Computer Graphics for the Media Industry (CGMI)

A new MSc program

The Idea

- a growing demand in industry for professionals that combine advanced technical computing abilities with strong creative skills

- blending computer science disciplines such as programming, specification and research, with creative themes such as character design, storyboarding and scriptwriting

- a student will be equipped with a wide range of skills leading to a variety of employment opportunities in industries such as the film industry, games development, computer animation and special effects

Consortium

- Sarajevo School of Science and Technology, Bosnia and Herzegovina
- The Academy of Performing Arts, University of Sarajevo, Bosnia and Herzegovina
- The University of Buckingham, United Kingdom
- Comenius University, Slovak Republic
- The University of Zaragoza, Spain
- Sarajevo Film Festival
- Individual expert: Professor Alan Chalmers
- Project Advisory Board (Colin Dalton, Amra Baksic Camo, Slavomir Hazucha)

Modules

- **Core modules:**
- Modeling and Animation I and II
- Directing and Storytelling
- Postproduction (editing and compositing)
- Project Thesis and Showreel
- **Optional modules:**
- Real Time Graphics and Game Development
- Advanced Computer Graphics
- Graphic Design
- Drama and Acting
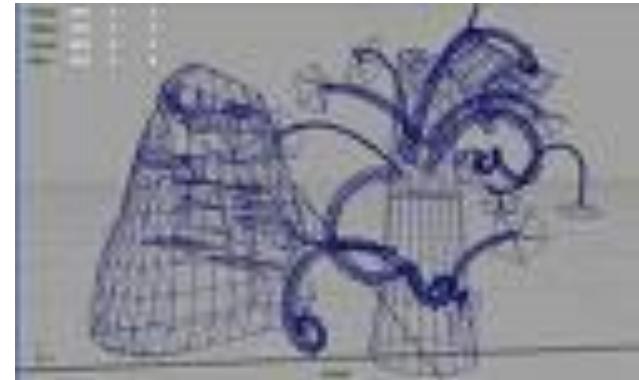
Digital Storytelling

- Previous three slides told You the story in text mode
- Another channel was added by spoken comments
- The storytelling method in this case is back-telling
- Back-telling You know from museums
- Museum back-telling uses images, symbols, audio
- Images 4 children, symbols 4 adults, audio 4 parents
- Museum back-telling: only things, people, environments
- Back-telling You know from family, school, giving a call
- Back-telling goes to the past using <u>one single path</u> and usually <u>one absolute truth</u> (meaning of the story) vs. My name is Red by Orhan Pamuk (1998)

Modelling and Animation I and II

- Modelling techniques
- Mapping
- Computer animation
- Lighting techniques
- Shading techniques
- Advanced animation techniques

Directing and Storytelling

This core module will enable students to write, design, storyboard and direct an animated feature. The module will comprise of six main elements:

- Drawing
- Narrative
- Technical feasibility assessment
- Storyboarding
- Presentation
- Directing

Postproduction (editing and compositing)

This core course provides the students with the skills necessary to produce the polished finished product. Topics will include:

- The basic principles of film language, editing basics, editing techniques

- Compositing principles and Green Key

- Compositing techniques

Real Time Graphics & Game Development

- Rasterization

- Textures

- Advanced techniques

- Hardware acceleration

Advanced Computer Graphics

- The physical world

- Global illumination

- Simulating advanced natural phenomena

- Visual perception

Graphic Design

- Providing the students with a detailed understanding of visual communication using text and/or images to present information, or promote a message. The topics to be covered include:
- Visual language, composition and layout
- Color theory, systems, basic harmonies
- Perspective
- Typography
- Multimedia design
- Cultural differences in graphic design

Drama and Acting

This optional module will provide the students with an introduction to the processes of creating and representing characters. This module will include:

- Methods of reading rhythm, shape, energy and text in relation to human and animal bodies and movements
- Placing these methods in the context of live performance, moving image and animation in order to explore how embodied characters become represented
- Using the practical study of masks, live object animation and animated figures to examine ways in which meanings are created and received
- Undertaking critical analysis of screen based characterization in film, animation and computer games to explore how a character is represented and read.

Digital Storytelling 2

- Previous seven slides used text mode + illustrations
- Another channel was added by spoken comments
- The storytelling method in this case is back-telling again
- Back-telling You know from museums
- Museum back-telling uses images, symbols, audio
- Images 4 child, symbols 4 adults, audio 4 parents
- Museum back-telling only things, people, environments
- Back-telling You know from family, school, giving a call…
- Back-telling goes to the past using one single path and usually one absolute truth (meaning of the story, what is the principle of Princip story? – discuss this now)

Digital Storytelling 3

- Previous seven slides used text mode <u>+ illustrations</u>
- Another channel was added by spoken comments
- The storytelling method in this case is back-telling again
- Back-telling You know from museums
- Museum back-telling uses images, symbols, audio
- Images 4 child, symbols 4 adults, audio 4 parents
- Museum back-telling only things, people, environments
- Back-telling You know from family, school, giving a call<u>…</u>
- Back-telling goes to the past using one single path and usually one absolute truth (meaning of the story<u>, what is the principle of Princip story? – discuss this now</u>)

Project Thesis and Showreel

- The project will contain a significant scientific or technical component and will usually involve a software development component.

- The students will be expected to work full-time on the project and meet regularly with their supervisors to discuss progress and new ideas.

- The outcome will be a dissertation documenting the project and a showreel of the results achieved.

computerGraphics
FOR THE MEDIA INDUSTRY

Program ECTS credits

- Preparatory Courses   0 ECTS

Mandatory Courses (24 ECTS credits):
- Modelling and Animation I   7 ECTS
- Modelling and Animation II   7 ECTS
- Directing and Storytelling   5 ECTS
- Postproduction (Editing and Compositing)   5 ECTS

- Project Thesis and Showreel   20 ECTS

Optional Courses (16 ECTS credits):
- Real Time Graphics and Game Development 8 ECTS
- Advanced Computer Graphics   8 ECTS
- Graphic Design   8 ECTS
- Drama and Acting   8 ECTS

Digital Media Centre
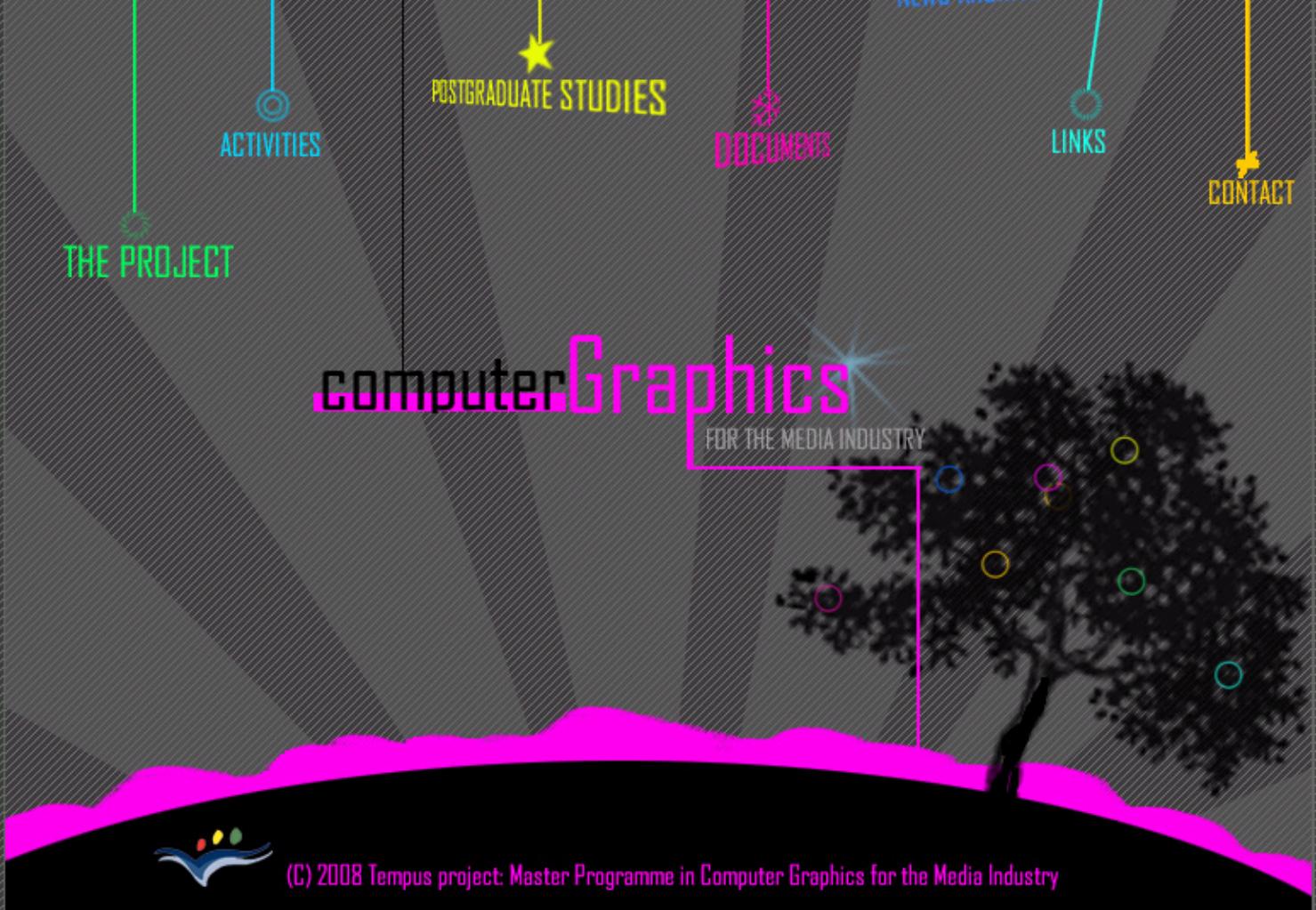
- A high quality **Digital Media Centre** will be created at SSST, complete with state-of-the-art software, hardware, infrastructure and a well stocked library.

- 15 graphics workstations

- Maya, Adobe After Effects, RealFlow, Final Cut Pro, Adobe CS 3 Design Premium

- Green Key equipment

- Online Editing and Postproduction system

- Distance Learning equipment

Program Inauguration

- Pilot study program will be taught in academic year 2008/09

http://cgmi.ssst.edu.ba/

Computer Graphics for the Media Industry (CGMI)

A new MSc program

An application for this study programme could be found at
http://cgmi.ssst.edu.ba

SARAJEVO SCHOOL OF SCIENCE AND TECHNOLOGY
Bistrik 7,
Sarajevo 71000,
Telephone: +387 33 563 030 / 654-716
FAX: +387 33 563 033
Email: admissions@ssst.edu.ba

COURSES	ECTS CREDITS	LECTURE + LAB HOURS	TOTAL HOURS
Preparatory Course	0	40	n/a
Mandatory courses			
Modeling and Animation I	7	40	175
Modeling and Animation II	7	40	175
Directing and Storytelling	5	40	125
Postproduction (Editing and Compositing)	5	40	125
Project Thesis and Showreel	20	40	500
Optional Courses			
Real Time Graphics and Game Development (technical)	8	40	200
Advanced Computer Graphics (technical)	8	40	200
Graphic Design (creative)	8	40	200
Drama and Acting (creative)	8	40	200
TOTAL	60	n/a	1500

MSc Programme in Computer Graphics for the Media Industry ha
designed in response to a growing demand in industry for profes
that can combine advanced technical computing abilities with
creative skills, blending computer science disciplines su
programming, specification and research, with creative themes s
character design, storyboarding and scriptwriting. Upon complet
course, the student will be equipped with a wide range of skills, lea
a variety of employment opportunities in industries such as t
industry, game development, computer animation and special effe

This programme is primarily aimed at computer science gr
though students with a similar degree or relevant experience
be suitable. The creative elements of the course will be develo
taught in conjunction with our partners in the Academy of Per
Arts of Bosnia and Herzegovina, making use of their extensive e
in all aspects of literature, film and television.

The partners shall, in cooperation,
introduce students to a range of
modern computer graphics and
animation techniques, as well as
character design, scriptwriting, film
criticism, storyboarding and
production.

computer graphics for the media industry

computer grap
for the media

The curriculum for the Master of Science Program will consist of core modules in both technical and creative subjects. In addition, a number of optional modules will be offered.

Modelling and Animation: This core module will cover all aspects pertaining to the creation of highly detailed computer models and the techniques used to animate these models. Topics will include:
- Modelling Techniques: wireframe model, boundary representation, extruding, ruled surfaces, Bezier surface patches, volume representation, spatial dividing schemes, procedural modeling, fractals, soft objects, procedural manipulation;
- Mapping: basic mapping techniques, environment mapping, vertex shaders;
- Computer Animation: lightning techniques, ambient, diffuse and specular reflection, shading techniques: Gouraud, Phong, hidden surfaces techniques;
- Advanced animation techniques: skeleton creation and animation, binding, facial animation

Directing and Storytelling: This core module will enable students to write, design, storyboard and direct an animated feature. The module will comprise six main elements:
- Drawing: regular life drawing practice, using a variety of media, enabling students to assemble a small portfolio. This element includes the analytical study of line, colour and form.
- Narrative: composing a short screenplay for animation, including the analytic study of narrative structure and characterisation.
- Technical Feasibility Assessment: undertaking such assessments on any projects, this element includes consideration of A.I. for animation issues.
- Storyboarding: composing a short storyboard, this element includes the analytical study of compositional technique and screen grammar.
- Presentation: a group or individual presentation of a project idea and storyboard to a panel of tutors and peers. This includes study of presentation and 'pitching' techniques.
- Directing: coordinating all elements presented in the storyboard, making the filming plan, deciding on the number of cameras, lighting, actors, costumes, green key and set elements.
Each of the above elements will include consideration of aspects of current industrial structures and practices.

