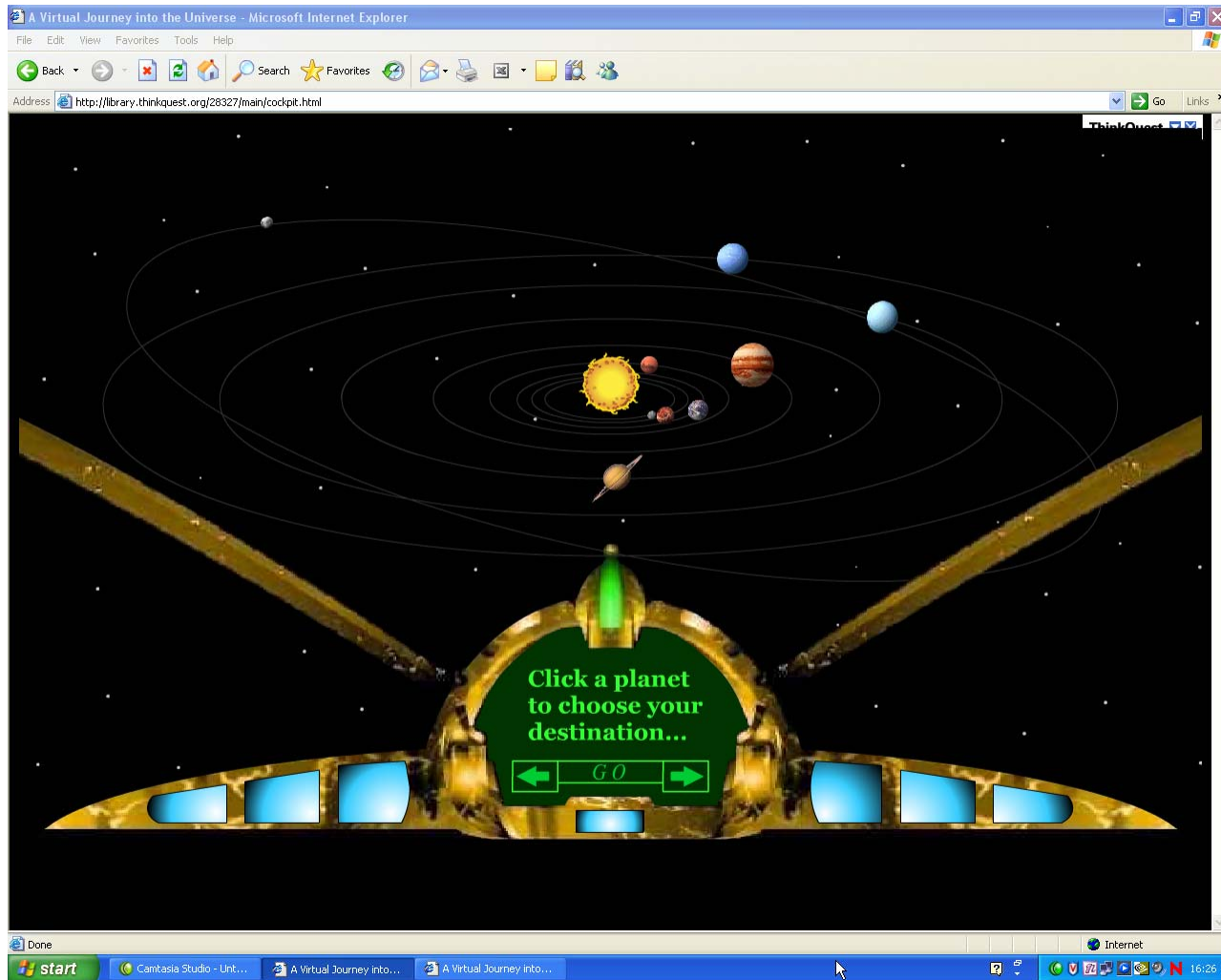
flying club | HAPPY CHRISTMAS With love from virgin atlantic