Postproduction (editing and compositing): This core course provides the students with the skills necessary to produce the polished finished product. Topics will include:
- The basic principles of film language, editing basics, editing techniques,
- Compositing principles: image layers, matte, multisource operators, keying, image processing operations, color manipulations, spatial filters, geometric transformations
- Compositing techniques: combining live picture with computer generated characters and environments

Project Thesis and Showreel: This key core module will enable the students to undertake a major piece of project work starting with a project proposal. The students will be able to produce a detailed design for a project, implement it, evaluate its performance, and document what they have achieved. The project will contain a significant scientific or technical component and will usually involve a software development component. The students will be expected to work full-time on the project and meet regularly with their supervisors to discuss progress and new ideas. The outcome will be a dissertation documenting the project and a show reel of the results achieved.

computer graphics for the media industry

computer graphics for the media industry

The optional modules enable the students to specialise in either the gaming or film in

Real Time Graphics and Game Development: This module is aimed at those students planning a career in the game industry, either as part of an exisiting company or in th startup. Topics will include:
- Rasterisation: algorithms for taking a 3D scene, described as polygons or triangles, a rendering it rapidly onto a 2D display; transformations, clipping, scan conversion, hardw acceleration techniques, graphics pipeline.
- Textures: making the scenes look more real; environment mapping, bump multiresolution textures
- Advanced techniques: Level of Detail, shadow mapping
- Hardware acceleeration: GPU programming, OpenGL, DirectX

Advanced Computer Graphics This optional module provides the students with an unders of the techniques necessary to produce highly realistic computer imagery. Topics to ac simulate real world environments will include:
- The physical world: colour, the propagation of light, high dynamic range i
- Global illumination: computer algorithms for high fidelity graphics, ray-tracing, r photon mapping.
- Simulating advanced natural phenomena: participating media, caustics,
- Visual perception: the human visual system, saliency and task maps, selective re

Graphic Design: This optional module will provide the students with a detailed understa visual communication using text and/or images to present information, or promote a mes The topics to be covered include:
- Visual language, Color theory, color systems, basic color harmonies, Composition and Perspective, Typography, Multimedia design, Culture differences in graphic design

Drama and Acting This optional module will provide the students with an introduction processes of creating and representing characters. This module will include:
- Methods of reading rhythm, shape, energy and text in relation to human and animal bo movements
- Placing these methods in the context of live performance, moving image and animation to explore how embodied characters become represented
- Using the practical study of masks, live object animation and animated figures to exami in which meanings are created and received
- Undertaking critical analysis of screen based characterisation in film, animation and computer games to explore how a character is represented and read.

Full teaching material, including lecture slides, coursework and solutions will be develo each of these modules. Questionnaires will be given to both students and staff du inplementation phase of this project to obtain detailed feedback, which will be used to str the course where necessary.

Digital Storytelling 4

- The following 11 slides exclude text mode, just for children

ARMIJA
REPUBLIKE
BOSNE I HERCEGOVINE

1. KORPUS

CG for Media Industry

- An international team of teachers prepared, within the EC TEMPUS grant, one year MSc study program @ Sarajevo School for Science and Technology (SSST). The study program was reviewed by leading professionals from media industry.

- The frequentants, for 9200 euro, gain both fundamentals of art creativity and technical hands-on experience. One student obtains two diplomas - from SSST and from University of Buckingham, UK.

- This kind of course meets the requirements of renaissance team for creation of engaging multimedia.

computerGraphics
FOR THE MEDIA INDUSTRY

CG for Media Industry

- Future Work - Serious Games (with Tibor Skala and Faculty of Computer Graphics, Zagreb, HR)

- Future Event – The Future of CG Education, Budmerice, April 2009, between CESCG and SCCG conferences

- Organized by Silvester Czanner, UK

Sarajevo, Oct 2008

- Questions?

Sarajevo, Jan 2009, now

- That was the course context… (with kabuki directing)
- Motivation class today and now
- Fundamental notions, challenging questions
- Class organization (R/W, Jan 26-30, virtually)
- Evaluation
- Global story research state-of-the-art
- Best practice examples
- Q/A – any time

Sarajevo, Jan 2009

- Your turn

- Please, tell us Your story, if possible, without naming it…

- We will give You a written feedback for Your convenience

- Thank You all

Very Initial Observations

• Observe our everyday experience… WLS, WLS, WLS…

• WLS = We live stories

• WLS = We love stories

• WLS = We learn stories

• Life = story

We Live Stories

- Life = story

- Similarity of life stories – situations, characters, motives…
-
- Situations… fertility, love, birth, growth, fertility, love, birth, growth…
- … starting situations, different from death, desillusion, war…
- Characters… mother, father… sanguinic, melancholic, phlegmatic, choleric… hero, villain, godess… football team, class, crowd…
- Motives… love story, warning story, history… emotional, rational, moral… individual story, project history, national deliberation

We Love Stories

- Story = storage format
- Stories stored in our memory
- Our cultural capital = static knowledge + dynamic experiences
- Our cultural capital = "data" (out of time) + "algorithms" (time)
- Story has something to do with problem solving
- Stored stories = examples of problems solved
- We love our life and all stories in our memory as context to our life story and a layer of our identity (individual, social)

We Learn Stories

• Story has something to do with problem solving

•

• Our cultural capital = <u>static</u> knowledge + <u>dynamic</u> experiences
• Our cultural capital = "data" (<u>out of time</u>) + "algorithms" (<u>time</u>)

• Basic 4 problems = survive in any second (fear, anger, hunger, sex)
• Example: A potato is edible (static data) and boiled potato (dynamic algorithm) solves the hunger problem

• Very urgent problems (fear, anger) – less than one second
• Slower problems (hunger, sex) – hours, days, years, lifelong

WLS Example

- Story has something to do with problem solving
- Our cultural capital = <u>static</u> knowledge + <u>dynamic</u> experiences
- Our cultural capital = "data" (<u>out of time</u>) + "algorithms" (<u>time</u>)

- Basic 4 problems = survive in any second (fear, anger, hunger, sex)
-

- Example: A potato is edible (static data) and boiled potato (dynamic algorithm) solves the hunger problem

- Very urgent problems (fear, anger) – less than one second
- Slower problems (hunger, sex) – hours, days, years, lifelong

Where Is the Story Start?

• Aristotle: Poetics (~ Umberto Eco: Name of the Rose)

• Example: A potato is edible (static data) and boiled potato (dynamic algorithm) solves the hunger problem

• Where is the boiled potato algorithm start?

• Buy potatoes? Discover America for potatoes first? Plant potatoes? Does the algorithm contain just cleaning and boiling? Is your first love story starting with your first boiling potatoes? Did you boil potatoes for the first time when your grandmother died?

• Aristotle: The starting point is exactly there, where nothing relevant happened before.

Where Is the Story End?

• Aristotle: Poetics. Example: The boiled potato solves the hunger problem. Where is the boiled potato algorithm/story end?

• Buy boiled potatoes and eat them? Will you eat in the dystopic future the very last potato in the Universe? Is the end of the boiled potato story in the SSST water closet? Does the algorithm contain just cleaning and boiling? Was your first love story ending with boiling potatoes scene? Did boiled potatoes help your father when he was stomach sick? Imagine **a storyteller** telling a story about boiling potatoes in Europe before 1492 – he/she will be for sure misunderstood and eventually burned in the fire as a which…

• Aristotle: The ending point (story closing) is exactly there, where nothing relevant happens after.

What is Interesting?

On Model of a Human Being

- The Act of Creation (creatology):

A
S
H

AP → GS → WS

AH!

AHA!

HAHA!

- Association >> bissociation
- Arthur KOESTLER: no labyrinth, no mouse, just bisociating two contexts

computerGraphics
FOR THE MEDIA INDUSTRY

7 Elements of Digital Storytelling

•Educational uses of Digital Storytelling.

•Class at Houston University

http://digitalstorytelling.coe.uh.edu/index.html

•A useful starting point to begin working with digital stories.

•1. Point of View

•2. A Dramatic Question

•3. Emotional Content

•4. The Gift of Your Voice

•5. The Power of the Soundtrack

•6. Economy

•7. Pacing

computerGraphics
FOR THE MEDIA INDUSTRY

Seven Elements

•1. **Point of View**

•What is the main point of the story and what is the perspective of the author?

•2. **A Dramatic Question**

•A key question that keeps the viewer's attention and will be answered by the end of the story.

•3. **Emotional Content**

•Serious issues that come alive in a personal and powerful way and connects the story to the audience.

•4. **The Gift of Your Voice**   A way to personalize the story to help the audience understand the context.

http://digitalstorytelling.coe.uh.edu/index.html

Seven Elements 2

- 5. **The Power of the Soundtrack**
- Music or other sounds that support and embellish the storyline.
- 6. **Economy**
- Using just enough content to tell the story without overloading the viewer.
- 7. **Pacing**
- The rhythm of the story and how slowly or quickly it progresses.

- http://digitalstorytelling.coe.uh.edu/index.html

Your Digital Story: Demo Reel

- Which single image represents Your key contribution?

- What is the title of Your demo reel?

- Can You sketch a logo for this digital story?

- … (ask, please, another question at this level)

- …
-                                  fundamental project decisions.
- Colin Dalton recommends…

http://www.pixar.com/companyinfo/jobs/howto.html

Pixar Demo Reel Guidelines

1) An application that requires a demo reel submission has 5 parts:

a) the cover letter
b) the resume
c) the demo reel
d) the demo reel breakdown
e) the on-line application (the application contains the Reel Submission Agreement)

The cover letter can (and should) be brief. The resume should tell us where you've worked, what you did when you worked, what kind of coursework you've had, and what tools, languages, and systems you can use. The demo reel breakdown is really essential (see #7, below). Don't force us to look at a website - when we're looking at reels, we're all greased and ready to go with reels, not websites. (We will look at websites if we're hiring you as a web designer.)

2) Your reel should be no more than 4 minutes.

Just like a resume is no more than 2 pages unless you've been CEO or a senator. If you have a lot of great material...do a 4 minute version, and then refer to longer pieces on a DVD afterwards if you get that far into the process. "For the entire short see the additional materials section...blah blah blah yakity shmakity."

Don't do a "collage" of your work, with interleaved random clips from all your different work. No, no, no. We won't be able to figure out what's going on. DO give each piece the time it deserves, no more nor less, and just show it once. Keep it simple.

3) Don't show un-approved work.

Don't show work from other studios if it has not been approved or we will not look at the demo reel.

4) Nobody cares about music/soundtrack.

We turn off the sound. But sometimes we listen to it and get really annoyed if we don't like your taste in music. Keep it basic or leave it off.

computerGraphics
FOR THE MEDIA INDUSTRY

5) Put your best work first.

Lead TDs often have 10 - 20 reels to go through. They might watch the first minute, see if anything intrigues them. If so, they'll watch the other 2 minutes. If not, move on. Show your best, most impressive work first -- presumably the work you are specifically applying for. Make it clear on your demo reel, cover letter, and resume what type of position you're applying for. Don't try to change your demo reel because our website says we only need, say, lighting TD's now, either. Say what you're good at and make your reel demonstrate that.

6) Demo Reel Breakdown (DRB).
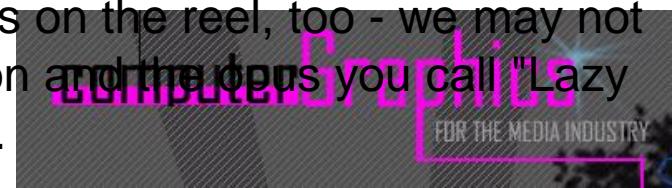
We want to know what you did on this reel. Here's a shot of a Luxo lamp jumping over a ball. Did you model the lamp? Do the animation? Shade it? Light it? Render it? Write the story? Executive-produce it? The DRB should tell us what we're looking at, what YOU did on it, and what tools you used.

"Sleeping ball: (June 2003) Group project; I shaded the plastic sphere in Slim/Renderman" is a good entry.

"Group project; project used Maya, Slim, Renderman, and Perl" is less useful.

Put this on the frame before the sequence and again in the DRB we can refer to. We often fall behind in reading your DRB; help us keep track of what you're showing. If you have two dozen entries, number the DRB and put numbers on the reel, too - we may not know the difference between your "Sleeping ball" animation and the dogs you call "Lazy Sphere".   TM & © 1986- 2008 Pixar. All Rights Reserved.

7) Include a title card at the beginning and end with your name, address, phone, and email.

Including the position you're looking for is not a bad idea, either. The opening one doesn't need to be on too long, but the end one should last for a while. Don't make people desperately pause to get your email address.

8) Show work that proves that you know what you did.

If you've done a sequence, show it at several stages of production. If you've done shading, show the basic color pass, the procedural shading, the painting, and a lit version. If you wrote clever software, include real work that was done with the software, and include on the title card, like, "Implemented simulation of Segway dynamics" in addition to everything else you did. Don't show screen shots of people using the software or screen grabs of C++ code.

7) Include a title card at the beginning and end with your name, address, phone, and email.

Including the position you're looking for is not a bad idea, either. The opening one doesn't need to be on too long, but the end one should last for a while. Don't make people desperately pause to get your email address.

8) Show work that proves that you know what you did.

If you've done a sequence, show it at several stages of production. If you've done shading, show the basic color pass, the procedural shading, the painting, and a lit version. If you wrote clever software, include real work that was done with the software, and include on the title card, like, "Implemented simulation of Segway dynamics" in addition to everything else you did. Don't show screen shots of people using the software or screen grabs of C++ code.

computerGraphics
FOR THE MEDIA INDUSTRY

9) Take the time to polish.

It seems silly, but people get in such a rush to get the reel out the door, they lose sight of the big picture. THIS IS HOW YOU WILL GET A JOB. And since it's a job in a visual industry -- it should LOOK really, really good. Don't use clashing colors. Make sure your shaders are anti-aliased. Make sure your lights aren't blown out too bright. Make it clear what we're looking at. Don't use confusing fonts. Keep it clean and simple!

10) Show it to other people.

Have other people critique it. Not necessarily the work on it, but the way you're presenting your work. (Though getting critiques of the work on it is a great idea, too.) If a bunch of people are working on their reels at the same time, have a Reel Showing one night.

And 11) If you really don't have stuff to put on a reel, don't send one.

Well-presented still images can be as effective as moving pictures.

Make sure you apply on-line, understand the Submission Process as defined in the Job Description, understand the Submission Guidelines, and upload any necessary files if applicable

Demo Reel

- Example Multitouchreel
- Questions?

- Your turn.

Demo Reel

- Fill in the title of Your demo reel

- A
- B
- C
- D
- E

- Let us show the material (CV, projects…) => directing need

Directing

- "Directing cannot be taught"
- O. Zahradnik (2009): The goal of directing is to transfer the deepest message of given text (script) from given author to given audience
- How to measure the quality of directing?
- Informal measure = success ~ number of copies
- Nobel Prize, Academy Awards, Webby Awards, Golden Globe, CPL for online games…
- How to teach/learn directing?
-

Directing What?