Aesthetics takes a back seat to prime service

Experiment 2

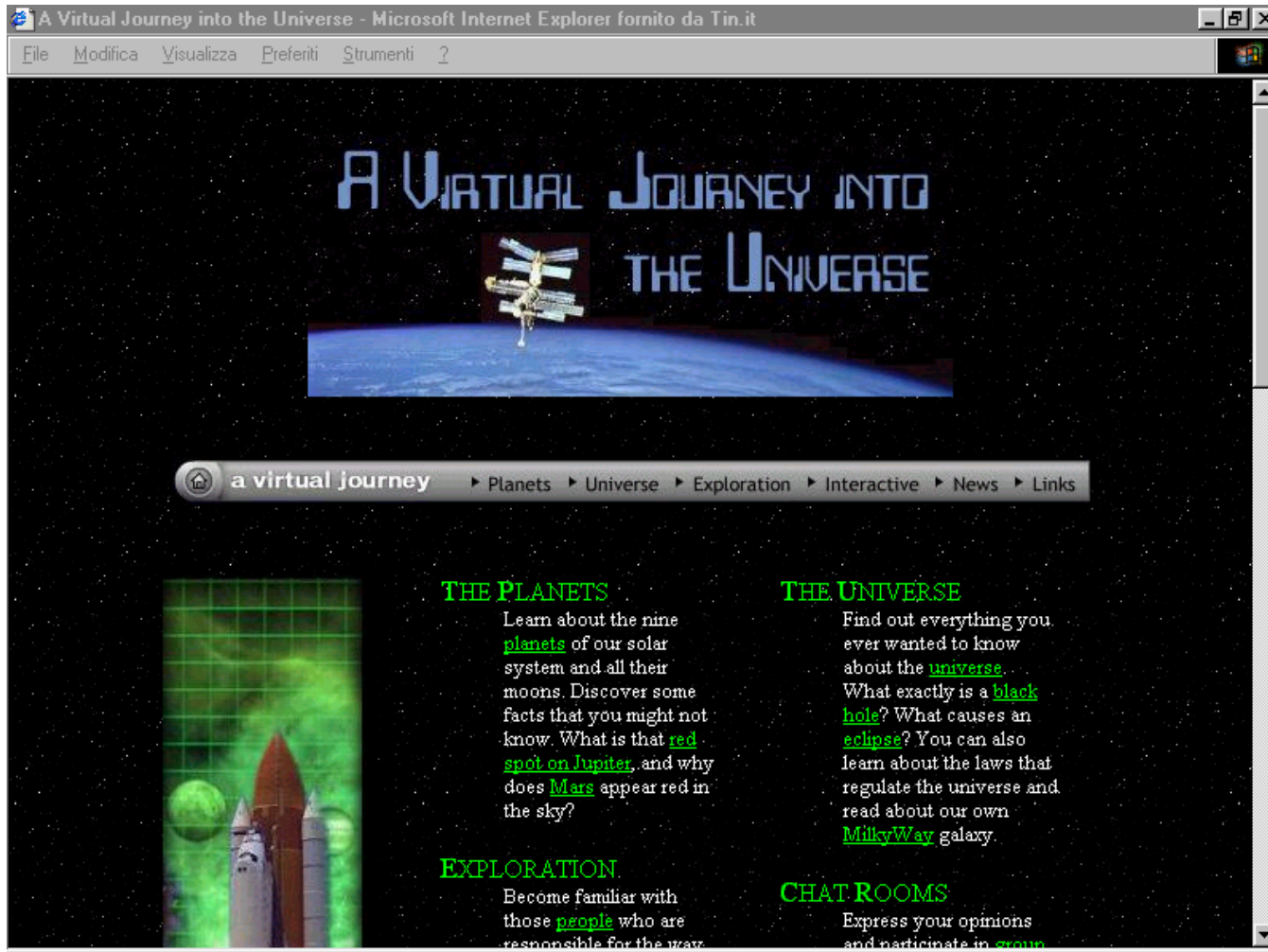
- 2 (educational) sites, differ in interaction style, but same content
- Search retrieval tasks
- Measured
 - usability
 - aesthetics
 - content
 - memory for content, features, problems
- De briefing workshop- reasons for choice