- Theory of communication vs. art theory

- Duality of notions

- Information .. Information/semantic content
- Information .. Artistic/aesthetic content
- Channel .. Communication link, transfer from sender to receiver
- Channel .. Art piece perception, visual, audio (VAKOG) channels

Directing Definition

- Directing is an artistic activity and profession connected with creation of a dramatic piece (Mala cs. encyklopedie, part V, p. 327)

- Directing converts the dramatic text (drama, script) into final shape of performance by means of acting characters and scenic environment thus actualizing the text for contemporary audience

- Forms and methods of d. differ for theatre/movie

Directing Theatre/Movie

- Directing theatre: analyze/read script with actors, cooperate with a scene designer, arrange characters and their interplay in scenic environment

- Directing movie = directing theatre + record + montage audio & video

- Workflow: idea, message, name, logo, pitch, treatment/synopsis, script, preproduction, production, postproduction, promotion, distribution, remake

Directing Workflow

- Idea!
- Message
- Name, logo, pitch, treatment/synopsis, script
- Preproduction
- Production ~ shooting, stock footage, sound space
- Postproduction
- Promotion, distribution, remake/forget

Directing Dimensionality

- Dimension => channel mode
- 1D space L => text string, quipu, Morse …---… 112
- 1D time T => speech, music, sound, …---…
- 2D space static => drawing, painting, photo
- 2D space dynamic T => film/movie, TV
- 3D space static => sculpture,architecture,garden
- 3D space dynamic T => theatre, stereomovie
- 3D space dynamic T interactive => games, e-learning, virtual museum

computerGraphics
FOR THE MEDIA INDUSTRY

Directing Theories (No. 1 and Example and ...)

- 1D space L => Poetics by Aristotle .. McKee, Field
- 1D time T => Rhetorics by Aristotle, music theories
- 2D space static => visual art theories
- 2D space dynamic T => Ejzenstein etc.
- 3D space static => Vitruv, vis-art theories, Schulze
- 3D space dynamic T => Aristotle .. Scherhaufer
- 3D space dynamic T interactive => Qvortrup, Cameron-Kenderdine … Appraisal theory gives MEASURE: virtual museum -> real number

Directing Roles

- 1D space L => author = director
- 1D time T => radio play, song singing, rarely =
- 2D space static => author, exhibition curator
- 2D space dynamic T => script, music, camera…
- 3D space static => author, producer
- 3D space dynamic T => author, editor, director
- 3D space dynamic T interactive => author(s) and interacting audience COAUTHORING in virtual mindscape, any user is co-director in real-time

References

[Aris01] ARISTOTELES. 1944. *Poetika*. Slovak translation. Martin: Matica slovenská 2006.

[Bern01] BERNERS-LEE, T. *et al.* 2001. *The Semantic Web*. Scientific American. [online] At http://www.sciam.com/article.cfm?articleID=00048144-10D2-1C70-84A9809EC588EF21, May 2001. (October 8, 2008.)

[Boro08] BOROVSKÝ, P. – SAMUELČÍK, M. - NOVOTNÝ, M. – STANEK, S. — LACKO, J. – FERKO, A. 2008. 3D Multimedia Historic Bratislava. *CORP 2008: Urban Planning and Regional Development in the Information Society.* Schwechat-Rannersdorf: Competence Center of Urban and Regional Planning, 2008. - ISBN 978-39502139-5-9. - pp. 525-530.

[Came07] CAMERON, F. – KENDERDINE, S. eds. 2007. *Theorizing Digital Cultural Heritage.* ISBN 0-262-03353-4. Cambridge: MIT Press 2007.

[Lebe07] LEBERL, F. W. 2007. Internet-inspired Urban Models. Comenius University Talk. Bratislava 18. 10. 2007.

[Norb81] NORBERG – SCHULZ, Ch. 1981. *Genius loci, k fenomenologii architektúry.* ISBN 80-207-0241-5. Czech translation by Petr Kratochvíl and Pavel Halík from London 1981 edition by Academy Editions. Praha: Odeon 1994.

[PMZA08] *Virtual Museum Portal of Považské múzeum Zilina.* [online] At www.pmza.sk (October 8, 2008.)

[Qvor01] QVORTRUP, L. *ed.* 2001. *Virtual Interaction: Interaction in Virtual Inhabited 3D Worlds*. ISBN 1-85233-331-6. London: Springer 2001.

[Qvor02] QVORTRUP, L. *ed.* 2002. *Virtual Space: Spatiality in Virtual Inhabited 3D Worlds*. ISBN 1-85233-516-5. London: Springer 2002.

Directing Rules

- "Directing cannot be taught"… How to teach/learn directing?

- Rules: the storyteller cannot be the villain (A. Christie), literature cannot defend a crime (G. Orwell), a child cannot be beaten at the stage, audio/video should be perceivable, short term memory capacity is about 128 bits…

- Levels: message, narration, physics, perception, directing… How to sort levels?

Maslow's Hierarchy of Needs

- Pyramid of needs by Maslow (Glassner, p.77)
- Transcendence, self-actualization
- Aesthetics, cognition
- Esteem, belonging and love, safety and security, physiology

246 Questions to Analyze

- Based on JAMES, T. *Analyzing Text for Actors, Directors, and Scenographers.* Focal Press 1992. (Scherhaufer, p.324)
- Time, place, society, background of story
- Plot, structure, character, complexity
- Dialogue, theatrality, tempo, rhythm, mood
- Style

- NEW!!! Recent paper on **automatic script analysis**: Murtagh 2008 >> dendrogram

Top Names in Directing

- Stanislavskij (1863-1938) (Scherhaufer, p. 254)
- Brecht
- Ejzenstein (1898-1948) – a soldier returns home, his wife has a baby, he leaves
- … Welles, Spielberg, Wachowskis…
- SCI style, CPL games, …
- Virtual Museum of Canada, Smithsonian's NMAH "September 11, Bearing Witness to History"

Workflow in Directing (4D case)

- Composition (Scherhaufer, p. 255)

- Visualization (scenography is one actor)

- Movement

- Rhythm and tempo

- Audition and casting (sounds and actors)

- Work with an actor – reading, arranging, creating the character (or a type only)

What Unifies **Directing&Storytelling?**

- What Unifies Directing & Storytelling?
- Creativity
- Models of creation: labyrinth, semiotic, bisociation…
- E. Thorndike – labyrinth of possibilities
- V. N. Pushkin – labyrinth to invent
- A. Koestler – transfer the context

What Means Creative?

- Solving hard problems (unsolved, new…), breaking the assumptions, like safe glass 4 cars
- Thorndike – search in given labyrinth
- Pushkin – brainstorming (generate, regulate)
- Koestler – discover the bridge from/to elsewhere
- NEW!!! Blue ocean strategy: IBM, Cisco, Dell…
- **creativity – the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device, or a new artistic object or form.**
- http://www.britannica.com/search?query=creativity&ct=&searchSubmit.x=0&searchSubmit.y=0

computerGraphics
FOR THE MEDIA INDUSTRY

Creatology (up to 75 methods)

- How to get an idea? In four phases: (Scherhaufer, p. 167)
- 1. Preparation – collecting material, formulating problem, before getting idea
- 2. Incubation – seemingly no activity, but the brain gets sick with the problem, search and combination, playing around with trivial aspects of the problem
- 3. Enlightment – intuition jump or new understanding of the problem
- 4. Verification – evaluate, verify/modify, analyze

computerGraphics
FOR THE MEDIA INDUSTRY

Creation Influenced

- 3 groups of factors (Scherhaufer, p. 169):
- 1. Intellectual factors – individual abilities of a creative personality, cognition, memory, way of thinking (convergent, divergent, lateral, induction, deduction) // Adult, symbolic, rational
- 2. Emotional factors – autoconcentration, spontaneity, independence, creative freedom, flexibility // Child, visual, emotional
- 3. Social factors – stimulating, neutral, hostile, destructive // Parent, audio, moral (// E. Berne)

Creating New Whole/Shape

- Sculpting metaphor
- Travelling metaphor
- Bridging metaphor
- Gap filling metaphor (horror vacui)
- Similar to playing game, gamelike process
- Art vs. Craft
- Authoring consists from both

What Divides **Directing&Storytelling?**

- What divides Directing & Storytelling?

- Movie script case – Production Considerations:

- Camera angles, arrangement details (John enter left), montage, avoid visual cliches, children & animals are production problems, do not number shots, weather, short description of large action

- The Charge of Light Brigade – famous line:

- "They Charge." (Blacker, p. 82)

- E.g. Sophocles: Antigona, Scherhaufer: square

computerGraphics
FOR THE MEDIA INDUSTRY

Strong Directing Ideas

- An empty square at the stage (darwish's camel)
- The Wall – use all visual languages ~ kabuki
- Camera in an invisible actor in love
- Exchange dark and light (given by script)
- Exclude details, use color at the end only for orthodox icons (Andrej Rublov by Tarkovskij)
- Mystify the population by radio play (Orson Welles)
- Brecht – Verfremdungseffekt
- Koyanisquatsi (just time, music & images)

Strong Directing Ideas 2

- Auguste Boal – invisible theatre in Brazil, **flash mob**
- Bertolt Brecht – anti-meaning by intonation
- Fink – cabaret Pfeffermühle in fascist Berlin
- Epistemologic confusion in Matrix
- Reverse time for storytelling
- Kinoautomat – binary tree, audience voting
- Happening and Orange alternative in Poland
- Scenic journal Rozrazil by Peter Scherhaufer
- The same story twice or more - Rashomon

Algorithmic Strategies

- 1. Iteration
- 2. Sweeping
- 3. Sorting
- 4. Divide & Conquer
- 5. Locus Approach
- 6. Duality
- 7. Combinatorial Analysis

Algorithmic Strategies

- 8. Prune & Search
- 9. Dynamic Programming
- 10. ASA
- 11. Genetic Algorithms
- 12. Memetic Algorithms
- 13. DNA Computation, Neural Networks...
- 14. Darwish Camel, New Paradigms
- …knowing tools gives us orientation/navigation>

CompGeom - 3 Ways to Explain

Output:

F, E, V

F, E

F, V

E, V

E

V

Data structure: Convex hulls

Voronoi diagrams

Delaunay triangulation

Cellular decomposition

Visibility graphs

Others
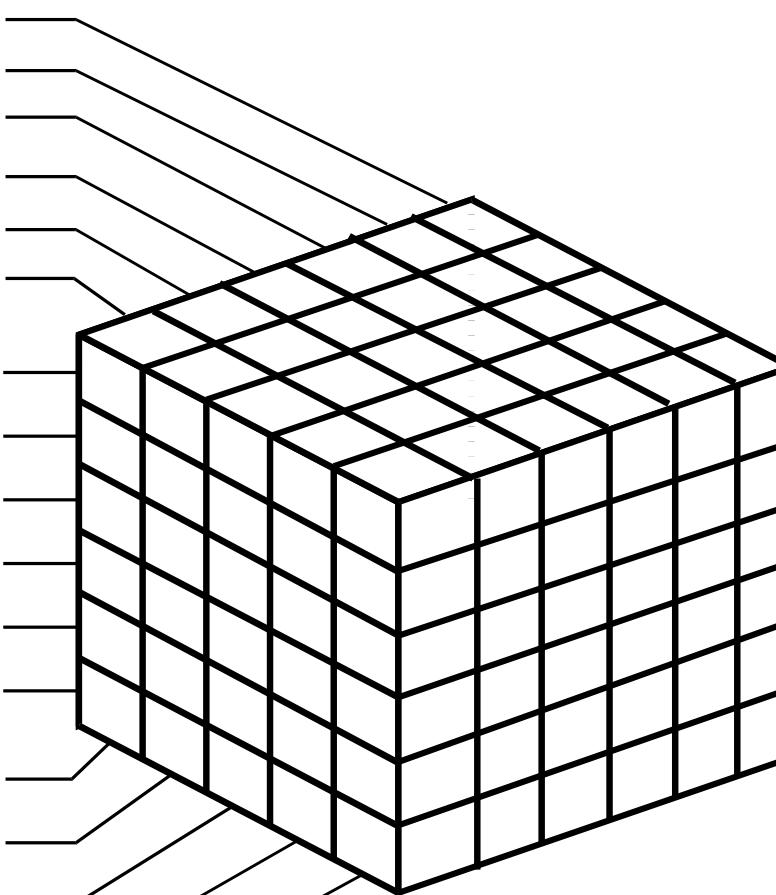
Strategy: Iteration

Divide and conquer

Sweeping

Prune and search

Locus approach

[McGregor-Smith, 1996]

ComputerGraphics
FOR THE MEDIA INDUSTRY

Creativity Rules

- "Creativity cannot be taught"… How to teach it?
- Scherhaufer ~ 75 methods
- Convergent, divergent
- Conceptual blockbusting
- Brainstorming assumptions and modes
- Unlimited budget, time, team, at least one woman, blackboard, no criticism, even nonverbal, write/sketch each idea, provoke jokes, nonsense, openmindedness…

Conceptual Blockbusting

- Block… remove obstacles of creation (Jim Adams)
- Conceptualization is the process by which one has ideas in design and open-ended problem solving
- Conceptual blocks are mental walls that block the problem solver from correctly perceiving a problem or conceiving its solution
- Everybody can be creative
- Everybody has some conceptual blocks limiting creativity

Conceptual Blocks (Jim Adams)

- Conceptual blocks are a kind of mental inflexibility
- Seeing what you expect to see; stereotyping
- Difficulty isolating the problem
- Tendency to delimit the problem too closely
- Inability to see the problem from various viewpoints
- Saturation
- Failure to utilize sensory inputs (graphical and physical media)

Perceptual Blocks (Jim Adams)

- Perceptual blocks are obstacles that prevent the problem-solver from clearly perceiving either the problem itself or the information needed to solve the problem

- Seeing what you expect to see; stereotyped seeing; premature labeling

- Inability to view problem from various viewpoints

- Saturation

- Difficulty in isolating the problem

- Tendency to delimit the problem area too closely

Perceptual Stereotyping (Jim Adams)

- Perceptual stereotyping is part of the explanation for the success of various types of optical trickery. It is not all bad, as it allows people to complete incomplete data. However, it can be a handicap in perceiving new combinations.

- Emotional Blocks (Jim Adams)

- Fear to make a mistake, to fail, to risk

- Excessive zeal; over motivation to succeed quickly; can only see one direction to go (ours)

- Inability to tolerate ambiguity; overriding desire for security, order, no appetite for chaos

- Difficulty in isolating the problem

- Cannot relax, incubate, "sleep on it"

Cultural Blocks (Jim Adams)

- Cultural blocks are acquired by exposure to a set of cultural patterns. Sometimes they get codified into law, and are not challenged as society changes.

- Taboos

- Fantasy and reflection are waste of time, lazy, even crazy

- Playfulness is for children only

- Reason, logic, number, utility, practicality are good; feeling, intuition, qualitative judgments, pleasure are bad.