Interactive Metaphor Design



<http://library.thinkquest.org/28327/>,

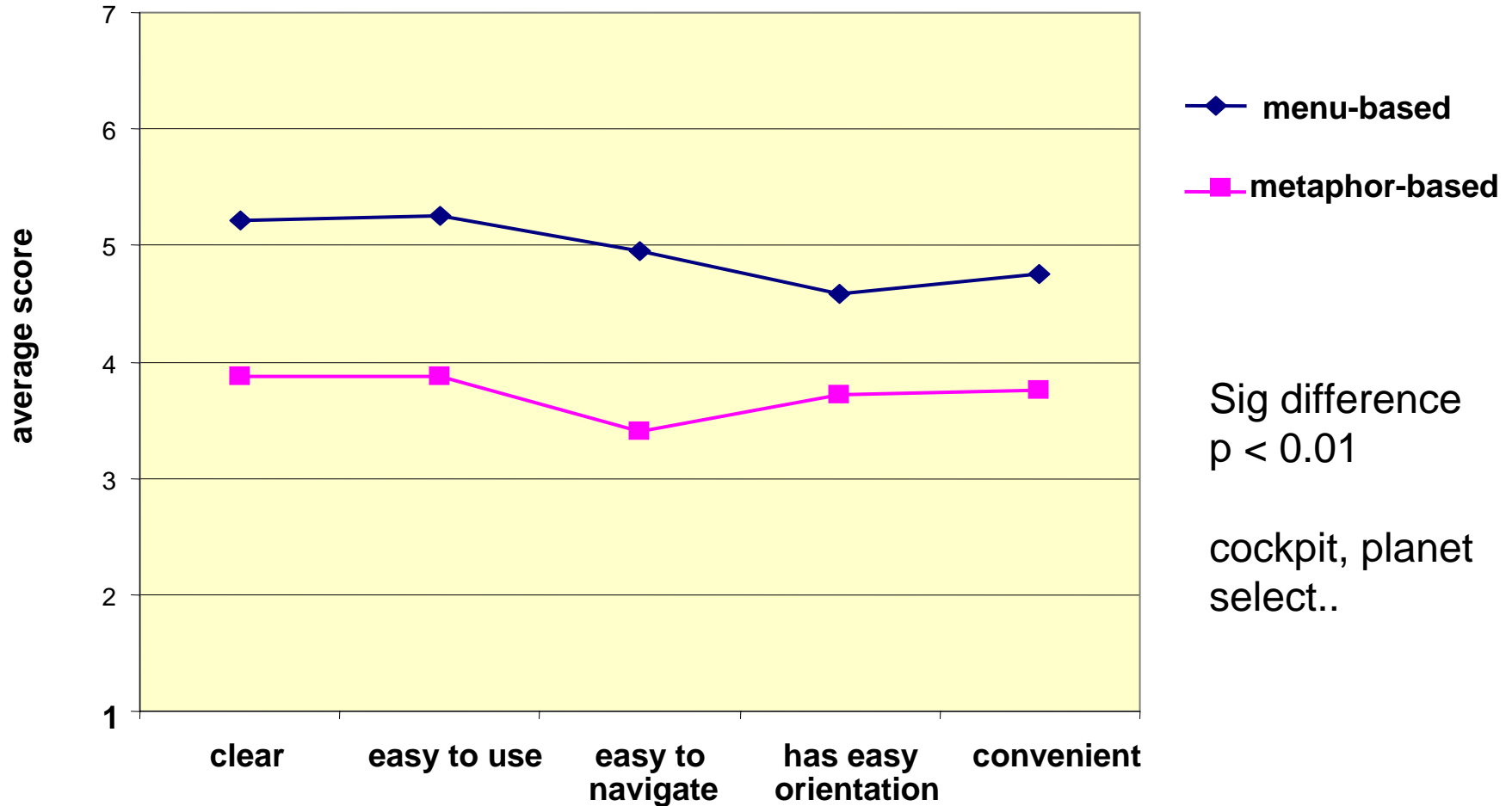
Menu Design web-site



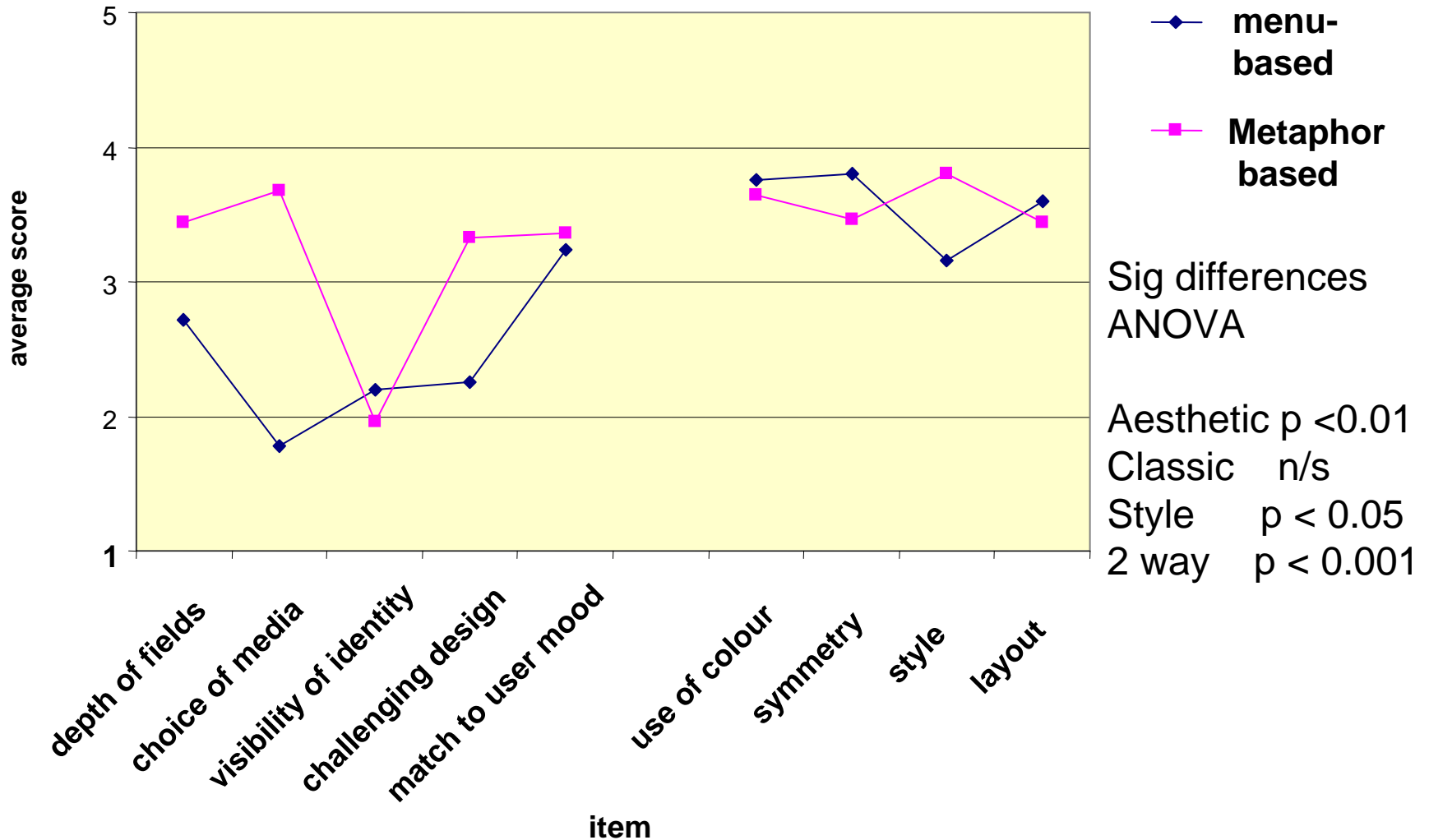
Design Differences

	Menu-based style	Metaphor-based style
Interaction	Menu and links	Interactive planets and cockpit metaphors
Use of colour	Black background, green and white text	Black background, green and white
Layout & presentation	Conventional block structures layout	Shape and shading emphasised
Use of media	Text plus still image	Animation in several places, interactive captions on images
Background image	Starfield display borders	Starfield display background

Usability- questionnaire results



Attractiveness ratings



Summary of Differences

Measures	Metaphor-based style	Menu-based style
Usability	--	+
Aesthetic classic	=	=
Aesthetic expressive	+	--
Information quality	--	+
Engagement	+	--
Memory	Content-based	Interface-based

De briefing workshop

- More reliable, less error prone ... Menu design $p < 0.05$
- More engaging.....Metaphor design $p < 0.05$
- Which site has worse usability ? Metaphor site (all agree)
- Which site would you prefer to use ? Metaphor site (all but 1)
Why ? – planet metaphor more engaging
- Which site recommended for teaching ? Even split Menu/Metaphor
Why ? – menu design... clarity, simplicity
- metaphor design.. engaging motivating

Conclusions (so far)

- Aesthetic design can make designs attractive, and may overcome poor usability, but...
- It depends on the user and task context- framing effect of questions
- Content and usability are going to be more important for 'serious' sites
- Aesthetic design and brand projection linked


Experiment 3

- Comparative evaluation of 3 similar sites from Stanford University
 - HCI school in computer science
 - Design school in Engineering
 - D-School, a new creative design oriented department
- Does background influence preference ?
 - technically oriented students (CS- Engineering)
 - design oriented students (multimedia, graphical design courses)
- Does the question influence choice ?
 - summer internship
 - PhD place

Stanford University D-School

aesthetics and design sub brand

The banner features a smiling man in a black turtleneck looking at a world map. The map is covered with numerous colorful sticky notes (pink, yellow, orange) with various sketches and text. A white arrow points to the text "DESIGN THINKING ..." on the map. The background is a light green and blue map.


d. 
Stanford Institute of Design

Big Picture Projects People Our Place Participate

A bold new design institute at Stanford.

The design institute is intended to advance multidisciplinary innovation, place Stanford at the epicenter of the design world, and strengthen the connection between the university and industry. We call it the d.school.

<h4>Big Picture</h4> <p>We use design thinking to drive multidisciplinary innovation</p> <p>MORE →</p>	<h4>Projects</h4> <p>We bring people together to tackle difficult, messy projects</p> <p>MORE →</p>	<h4>People</h4> <p>We take a human approach to design, business & engineering</p> <p>MORE →</p>	<h4>Our Place</h4> <p>We provide an innovation space for all of Stanford</p> <p>MORE →</p>	<h4>Participate</h4> <p>Work with us, spread the word, and invest in the d.school</p> <p>MORE →</p>
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d. MANIFESTO  All you need to know. On a napkin.

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HCI group

traditional layout, some design interests

STANFORD HCI GROUP

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Last updated September 13, 2005

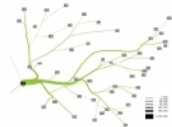
RECENT AND UPCOMING PUBLICATIONS

DUX 2005 November 3-5, 2005



[Teaching Embodied Interaction Design Practice](#), by Scott Klemmer, Bill Verplank, and Wendy Ju

INFOVIS 2005 October 23-25, 2005



[Flow Map Layout](#), by Doantam Phan, Ling Xiao, Ron Yeh, Pat Hanrahan, and Terry Winograd