Environmental & Organizational

- Environmental and Organizational Blocks (Jim Adams)
- Distractions -- phone, easy intrusions
- Lack of support to bring ideas into action
- Lack of cooperation and trust among colleagues -- insecurity in job
- Autocratic boss who only values his own ideas; does not reward others
- Inhibiting organizational management styles

Intellectual and Expressive

- Intellectual and Expressive Blocks (Jim Adams)
- Lack of information; incorrect information
- Inflexible or inadequate use of intellectual problem-solving strategies
- Formulating problem in incorrect language (e.g., verbal, math, visual)
- Inadequate language skill to express ideas

Mental Skashi by AF

- Skashi = nonspecific technique in judo
- Use the action of Tori to exchange roles
- Uke profits from disadvantage >> ipon win
- Mental skashi here and now:
- Use all blocks above as possible obstacles in your story for protagonist or antagonist or both
- Skashi in judo is highly evaluated as creative contribution to judo itself

Overcoming Blocks

- There are many tools for overcoming conceptual blocks. The following approach to creativity comes from a book called ThinkerToys.
- Substitute
- Combine
- Adapt
- Modify or magnify
- Put to other uses
- Eliminate or minify
- Reverse or rearrange

Substitute

- What can be substituted? Who else? What else?
- Can the rules be changed?
- Other ingredient? Other material?
- Other process or procedure?
- Other power?
- Other place?
- Other approach?
- What else instead?
- …

Combine

- Can we combine purposes?
- How about an assortment?
- How about a blend? An alloy?
- Combine units?
- What other article could be merged with this?
- Combine appeals?
- ...

Adapt

- What else is like this?
- What other idea does this suggest?
- Does the past offer a parallel?
- What could I copy?
- Whom could I emulate?
- What idea could I incorporate?
- What other process could be adapted?
- …

Magnify

- What can be magnified, made larger, or extended?
- What can be exaggerated? Overstated?
- What can be added? More time? Stronger? Higher?
- How about greater frequency? Extra features?
- What can add extra value?
- What can be duplicated?
- How could I carry it to a dramatic extreme?
- …

Modify

- How can this be altered for the better?

- What can be modified?

- Is there a new twist?

- Change meaning, color, motion, sound, odor, form, shape?

- Change name?

- What changes can be made in the plans? In the process? In the marketing?

- …

Put to other uses

- What else can this be used for?
- Are there new ways to use as is?
- Other uses if modified?
- What else could be made form this?
- Other extensions? Other markets?
- …

Eliminate or Minify

- What if this were smaller?
- What should I omit?
- Should I divide it? Split it up? Separate it into different parts?
- Understate?
- Streamline? Make miniature? Condense? Compact?
- Subtract? Delete?
- Can the rules be eliminated?
- What's not necessary?
- …

computerGraphics
FOR THE MEDIA INDUSTRY

Rearrange

- What other arrangements might be better?
- Interchange components?
- Other pattern? Other layout?
- Other sequence? Change the order?
- Transpose cause and effect?
- Change pace or schedule?
- …

Reverse

- Can I transpose positive and negative?
- What are the opposites?
- What are the negatives?
- Should I turn it around? Up instead of down?
- Consider it backwards?
- Reverse roles?
- Do the unexpected?
- …

Conceptual Blockbusting++

- What would be the relative advantages and disadvantages of involving actual customers in the concept generation process?

- For what types of products would the initial focus of the concept generation activity be on the form and user interface of the product and not on the core technology?

- CB References & Further Reading

- Michael Michalko Thinkertoys: A Handbook of Business Creativity for the 90s

- James L. Adams Conceptual Blockbusting

Uncertainty

- Not welcome in science and technology
- Sometimes welcome in art and humor
- Five mathematic theories of uncertainty: classical set t., fuzzy set t., probability t., possibility t., evidence theory (Haluska 2004, p. 24n)
- 3 types: fuzziness, nonspecificity, strife
- Ambiguity = nonspecificity + strife
- Fuzziness, e.g. harmony-melody uncertainty

Uncertainty Types (Haluska 2004, p. 24n)

- Fuzziness = lack of definite or sharp distinction, vagueness, haziness, cloudiness, uncleaness, indistinctness, sharplessness, imprecise set boundaries, e.g. "psychological phenomenon" in tone systems theory

- Nonspecificity = disagreement in choosing among several possible alternatives, principal imprecision, e.g. "physical phenomenon" using different frequency values for the same note depending on the harmonic context/fashion: a1 different in Vienna/Paris, today standard tuning 440 Hz

  (varying historically from 405 to 456 after [Geist 2005, p. 138])

- Strife = conflicts among the various sets of alternatives, variety, discord, generality, diversity, equivocation, e.g. "musically-cultural phenomenon" with Indian ragas

Mental Skashi 2

- Skashi = nonspecific technique in judo
- Use the action of Tori to exchange roles
- Uke profits from disadvantage >> ipon win
- Mental skashi here and now:
- Use all uncertainty types above as possible obstacles in your story for protagonist or antagonist or both
- (Experi)mental exercise: do it right now

(Experi)mental Exercise

- Fill in the uncertainty within Your demo reel – and overcome

- A
- B
- C
- D
- E

- Let us show the solution

Conclusion in Part

- The first ~100 slides over

- Conclusion – the easiest way of storytelling is backtelling and the easiest way of directing is kabuki. The hardest ones are drama & holistic

- Recall that today is the Story Day…

- but we had to spend time with above preliminaries

- We deserve a special break, e.g.

- Demo Gallery of Ambiguities or Cliffhanger video

References 2

[Aris01] ARISTOTELES. 1944. *Poetika*. Slovak translation. Martin: Matica slovenská 2006.

[Bern01] BERNERS-LEE, T. *et al.* 2001. *The Semantic Web*. Scientific American. [online] At http://www.sciam.com/article.cfm?articleID=00048144-10D2-1C70-84A9809EC588EF21, May 2001. (October 8, 2008.)

[Boro08] BOROVSKÝ, P. – SAMUELČÍK, M. - NOVOTNÝ, M. – STANEK, S. — LACKO, J. – FERKO, A. 2008. 3D Multimedia Historic Bratislava. *CORP 2008: Urban Planning and Regional Development in the Information Society.* Schwechat-Rannersdorf: Competence Center of Urban and Regional Planning, 2008. - ISBN 978-39502139-5-9. - pp. 525-530.

[Came07] CAMERON, F. – KENDERDINE, S. eds. 2007. *Theorizing Digital Cultural Heritage.* ISBN 0-262-03353-4. Cambridge: MIT Press 2007.

[Geis05] GEIST, B. 2005. *Akustika.* ISBN 80-86253-31-7. Praha: Muzikus 2005.

[Halu04] HALUSKA, J. 2004. *The Mathematical Theory of Tone Systems.* ISBN 0-8247-4714-3. New York: Marcel Dekker 2004.

[PMZA08] *Virtual Museum Portal of Považské múzeum Zilina.* [online] At www.pmza.sk (October 8, 2008.)

[Sche01] QVORTRUP, L. *ed.* 2001. *Virtual Interaction: Interaction in Virtual Inhabited 3D Worlds.* ISBN 1-85233-331-6. London: Springer 2001.

[Qvor02] QVORTRUP, L. *ed.* 2002. *Virtual Space: Spatiality in Virtual Inhabited 3D Worlds.* ISBN 1-85233-516-5. London: Springer 2002.

Story Units

• The hottest paper on storytelling, author's manuscript downloadable from journal page,

•MURTAGH, F. - GANZ, A. – MCKIE, S. 2008. The structure of narrative: The case of film scripts. *Pattern Recognition* (2008), doi:10.1016/j.patcog.2008.05.026

•W.L. Chafe, The flow of thought and the flow of language, In Syntax and Semantics: Discourse and Syntax, ed. by Talmy Giv´on, vol. 12, 159–181, Academic Press, 1979.

• Chafe, quoted by Murtagh at page 28, in analyzing verbalized memory, used a 7-minute 16 mm color movie, with sound but no language, and collected narrative reminiscences of it from human subjects, 60 of whom were English-speaking and at least 20 spoke/wrote one of nine other languages. Chafe considered the following units.

Story Units in Memory

1. *Memory* expressed by a *story* (memory takes the form of an "island"; it is "highly selective"; it is a "disjointed chunk"; but it is not a book, nor a chapter, nor a continuous record, nor a stream).

2. *Episode*, expressed by a *paragraph*.

3. *Thought*, expressed by a *sentence*.

4. A *focus*, expressed by a *phrase* (often these phrases are linguistic "clauses").

Foci are "in a sense, the basic units of memory in that they represent the amount of information to which a person can devote his central attention at any one time".

Linear examples, non/theory

• Thousands of linear stories in scripts, for all genres, available and openly accessible, e.g. movies (Matrix, Being there…) and TV scripts (CSI Las Vegas):

• IMSDb, The Internet Movie Script Database, www.imsdb.com

• TWIZ TV (Free TV Scripts & Movie Screenplays Archives) http://twiztv.com

• Nonlinear stories for games etc. explored in

GLASSNER, A. *Interactive Storytelling.* A.K. Peters, 2004.

RIEDL, M.O. - YOUNG, R.M. 2006. From linear story generation to branching story graphs. *IEEE Computer Graphics and Applications* 26, 23–31, 2006.

computerGraphics
FOR THE MEDIA INDUSTRY

Directing and Storytelling

This core module will enable students to write, design, storyboard and direct an animated feature. The module will comprise of six main elements:

- Drawing
- Narrative
- Technical feasibility assessment
- Storyboarding
- Presentation
- Directing

Goal

- Orientation – where we are in our creation?
- Navigation – what are our possibilities?
- Cooperation – how will we complete the success story of our story?

- Key problem: art vs. technology
- Easy solution: kabuki, hard: holistic directing
- Genius vs. craftsman

Overview

- Author… understanding: memory, (hi)story, perception, game, interaction, virtual cooperation, even human system of values

- Story construction, authoring tools, story analyzing and editing,

- Legal aspects, intellectual property, coauthoring

- Future ~ games, movies, interactive video and storytelling

- DIRECTING… virtual museum

Understanding Memory

- Marshal McLuhan on media theory and Alwin Toffler on the Third Wave
- Oral tradition, Guttenberg and the book, metaphors of memory by Douwe Draaisma
- Story and storytelling. Myth, fairy tale, science fiction – three tenses in a story.
- Fabula and sujet.
- Propp functions and morphology of a fairy tale or James Bond films.
- Digital storytelling by Inscape. Linear and nonlinear stories by Qvortrup.

Understanding (hi)story

- Energy of mistake by Viktor Sklovsky
- Novel as a dialogue by Mikhail Bakhtin
- Structure of a comic creation
- Four levels of reading
- Classic drama theory by Aristotle
- Humor theories – Freud, Bergson, Marvin Minsky, Umberto Eco et al.
- Semiotics of a musical show by Ivo Osolsobe
- Storytelling genres – joke,short story,novel,comedy, drama, computer game, & interactive stories

Understanding visual perception

- Script development. The role of a title
- Logo design by Andrew Glassner
- Idea, message, treatment, and script development
- Pitching. Creative writing and scientific communication.
- Web page as a theatre performance. Static and dynamic directing the eye trajectory. Visually critiquing web pages.

Understanding audio perception

- Sound spaces
- Listening to Geri's Game
- Stereo in radio play
- 3D sound in VRML
- Sonification
-

On computer animation

- Computer animation history
- Authoring tools
- Recommendations by Walt Disney and John Lasetter
- Shrek – the story behind the screen
-

Understanding game

- Homo ludens by Huizinga.
- Computer games history.
- Ontology of game by Herakleitos, Buytendijk, and Fink
- The psychology of play by Susann Millar
- Typology of computer games.
- Immersion, presence, and virtual reality
- Four fears from virtual reality
- Philosophic analysis of Matrix movie.

Understanding interaction

- Linear story and interaction
- Temporal logic
- Non-linear time
- Story spaces by Glassner

Understand? virtual cooperation

- This seems to be very hard – in progress
- Mobile games by Processing
- Virtual populations and cooperation in virtual habitat by Qvortrup
- Linear parts of a nonlinear story
- CPL initiative and storytelling in CPL recognized games like Counterstrike in more detail.

computerGraphics
FOR THE MEDIA INDUSTRY

Story construction aspects

- Script and storyboard
- Creatology – two models (Pushkin, Koestler) and selected methods
- The rules of a brainstorming
- Life cycle of a digital story
- Censorship, pornography, and blasphemy
- Freedom of expression in virtual reality

computerGraphics
FOR THE MEDIA INDUSTRY

Authoring tools

- Preproduction,
- production,
- and postproduction of a movie
- Advertisment and promotion
- Medialising a story
- Remake

Analysing stories/editing script

- Narrative limitations because of budget shortage
- Timing of a scene
- Conscious mastering a role by Stanislavsky
- Verfremdungsefekt by Bertolt Brecht
- Film cut by Sergei Eisenstein
- Film poetics and semiotics – Grammar of the Film Language by Daniel Arijon 1976, 28 chapters
- Implication for computer games – make them more cinematographic
- Remaking story. The example – Ice Age.

Analyzing games and movies

- How to discuss the value, meaning, or sense of a digital story

- The role of digital storytelling in Semantic Web (w3c) and knowledge-based society and other open problems

- Watching the Semantic Web story

computerGraphics
FOR THE MEDIA INDUSTRY

Evaluating/discussing digistories

- How to measure quality? Blue ocean…

- Co-authoring stories

- Our common story?

- Inscape community and repository – www.inscapers.com

Selected aspects of storytelling

- Legal aspects of storytelling
- Intellectual rights
- Licence contract
- Story as a media market product – another story
- Interactive storytelling future by Glassner and Crawford.

Selected references

- [Craw05] CRAWFORD, C. 2005. On Interactive Storytelling. ISBN 0-321-27890-9. Berkeley: New Riders 2005.

- [Glas98] GLASSNER, A. et al. 1998. Art for Computer Graphicists http://www.siggraph.org/education/materials/siggraph_courses/S98/30/c30.pdf

- [Glas04] GLASSNER, A. 2004. Interactive Storytelling. ISBN 1-56881-221-3. Natick: AK Peters 2004.

- [Insc07] Inscape community and repository – www.inscapers.com.

- [Toff95] TOFFLER, A. - TOFFLER, H. Creating a New Civilization. Atlanta: Turner Publishing 1995.