UIST 2005 October 23-26, 2005



[d.tools: Visually Prototyping Physical UIs through Statecharts](#), by Björn Hartmann, Scott R. Klemmer, Michael Bernstein and Nirav Mehta ([DEMO](#))



[ButterflyNet: Mobile Capture and Access for Biologists](#), by Ron Yeh and Scott Klemmer ([POSTER](#))



[Notebooks that Share and Walls that Remember: Electronic Capture of Design Education Artifacts](#), by Brian Lee and Scott Klemmer ([POSTER](#))

Weekly HCI Speaker Series (CS547)
Fridays 12:30-2:00
Open to the public and available on the web

Stanford Graphics Lab
The Stanford HCI Group is associated with the Stanford Graphics Lab.

d.school
Stanford University is creating a new center for design.

Design Division

Mech eng but still a design message

Stanford University ■ Department of Mechanical Engineering

Welcome!



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\(a.k.a. the d.school\)](#)

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Results

	Usability	Content	Aesthetics	Reputation	Overall
HCI Group	**	***	*	*	**
Design-div Engineering	*	***	*	*	*
D-School	***	***	***	***	***



Negative comments



Negative comments but split between design and engineer students

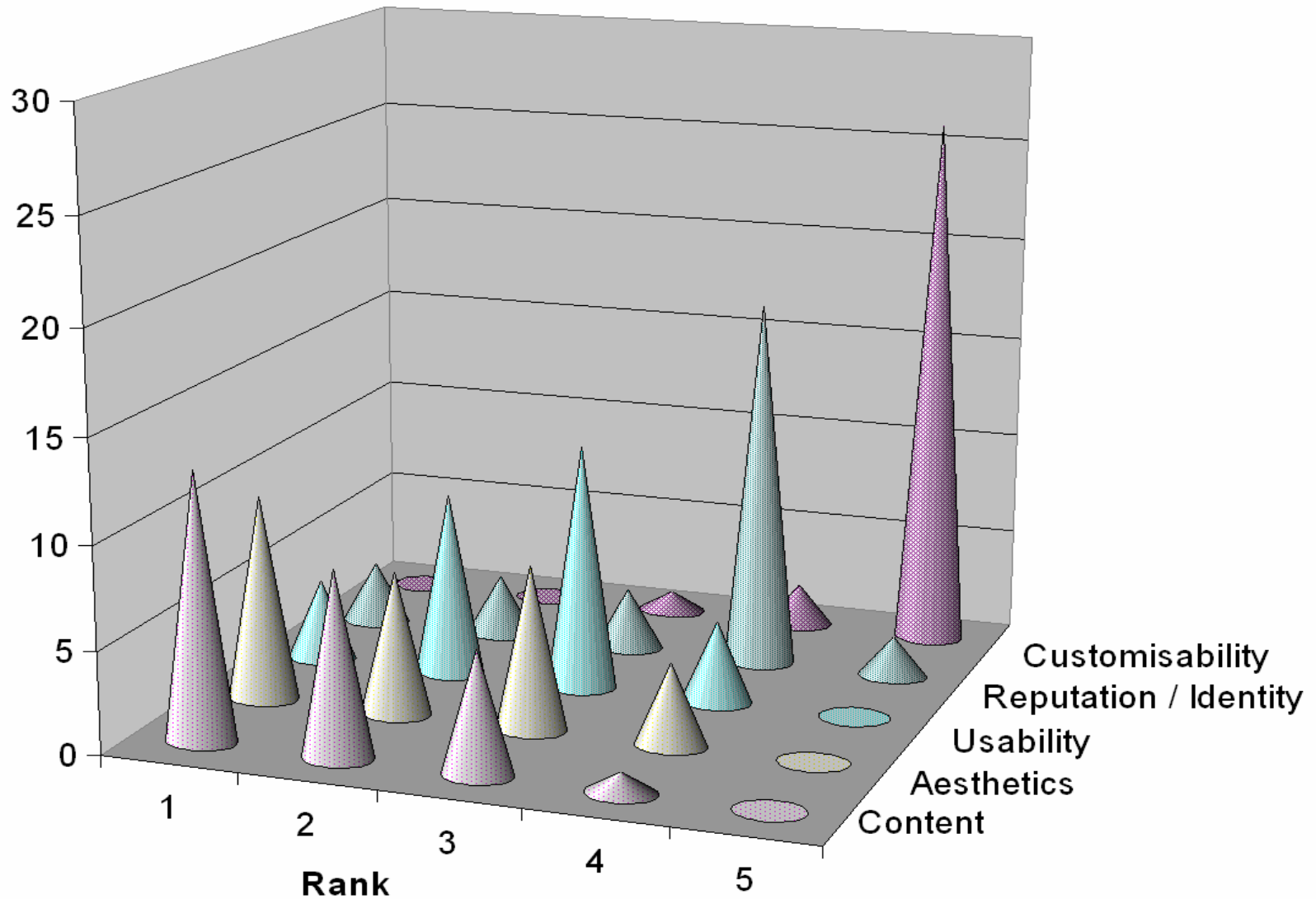
Results- Scenarios

Preferences- Framing Effect

	For Internship	For Phd study
HCI Group	**	***
Design-div Engineering	*	**
D-School	***	*

Preferences swap depend on the user's goal
But effect depends on background
-Engineer subjects.... Strong effect
-Designer subjects..... Weak effect

Factor Importance ratings



Conclusions

- Attractiveness is a complex mix of factors- but content and services probably more important
- Judgement and choice very dependent on user profile and goal
- Usability is important but some defects will be tolerated if overall experience is positive
- Aesthetics is important but only in context <site image, user background>
- Good design is about more than aesthetics- user engagement, and brand image

Attractiveness Design Guidelines (Process)

- Know your audience- requirements analysis, surveys, scenarios, user profiles, personae, storyboard testing
- Drive design investment from the user- application context (aesthetic and engaging design payoff)
- Consider sub sites for different audiences (target design investment in attractiveness)
- Always evaluate ! as early and as much as you can afford

Attractiveness guidelines (user engagement)

- Interaction – dialogue is more attractive than monologue (passive web sites)
- Interactive feature some ideas
 - active help for searching (decision trees, comparison tables)
 - quiz, make the user active partner in discovering...
 - social communication, chat rooms, exchange views
 - interactive worlds, game like exploration
- User as actor
 - Interactive worlds, viewpoint controls rather than cursor movement (compass metaphors)
- Agents (avatars, talking heads, chatterbots)
 - as helpers, companions
 - user adopts character

Design guidelines

(Media choice)

- *Dynamic media*- animation & video, have an arousing effect and attract attention
- *Speech* engages attention because we naturally listen to conversation.
- *Image* selected for emotive affect, but evaluate with your audience.
- *Music* selected for emotive appeal, but always evaluate.

Design Guidelines

Aesthetics

- *Judicious use of colour.*
- *Symmetry.*
- *Simplicity and space:*
- *Shape: break out of the box*
- *Structured and consistent layout.*
- *Depth of field: layers and background images*
- *Unusual or challenging images*

Thanks for your attention

For more information

- Sutcliffe, A. G. (2003). *Multimedia and virtual reality: Designing multisensory user interfaces*. Mahwah NJ: Lawrence Erlbaum Associates.
- Sutcliffe A.G. & de Angeli A., (2005), Assessing Interaction Styles in Web User Interfaces. In Proceedings of Human computer Interaction- INTERACT 05, Eds Costabile M.F and Paterno F., Rome Sept, 2005, Springer Verlag. pp 405-417
- Sutcliffe A.G. (2003), Multimedia User Interface Design, In The Human Computer Interaction Handbook, Eds Jacko J. and Sears A, pp 245-263, Lawrence Erlbaum

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Interactive Systems Design Group
School of Informatics
University of Manchester

ags@manchester.ac.uk