Authoring tools

- Preproduction,
- production,
- and postproduction of a movie
- Advertisment and promotion
- Medialising a story
- Remake

Authoring tools: INSCAPE

- http://www.inscapers.com/downloads_research_papers.html

- **State-of-the-art on Interactive Storytelling**
- **Applying Narrative Theory to The Process of Authoring Interactive Storytelling**
- **Storytelling and Interactivity in Videogames - from Myst to Ico**
- **New Narrative Techniques for Persistent Storytelling Experiences**
- **Sound and Interactive Narrative**
- **Immersion and Presence in Storytelling Digital Environments**
- **Multimodal Interaction for Interactive Storytelling**
- **Story Representation, Storage and Processing**
- **Interactive Authoring of Interactive Stories**
- **Character Animation in Interactive Storytelling**
- **3D Rendering and Special Effects for Interactive Storytelling**
- **Intelligent Virtual Agent Systems for Interactive Stories**
- **Runtime Environments for Interactive Stories**
- **2D Rendering of Stories**
- **Scope of an Ontology-based Database**
- **Tangible Interfaces for Interactive Storytelling**

Vanja, Dzejla, Edin

- Name, author, version, place and date
- Lexical reading – enrich Your vocabulary, especially to be, is, are, was, were >> verbs
- Avoid noise, Martin/Marvin, dinner/lunch, bad
- Unify storyteller - me, we, it, you
- Syntactic, semantic, anagogic readings

Conflict

- **What is the driving force/conflict?**
- **Vanja**
- **alienation, human becomes a sellable product, crisis of identity**
- **Dzejla**
- **dramatic triangle, she, he, and hard testing of their love**
- **Edin man versus nature**

How to lock the conflict?

- ## Vanja

- **e.g. the protagonist performs his TV show and the show is interrupted by a message that he is the winner in World Nose Beauty competition. People start to see his nose only. By chance, the guest in his show is the winner of World Breast/Tits and from her already only this part of her whole is visible. He speaks with her tits only and her tits speak for her. The rest of her body is nearly invisible/transparent. His nose isolates from him and travels to billboards…**

How to lock the conflict?

- **Dzejla**

- **e.g. A young hooligan is punished to death, because he kissed a married woman. She and he enjoy a kiss, which is not that expensive.**

- **SARAJEVO 1888, April 1, 14.37**

How to lock the conflict?

- **Edin**

- **e.g. The last sequence is shown backwards – planet becoming gray and there is only one green dot and some robotic hand crosses it at the screen with a red deletion symbol. The green dot expands to the very last tree. At the street there are children walking, human hands in robotic hands …**

Festa, Ammar, Dzejla

- Title, author, version, place, date, contact
- Avoid past tense, apply good practice
- Exclude noise, spell checking, readability
- Syntactic, semantic, anagogic readings
- Symbolic out, use visual, audio channels
- AH, AHA, HAHA, and HM testing

Conflict

- **What is the driving force/conflict?**
- **Festa**
- **Things go wrong**
- **Ammar egoism**
- **Dzejla**
- **Loneliness**

How to lock the conflict?

- Festa, e.g. tree falling down noisy at the little girl
- Ammar, e.g. chicken falling down
- Djejla, e.g. honey through glass, flower locked in a glass box fixed by chain to his hand, she cannot smell the flower…
- e.g. protagonist is madly running in the labyrinth, i.e. gallery of images with the Chameleon girl, but each of them disappears, so that neither he nor the audience cannot fix/recognize her face, see Fractal gallery by Paul Bourke

Two exercises, too early ones

- **Do you use properly symbolic, video and audio channels?**

- **Use boldface for V, underlined for S, and italics for A. Read only S, V, A layers. Exclude S and try to rewrite all only to AV channels.**

- **Indicate within Your text expected AH, AHA, and HAHA reactions. Develop the remaining text pieces to the closest AH, AHA, and HAHA, or – eventually – HM…**

ARISTA 11 Questions

- ARISTA Development Skills, workshop in Bratislava 2005, Questions by Stephen Cleary, UK
- **Questions To Ask Oneself When Reading a Script**
1. **Do I know the purpose of the writer?**
2. **Do I understand the writer?**
3. **Does the story work in its' own terms?**
4. **What has to happen to help things get better?**
5. **What do I have to do to create the right relationships to enable the writer to get a better story in it's own terms?**
6. **What is the audience for this story?**
7. **Is there conflict in the story and is that conflict understandable?**
8. **Do we have emotions in the script?**
9. **Is everything clear?**
10. **Is there a character with whom we can identify?**
11. **Is there an evolution from one scene to another? Is there causality?**

Safe Way from Back-telling to Fairy Tale

- **Back-telling deals with any events, folktales only with Propp's Functions** *Morfologia skazki (in Russian), Moskva 1929, 1967?*

- - *initial situation*; it is not a function (alpha)

- I. **absentation**: a family member absents him/herself from home (beta)

- II. **interdiction**: an interdiction is addressed to hero (gamma)

- III. **violation**: interdiction is violated (delta); a paired element

- *www.uncc.edu/~rrussi/courses/old%20syllabi/LBST/folk%20extra%20info/proppfunctions.htm*

Propp's Functions

- IV. **reconnaissance**: villain makes an attempt at reconnaissance (epsilon)
- V. **delivery**: villain receives information about his victim (zeta); a paired function
- VI. **trickery**: villain attempts to deceive his victim in order to take possession of him or his belongings (eta) [at this point the villain may assume a disguise]
- VII. **complicity**: victim submits to deception and thereby unwittingly helps his enemy (theta); subfunction: *preliminary misfortune* (lamda) wherein villain deliberately causes the difficult situation
- VIII. **villainy**: villain causes harm or injury to a family member (A); crucial function by means of which the actual movement of the tale is created; the *complication* is begun by an act of **villainy**
- VIIIa. **lack**: one member of a family either lacks something or desires to have something (a)
- IX. **mediation**, **the connective incident**: misfortune or lack is made known; hero is approached with a request or command; he is allowed to go or he is dispatched (B)

Propp's Functions 10…

- X. **beginning counteraction**: seeker agrees to or decides upon counteraction (C)
- XI. **departure**: hero leaves home (arrow/up)
- XII. **the first function of the donor**: hero is tested, interrogated, attacked, etc., which prepares the way for his/her receiving either a magical agent or helper (D)
- XIII. **the hero's reaction**: hero reacts to the actions of future donor (E)
- XIV. **provision or receipt of a magical agent**: hero acquires the use of magical agent (F)
- XV. **spatial transference between two kingdoms, guidance**: hero is transferred, delivered, or led to the whereabouts of an object of search (G)
- XVI. **struggle**: hero and villain join in direct combat (H)
- XVII. **branding**, **marking**: hero is branded (J)
- XVIII. **victory**: villain is defeated (I)
- XIX. **liquidation of misfortune or lack**: the initial misfortune or lack is liquidated (K); this function, together with **villainy** (A), constitutes a pair: the narrative reaches its peak here
- XX. **return**: hero returns (arrow/down)
- XXI. **pursuit**, **chase**: hero is pursued (Pr)

Propp's Functions 22…

- XXII. **rescue**: rescue of hero from pursuit (Rs)
- XXIII. **unrecognized arrival**: hero, unrecognized, arrives home, or in another country (o)
- XXIV. **unfounded claims**: a false hero presents unfounded claims (L)
- XXV. **difficult task**: a difficult task is proposed to hero (M); one of the tale's favorite elements
- XXVI. **solution**: the task is resolved (N)
- XXVII. **recognition**: hero is recognized (Q); complements function XVII
- XXVIII. **exposure**: false hero or villain is exposed (Ex)
- XXIX. **transfiguration**: hero is given a new appearance (T)
- XXX. **punishment**: villain is punished (U)
- XXXI. **wedding**: hero is married and ascends the throne (W)

Grouping Events

- functions 1-7 = preparation
- functions 8-10 = complication
- functions 11-15 = transference
- functions 16-18 = struggle
- functions 19-26 = return
- functions 27-31 = recognition
- *www.uncc.edu/~rrussi/courses/old%20syllabi/LBST/folk%20extra%20info/proppfunctions.htm*
- *Original book by Vladimir PROPP: Morfologia skazki (in Russian), Moskva 1929, 1967?*

Further work

- *www.uncc.edu/~rrussi/courses/old%20syllabi/LBST/folk%20extra%20info/proppfunctions.htm*
- **Original book by Vladimir PROPP: Morfologia skazki (in Russian), Moskva 1929, 1967?**
- **Any permutation of the above situations (discovered by Propp while analyzing Russian folktales) should give a well-working story.**
- **Roughly speaking, the Preparation, Complication… Recognition is an approximate mapping (provided at the above web page) to the drama structure theory by Aristotle. The key of drama is <u>anagnoresis</u> (AHA, recognition of conflict solution, new knowledge).**
- **Your stories can restrict themselves only to this: e.g. tell the story in one way communication/monologue (movie, animation) or dialogue (applet, game). Upload the creation (or progress report) to Your webpage/YouTube and send me an e-mail.**
- **I will distribute this to all classmates, eventually with another hints for discussion or inspiration. Best wishes.**

computerGraphics
FOR THE MEDIA INDUSTRY

Medium

- Seven variables (Qvortrup 2001, p. 283):
- Matter (the physicality of media), space, time & symbolic format – needed for story construction
- Areas: production, distribution, consumption
- Interactivity, computer as medium for narratives
- Game ~ fairy tale with interaction

Content

- Bit ~ binary digit
- 0..9 ten decadic digits ~ encoding in 4 bits
- 0000, 0001 .. 1001, (1010 .. 1111 unused)
- Rosetta idea (bits >> glyphs)
- 7-segment display, ASCII, IS 2022 .. VRML
- Unstructured formats ~ raw, jpg, mp3, video…
- "Thank you for you know whom for you know what"
- Content interpreted with context
- WWW .. WWD: Europeana, Classical Archives…

Die Schrift, typoi

- Written signs mean originally traces/footprints (typoi)   (Flusser, Die Schrift, p. 9 SK)
- Typeface, characters, script
- Scribere, inform, shaping ~ sculpting the clay
- Scribere, graphein, using stylus
- Teracota (fixing clay) tables, stylus, metaphors of memory – sand, wax table, …

Words

- Words are a means or a medium for getting at the substance and energy of a story (p. 179, [15]). Ultimately sets of phrases express such underlying issues (the "subtext", as expressed by McKee, a term we avoid due to possible confusion with subsets of text) as conflict or emotional connotation (p. 258).

computerGraphics
FOR THE MEDIA INDUSTRY

Words Not Taken Literally

- We have already noted that change and evolution is inherent to a plot. Human emotion is based on particular transitions. So this establishes well the possibility that words and phrases are <u>not taken literally</u> but instead can appropriately capture and represent such transition. Text, says McKee, is the "sensory surface" of a work of art (counterposing it to the subtext, or underlying emotion or perception).

- Simple words can express complex underlying reality. Aristotle, for example, used words in common usage to express technically loaded concepts ([18], p.169), and Freud did also.

Best Practice in Film Script Writing

- Murtagh quotes McKee, p. 395: Present tense dominates all, "The ontology of the screen is *an absolute present tense in constant vivid movement*" (emphasis in original). Clipped diction is needed. Generic nouns are avoided in favor of specific terms, and similarly adjectives and adverbs are to be avoided. The verb "to be" is to be avoided because: "Onscreen nothing is in a state of being; story life is an unending flux of change, of becoming" (p. 396). Simile and metaphor are out, as is any explicit positioning of context on behalf of the reader of the script or viewer of the film.

Text = Layer with layers

- Four layers of reading: lexically, syntactically, semantically, anagogically
- Wrong example: waiting in a hospital, I had to listen to an Asian girl, giving a call with her cell/handy, using an unknown language
- Understanding failed, no words, no sentences, no meanings, nothing transcendent, just raw bits
- But, I communicated iconic sound and even a bla-bla parody of her speech by a surpassing guy, I had no clue at symbolic level (semiotic notions later)
- BTW Glassner introduced depth of immersion ~ bits, words, syntax, meaning, transcendence (Glassner: curiosity, sympathy, identification, empathy & transportation)

computerGraphics
FOR THE MEDIA INDUSTRY
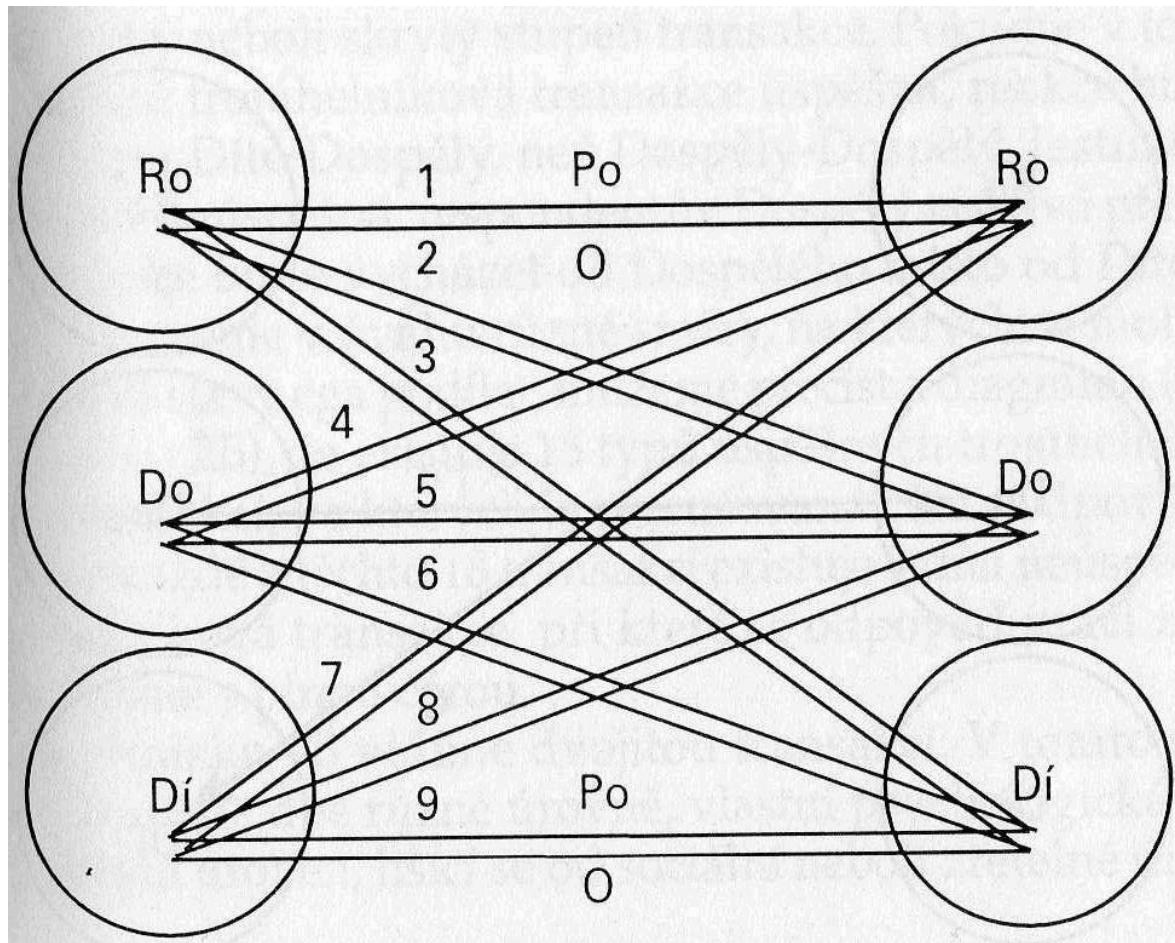
Words >> Internet

- Writing for web – Nielsen 2009

- Five planes – Garret 2001

Sentence, clause

- In music Movement, in math Theorem
- What is a good line?
- .!? (? Works well for anchoring the attention)
- What is a suitable ordering?
- Characters ~ different ways of thinking
- Dialogue ~ layers
- What is the time? Why do you accuse me? (Berne, p. 23 in What do you say after you say hello? CZ)

Personalities Inside

Beat

- McKee ~ change
- Beat in music means the heavier of the tones within the given bar
- Beat is unit of action or behavior by McKee
- Correspondence with focus in terms of memory

Scene

- Originally the stage in ancient Greek theatre
- Before even the space behind the stage for preparing actors
- Today – a part of a story, in SK a part of family life (quarrel)

Sequence

- Sequence of frames
- Any part of a story in animation

Act

- Sequence of scenes
- Classical drama 3 acts
- Syd Field is masking three-act structure with turning points – four acts

Plot

- The ordering and selection of scenes to tell a story and affect an audience

- Ordering example by Ira Blacker, Elements of Screenwriting, giving different stories

- He is accused as killer of his ex-girlfriend but she follows him for a trip to Bahamas, where she realizes that he is guilty

- She knows he is a killer, but she goes Bahamas

Story

- Definition (Glassner, p. 36, missing in INSCAPE materials) A story follows an interesting protagonist seeking a clear goal by addressing an ever-escalating set of difficulties.
- 3 criteria: protagonist, goal, challenges
- Structure – external, internal
- Words, sound, images and acts, scenes, and chapters

Invisible Story Parts

- Writer's outlines and notes
- Maps
- Character biographies
- ~ equivalent of blueprints and engineering reviews
- AF statue analogy like in music composition
- Most films and novels are DESIGNED
- Art is not engineering (E.A.Poe: Raven)

Character

- The particulars that bring individuals to life within the contex of the plot (Blacker 1986)

Conflict

- The driving factor (Blacker 1986)

Crisis

- The point at which the story can go in one direction or another (Blacker 1986)

Climax

- The most important crisis (Blacker 1986)

Exposition
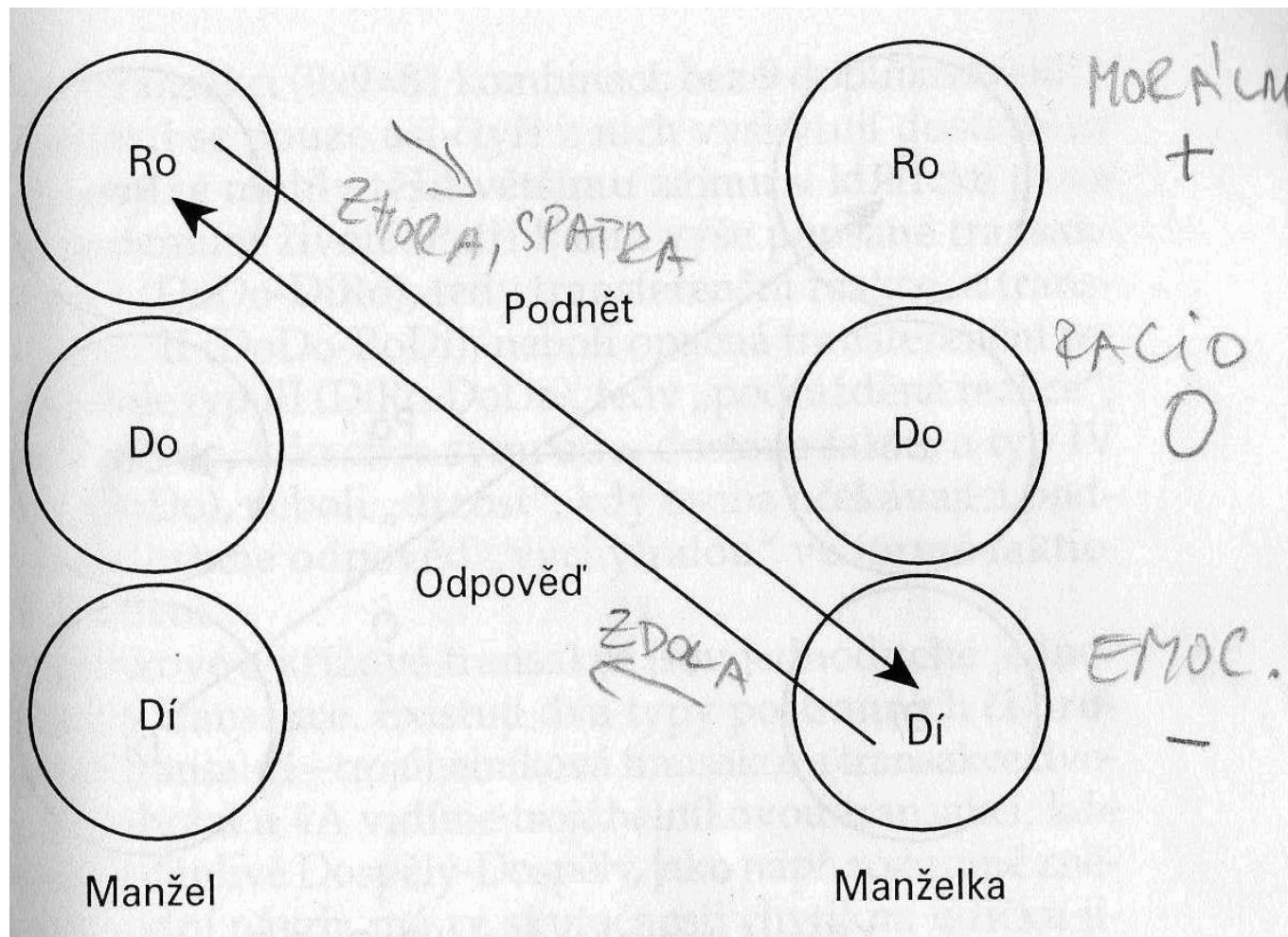
- What a viewer must know, and when (Blacker 1986)

Dialogue

- Four basic functions (Blacker 1986):
- To move the storyline forward
- To reveal aspects of character not otherwise seen
- To present exposition and particulars of past events
- To set tone for the film

Personalities Inside
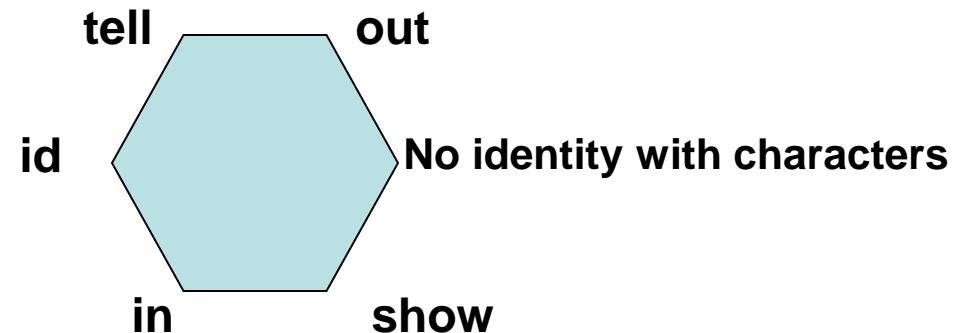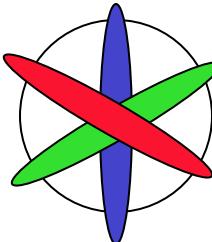
Story Paradigms

- Aristotle
- Propp
- Campbell
- Field
- McKee
- …

Voice

- Three constitutional components of typical narrative/storytelling situation:

- Modus: Who tells the story? tell.. show, no speaker in drama

- Person: Where in the story is the storyteller? identity

- Perspective: How a reader perceives the reality displayed?

-

-
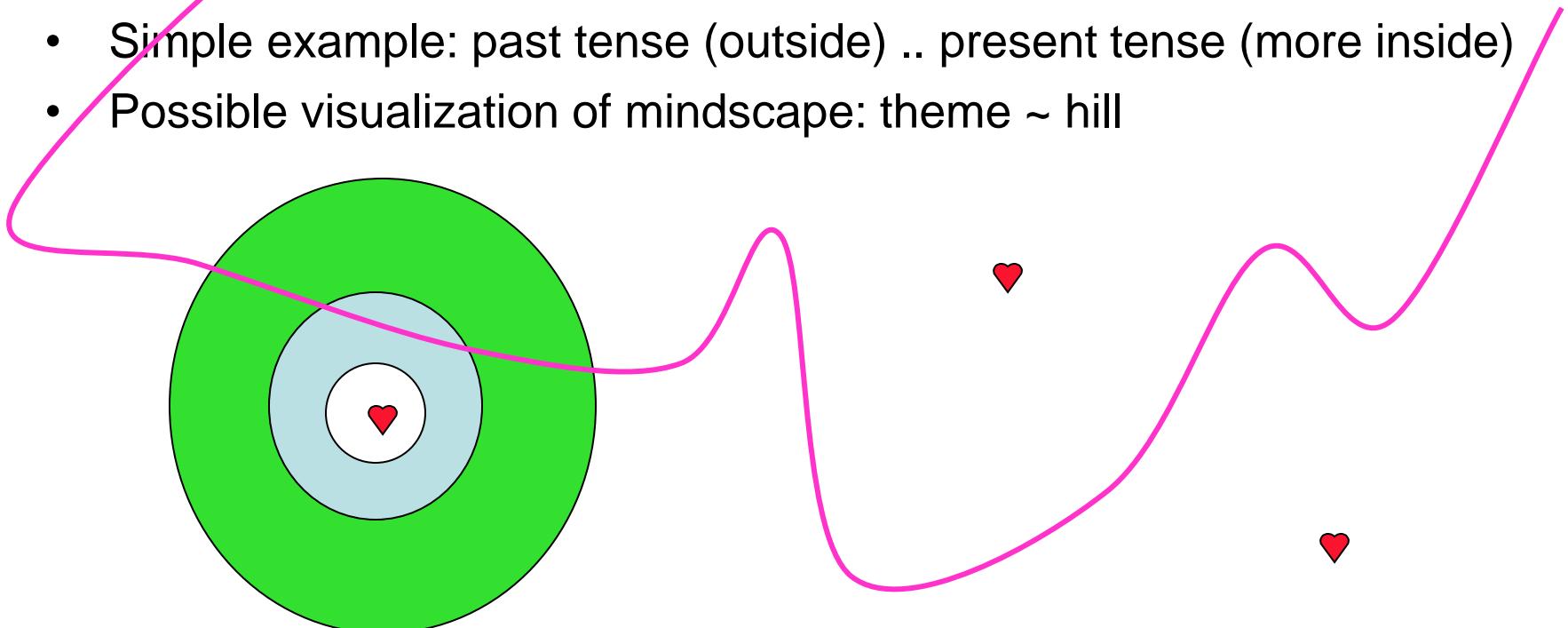
- STANZEL, A. 1988. **Theory of storytelling.** (German original Theorie des Erzählens, Gottingen 1979.) Praha: Odeon 1988.

tell   out

id   No identity with characters

in   show

Voice Examples

- Modus: Who tells the story? tell.. show, no speaker in drama
- I, we, you.. watch this
- Person: Where in the story is the storyteller?
- Identity of existential areas: Narrator .. Reflector
- Reflector is a character sharing values with author
- Perspective: How a reader perceives the reality displayed?
- Past tense (outside) .. Present tense (inside)

- STANZEL, A. 1988. *Theory of storytelling.* P. 64n

Perspective ~ Immersion

- Perspective: How a reader perceives the reality displayed?

- Simple example: past tense (outside) .. present tense (more inside)

- Possible visualization of mindscape: theme ~ hill

- theme, author, actor, audience

- Idea: bissociation ~ putting together STANZEL & GLASSNER

INSCAPE on McKee

- ## 2.2.5 Robert McKee

- McKee's 'Story' is the best known of a large number of books that aims to elucidate the secret of success in creating a Hollywood blockbuster script. His theory is based on the analysis of a large number of successful films, focusing on their essential structural similarities. He then presents a model that should work just as well for a romantic comedy as an action movie, by introducing plot twists and climaxes at particular junctures within the narrative. Like Iser, it depends on the author having a clear knowledge of the audience at whom the story is aimed.

- ## The theory and techniques described in this book are specifically geared towards writing a film script.

- Although some writers credit their success to it (e.g. John Cleese writing A Fish called Wanda), it more often produces a predictable and dull script. But more importantly, it describes a method which depends on the author of the narrative being in complete control, anticipating the audience's response at every juncture. It is difficult to see how this could be translated into an interactive authoring

Sarajevo ASU Filmmakers

- Syd Field
- About 400 universities... Structuring drama
- E.g. Creating Character, p. 37 in CZ
- Internal life – before, character forming
- External life – during the movie, reveal the character
- Know Your dramatic characters!

Huntley on Paradigms

- Strong criticism
- Dramatica.com – authoring software tool
- Story defined as an analogy to a human mind trying to resolve an inequity
- Overal story goal is to find the Holy Grail, protagonist, antagonist, impact character, like dr. Watson
- Four perspectives – Main Character (I), Main Character Throughline, the Impact CharacterThroughline, MC/IC Throughline
- Background theories – Aristotle, Propp, Campbell

Crawford on Huntley

- Crawford on Huntley, p. 339
- Dictionary of terms is 57 pages long
- Four classes, physics, universe, psychology, mind
- Mind subdivided into memory, conscious, preconscious, subconscious
- Memory subdivided into truth, evidence, suspicion, falsehood... 4 by 4 by 4 by 4...
- Offering many revealing points to refine existing scripts
- Not computerized enough for interactive storytelling engine

Nielsen on Web Writing

- Usability

- www.useit.com

JJ Garett Five Planes
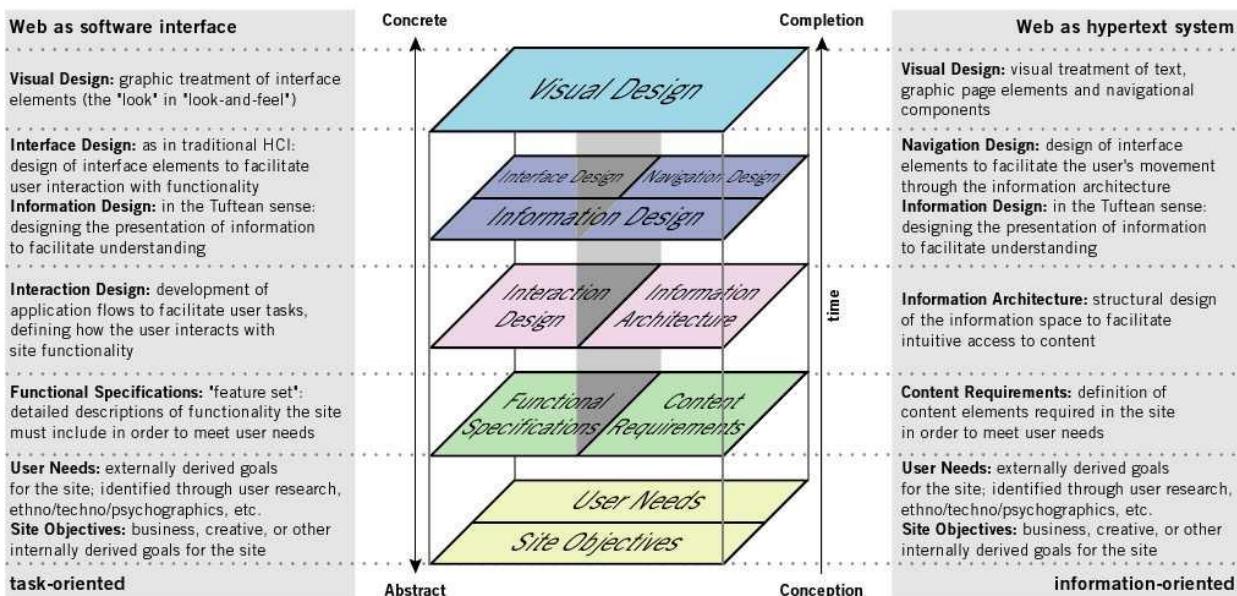
The Elements of User Experience

Jesse James Garrett
jjg@jjg.net

A basic duality: The Web was originally conceived as a hypertextual information space; but the development of increasingly sophisticated front- and back-end technologies has fostered its use as a remote software interface. This dual nature has led to much confusion, as user experience practitioners have attempted to adapt their terminology to cases beyond the scope of its original application. The goal of this document is to define some of these terms within their appropriate contexts, and to clarify the underlying relationships among these various elements.

Web as software interface

Visual Design: graphic treatment of interface elements (the "look" in "look-and-feel")

Interface Design: as in traditional HCI: design of interface elements to facilitate user interaction with functionality

Information Design: in the Tuftean sense: designing the presentation of information to facilitate understanding
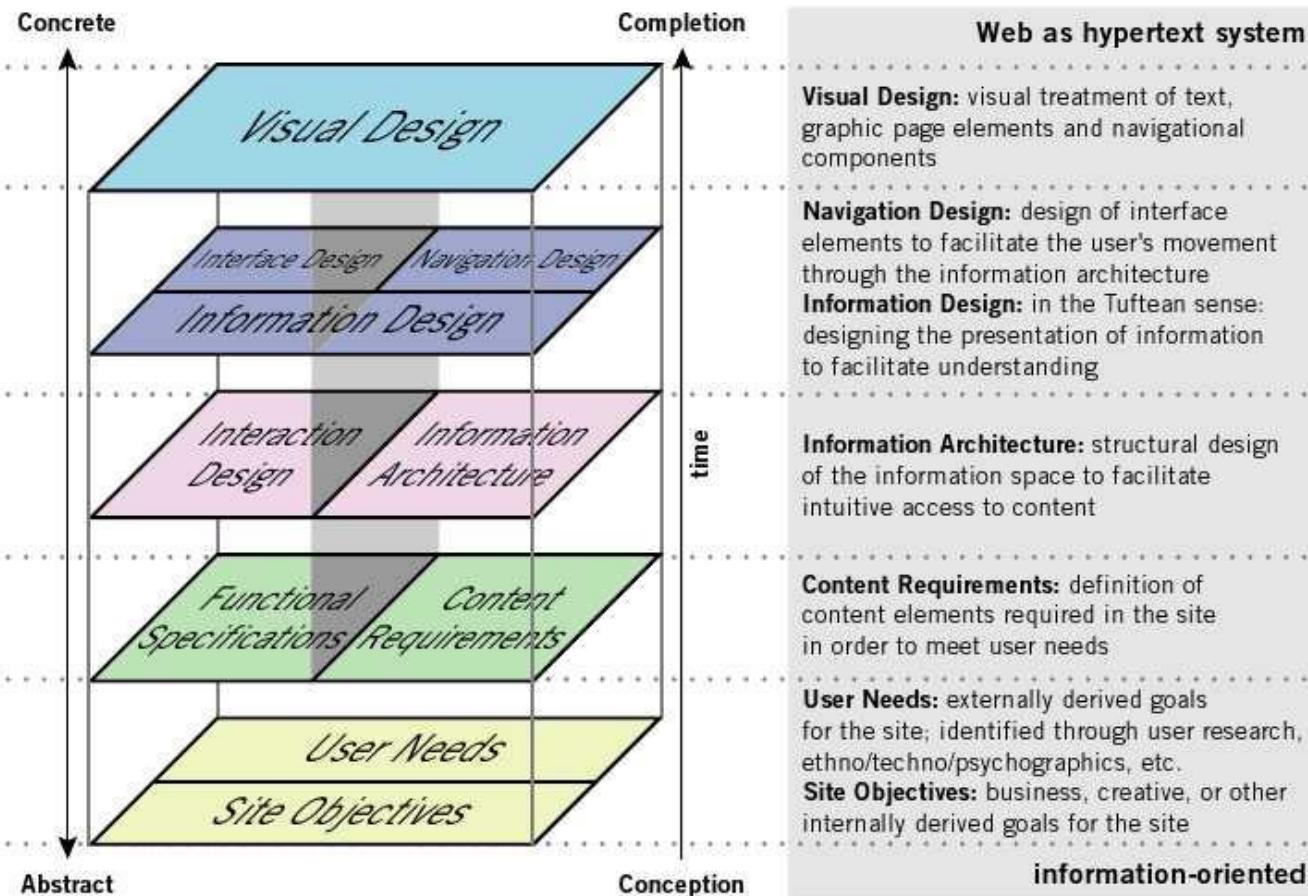
Interaction Design: development of application flows to facilitate user tasks, defining how the user interacts with site functionality

Functional Specifications: "feature set": detailed descriptions of functionality the site must include in order to meet user needs

User Needs: externally derived goals for the site; identified through user research, ethno/techno/psychographics, etc.
Site Objectives: business, creative, or other internally derived goals for the site

task-oriented

Web as hypertext system

Visual Design: visual treatment of text, graphic page elements and navigational components

Navigation Design: design of interface elements to facilitate the user's movement through the information architecture
Information Design: in the Tuftean sense: designing the presentation of information to facilitate understanding

Information Architecture: structural design of the information space to facilitate intuitive access to content

Content Requirements: definition of content elements required in the site in order to meet user needs

User Needs: externally derived goals for the site; identified through user research, ethno/techno/psychographics, etc.
Site Objectives: business, creative, or other internally derived goals for the site

information-oriented

Concrete — Completion

time

Abstract — Conception

Visual Design

Interface Design · Navigation Design

Information Design

Interaction Design · Information Architecture

Functional Specifications · Content Requirements

User Needs

Site Objectives

This picture is incomplete: The model outlined here does not account for secondary considerations (such as those arising during technical or content development) that may influence decisions during user experience development. Also, this model does not describe a development process, nor does it define roles within a user experience development team. Rather, it seeks to define the key considerations that go into the development of user experience on the Web today.

Sabik on Inscenation

- Inscenation – theatre, public life, academy…
- Shakespeare: theatrum mundi, world=theatre
- Theatrality vs. authenticity
- If you play your emotions, they are not true
- Maurice Maeterlinck (BE) refused inscenation as reduction of creative reading, but Thomas Mann (DE) considered text as unfinished work, art piece is inscenation

- Šabík, V. 2008. Estetika inscenovania.

Sabik on Fusion/Analogy

- Never performed play Faust by J. W. Goethe ~ 700 pages
- Theatre always should represent *Gesamtkunstwerk*
- *S*ynthesis of aesthetic principles of another arts:
- 1. Direct fusion
- 2. Indirect analogy of approaches
- E.g. Samuel Beckett (FR) directing his absurd plays accented their musical structure, which should impact final shape, including forms of performing, language, and story dramatisation, G.B.Shaw saw actors as 4 voices…
- Avantgarde forced visual and gestic aspects of inscenation

Sabik on Contradictions

- How many Othellos offers a dozen of European inscenations of Verdi's opera? ~ Original vs. copy
- Extending theatre – Christo is packing buildings, cliffs
- Main contradiction of aesthetics of inscenation with media globalisation
- The requirement of originality vs. Image/copy circulation (internet)
- Danger of teatralization instead of authentic life (Noble prizes, Olympic Games, public life…)
- World theatre of threats from Homer's Ilias to apokalyptic images from totalitarian ideologies, probably not ending with apokalyptic semiotic of September 11.
- => OUR RESPONSIBILITY

Computerized Theatre

- How many Othellos offers a dozen of European inscenations of Verdi's opera? ~ Original vs. copy

- Extending theatre – Christo is packing buildings, cliffs

- Main contradiction of aesthetics of inscenation with media globalisation

- The requirement of originality vs. Image/copy circulation (internet)

- Danger of teatralization instead of authentic life (Noble prizes, Olympic Games, public life…)

- World theatre of threats from Homer's Ilias to apokalyptic images from totalitarian ideologies, probably not ending with apokalyptic semiotic of September 11.

- => OUR RESPONSIBILITY

computerGraphics
FOR THE MEDIA INDUSTRY

Very Initial Observations

• Observe our everyday experience… WLS, WLS, WLS…

• WLS = We live stories

• WLS = We love stories

• WLS = We learn stories

• Life = story

We Live Stories

• Life = story

• Similarity of life stories – situations, characters, motives…

• Situations… fertility, love, birth, growth, fertility, love, birth, growth…

• These are starting situations, different from death, desillusion, war…

• Characters… mother, father… sanguinic, melancholic, phlegmatic, choleric… hero, villain, godess… football team, class, crowd…

• Motives… love story, warning story, history… emotional, rational, moral… individual story, project history, national deliberation

We Love Stories

• Story = storage format

• Stories stored in our memory

• Our cultural capital = static knowledge + dynamic experiences

• Our cultural capital = "data" (out of time) + "algorithms" (time)

• Story has something to do with problem solving

• Stored stories = examples of problems solved

• We love our life and all stories in our memory as context to our life story and a layer of our identity (individual, social)

We Learn Stories

- Story has something to do with problem solving
-
- Our cultural capital = <u>static</u> knowledge + <u>dynamic</u> experiences

- Our cultural capital = "data" (<u>out of time</u>) + "algorithms" (<u>time</u>)

- Problems = survive in any second (fear, anger, hunger, sex)

- Example: A potato is edible (static data) and boiled potato (dynamic algorithm) solves the hunger problem

- Very fast problems (fear, anger) – less than one second

- Slower problems (hunger, sex) – hours, days, years, lifelong

Where Is the Story Start?

• Aristotle: Poetics (Eco: Name of the Rose)

• Example: A potato is edible (static data) and boiled potato (dynamic algorithm) solves the hunger problem

• Where is the boiled potato algorithm start?

• Buy potatoes? Discover America for potatoes first? Plant potatoes? Does the algorithm contain just cleaning and boiling? Is your first love story starting with your first boiling potatoes? Did you boil potatoes for the first time when your grandmother died?

• Aristotle: The starting point is exactly there, where nothing relevant happened before.

Where Is the Story End?

• Aristotle: Poetics. Example: The boiled potato solves the hunger problem. Where is the boiled potato algorithm/story end?

• Buy boiled potatoes and eat them? Will you eat in the dystopic future the very last potato in the Universe? Is the end of the boiled potato story in the SSST water closet? Does the algorithm contain just cleaning and boiling? Was your first love story ending with boiling potatoes scene? Did boiled potatoes help your father when he was stomach sick? Imagine **a storyteller** telling a story about boiling potatoes in Europe before 1492 – he/she will be for sure misunderstood and eventually burned in the fire as a which…

• Aristotle: The ending point (story closing) is exactly there, where nothing relevant happens after.

What about Meaning of Love?

• BTW – How do we understand words? Beatles: All you need is LOVE. What about Love?

• Eros – love among lovers, only twice in Old Testament, zero times in New one, Nietzsche: christianity killed Eros, Pope (2006): Deus caritas est (God = Love). What means caritas?

• Charitas – love of Mother Theresa (~helping, empathy)

• Agape – love of God to a human, love with sacrifice/prey (~giving)

• Filia – love among friends (~helping, sympathy)

• …

computerGraphics
FOR THE MEDIA INDUSTRY

What about Meaning of Bosna?

- Bosna is the river name – hydronymum, the oldest layer in laguages

- Bosna = water

- Dalmatia = sheep, dalme in Albanian

- Herzog = duke (head of army, vojvoda in Slovak)

- Sarajevo = hm… (a little knife for me, in Slovak, like Brno in Arab)

- … (was the final sequence in the Tunel movie using water 4 Bosna?)

Who is the Storyteller?

• Author, character, neutral (e.g. voiceover) vs. me, we, it, you?

• Is the storyteller credible, preacher/priest/judge or fool/clown?

• E.g. Forrest Gump storyteller credible morally, limited intellectually

• E.g. David Mamet in his plays – characters unable to describe, having no language

• E.g. Antigona – characters unable to communicate, having no common language (visualized by an empty square, invisible to characters, visible to audience), like Salman Rushdie and fundamentalist ajatollah Khomejni

• What is the narrator able and unable?

The simplest Storyteller

• Neutral observer, just eye and ear for events, back-telling

• Rational unambiguous message – e.g. how to boil potatoes

• Goal, requirements, decisions, time plan, evaluating output quality, eventually possible errors and their prevention or fixing

• Deterministic algorithms in pseudocode, natural language connected with sequence, branching and cycle structures

• One input point, one output point, no unconditional jumps

• In other words, structured programming, imperative languages

• Stochastic algorithms – e.g. Mozart, dice

Story's Main Concurrent?

• Game

• Games compete with stories for our time. Our time is subdivided into 4 quadrants (Covey): urgent (ASAP) – nourgent (ASTI), important – not important, success secret = move to second quadrant = spend your daytime in second quadrant (sleepingtime is already there), in other words, do important things without time pressure

• What is the game?

• What are key differences between game and story design?

Defining Game (Play)

- J. Huizinga: Homo Ludens
- J. A. Comenius: Schola Ludus
- Marxists: just a preparation for work
- E. Fink: Oasis of Happiness
- A. Ferko: Behavioral Mirror

Ontology Example

- CIDOC CRM
- Conceptual Reference Model for Virtual Museums – entities, properties
- The Nose of Michael Jackson before and after => ontology is a data model

- Alphaworld – profiting cybercity ~ CA

Games & Stories => 16

- The end of computer games
- A. Glassner: Interactive Storytelling, p. 205

- Social - individual
- Story – no story
- Computer – no computer
- Game – no game

Many VEs

- Virtual Space 8D (x, y, z, t, r, g, b, alfa)
- Sound Space
- Social Space
- Story Space (Glassner)
- Knowledge
- No time problem => interestingness

Time… hm…

- Qvortrup… Borges… no sensor
- Everybody publishes, nobody reads...
- The answer is blowing in the data mining community only – 9 measures of interestingness
- Koestler? NLP?
- Virtual museums – engagement, enchantment – hermeneutic place

Time… **Garden of Forking Paths**

- J. L. Borges 1941 (quo Qvo, p. 376)
- short story The Garden of Forking Paths
- „… an infinite series of times, in a dizzily growing, ever spreading network of diverging, converging, and parallel times. The web of time / the strands of which approach one another, bifurcate, intersect or ingore each other through the centuries / embraces every possibility."

Time in Multimedia

- Virtual Interaction by Qvortrup (2001, p. 371n): description of the narrativity
- Two kinds of series
- Discourse structure (dialogue, interaction)
- Event structure (not very interesting in dictionary)
- Developer's perspective => events
- User's perspective => discourse

Temporal Logic (McTaggart 1927, Prior 1972)

- A-logical notions: past – present - future
- B-logical notions: earlier, later, "simultaneous with"
- Discourse structure (dialogue, interaction)
- Event structure (not very interesting in dictionary)
- Developer's perspective => events, case B
- User's perspective => discourse, case A
- What is real? Dialogue has the „nowness"

Time, causality, truth

- temporal = causal ???
- Truth should be understood as <u>relative</u> to temporal instants
- The present is the real considered in relation to two particular species of unreality, namely past and future (A.N.Prior 1972)
- Developer => events
- User => discourse, click => TWO pasts

Storyteller, director, user
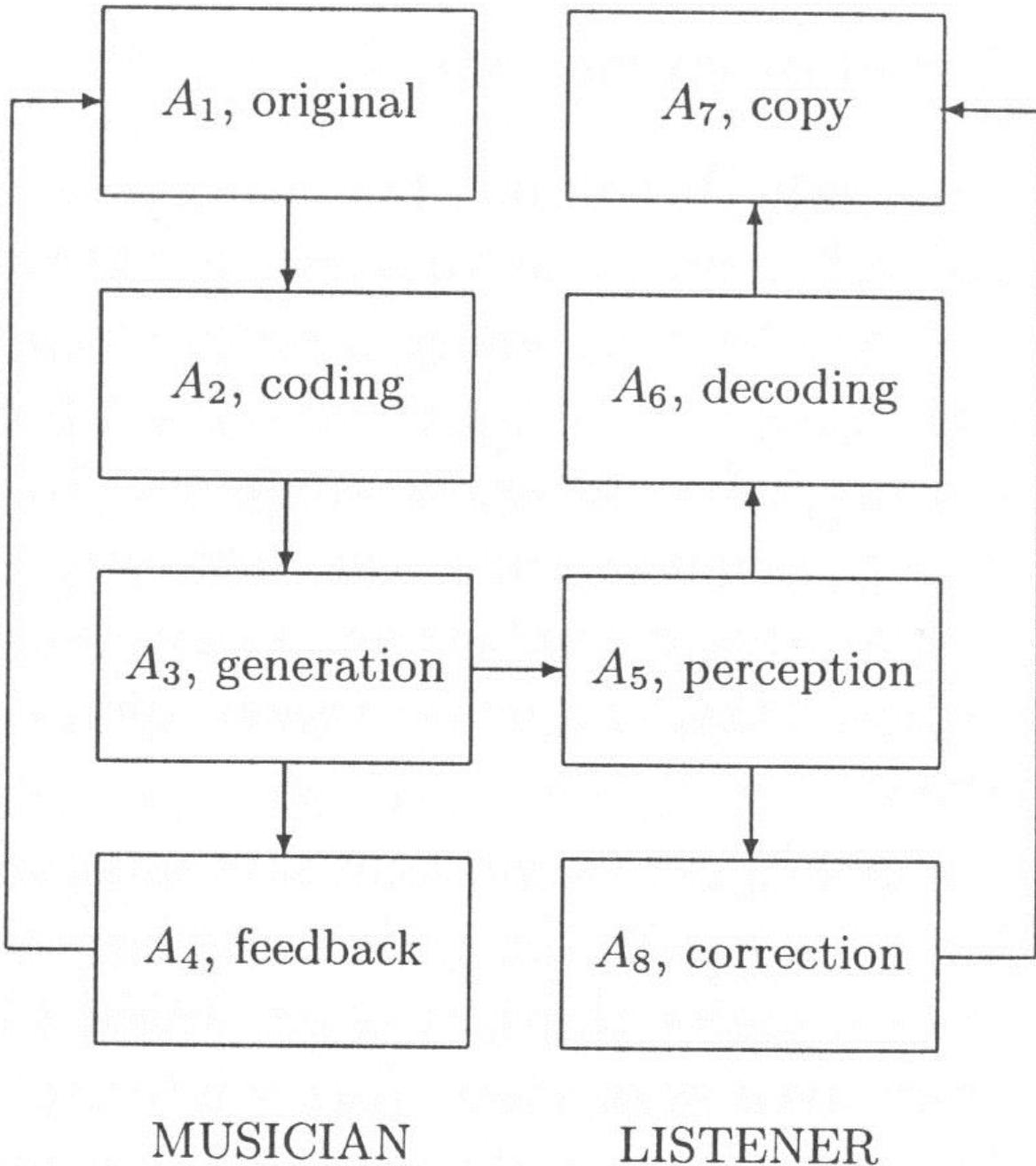
- Three distinct roles
- Storyteller (script) ~ developer => events
- Director (digital story) – two discourses: with the past script and future user
- User => discourse, click => TWO pasts
- Analogy ~ composer, orchestra, audience
- Author, interpeter, listener (Haluska 2004, p. 62)

	MUSICIAN	LISTENER
INNER STATE	A_1, original	A_7, copy
INFORMATION	A_2, coding	A_6, decoding
PHYSICAL AGENT	A_3, generation	A_5, perception
SOUND SENSATION	A_4, feedback	A_8, correction

Storyteller

- Message

- What is interesting?

Director

- Message, script, events, beats (McKee)
- Genres – Bertok-Janousek
- Syd Field, McKee, Inscapers, Glassner

- What is interesting?

Grammar of the Film Language

By Arijon 1976

- FL as a System of Visual Communication
- The Importance of Parallel Film Editing
- Defining the Basic Tools – shot, movement, distances, types of editing, visual puctuation, scne matching, opposed glances, centre of interest alteranates
- The Triangle Principle
- Dialogue 2, 3, more players
- Editing Patterns for Static Dialogue Scenes

Grammar of the FL 2

By Arijon 1976

- The Nature of Screen Motion
- Cutting after the Movement
- Motion inside the Screen
- Motion into and out of Shot
- Player A Moves towards Player B
- Using Master Shots to Cover Motions on the Screen
- Irregular Cases
- Player A Moves away from Player B

Grammar of the FL 3

By Arijon 1976

- Players Move Together
- Solving Difficult Editing Situations
- Other Types of Motion – circular, vertical, stops
- 20 Basic Rules for Camera Movement
- The Panning Camera
- The Travelling Camera
- The Camera Crane and the Zoom Lens
- Action Scenes
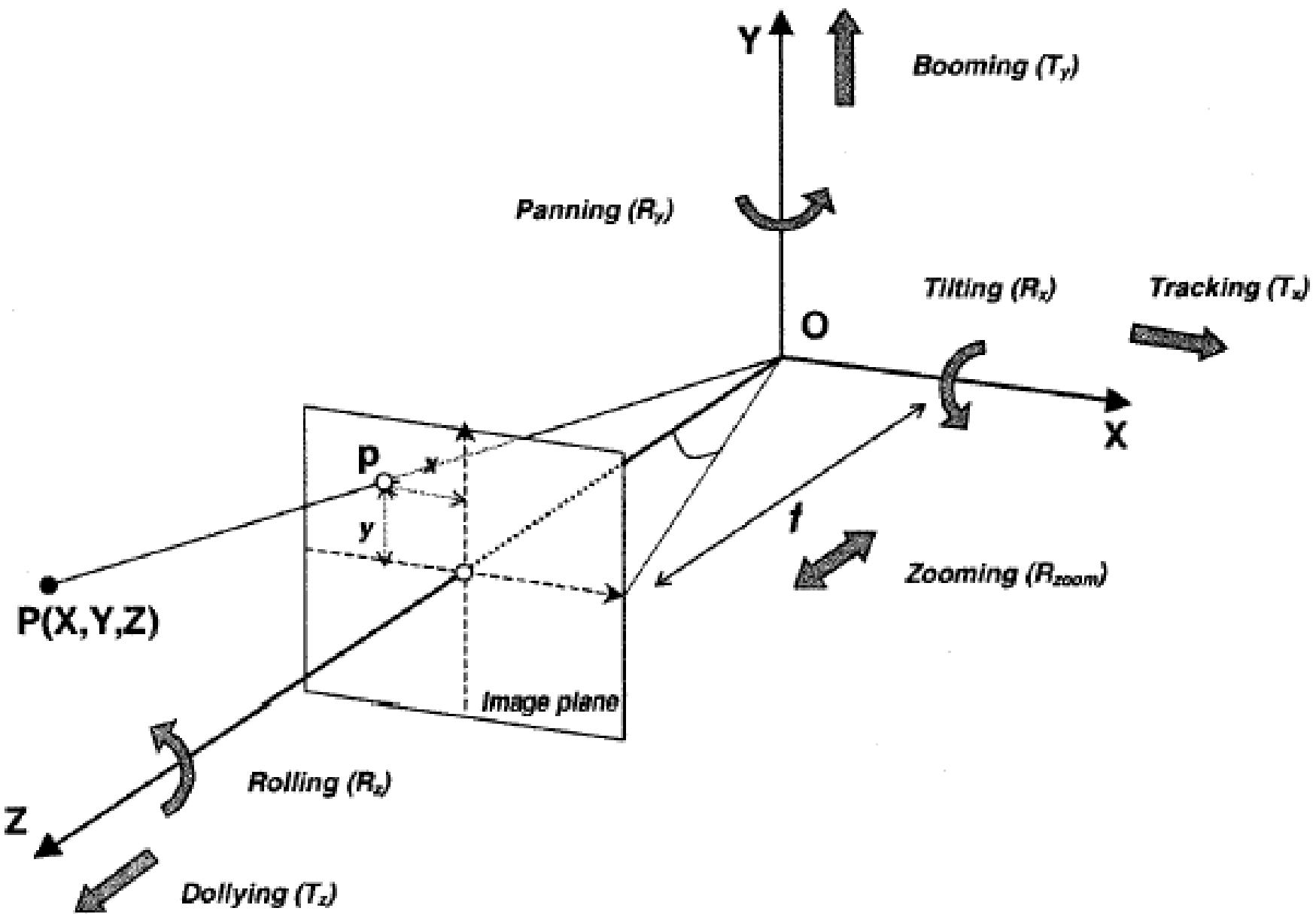
Grammar of the FL 4

By Arijon 1976
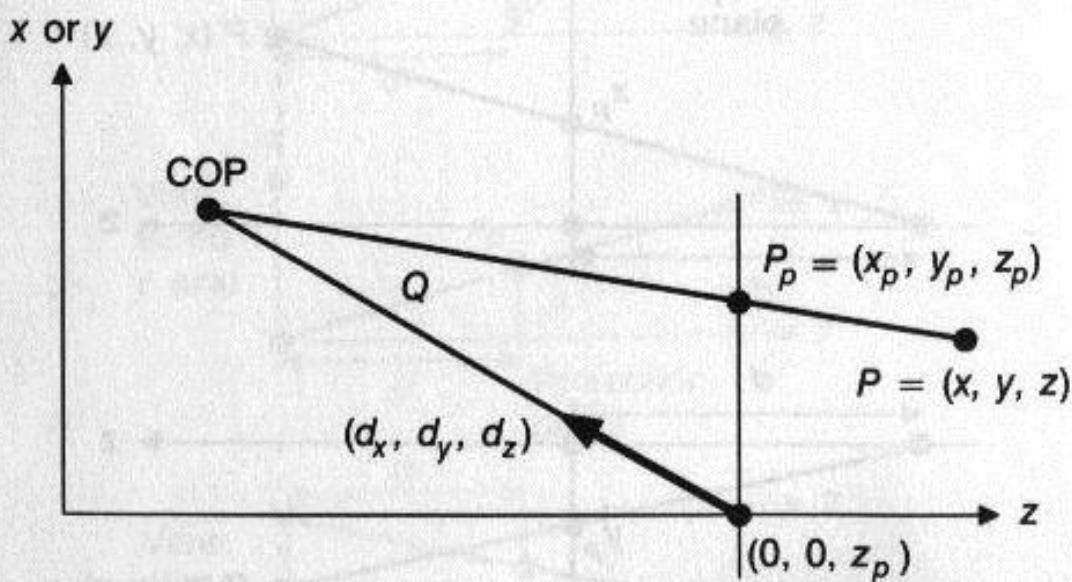
- Editing in the Camera
- Moving from Zone to Zone
- Combined Techniques
- Film Punctuation

- 28 chapters, 624 pages, nothing on sound spaces
- Final Fantasy – digital actors, easier than voices, even Shrek uses dubbing

for MPEG-7 Camera Motion Descriptor: Perspective projection to image plane p and camera motion parameters. The

$$M_{\text{general}} = \begin{bmatrix} 1 & 0 & -\dfrac{d_x}{d_z} & z_p\dfrac{d_x}{d_z} \\[2ex] 0 & 1 & -\dfrac{d_y}{d_z} & z_p\dfrac{d_y}{d_z} \\[2ex] 0 & 0 & -\dfrac{z_p}{Q\,d_z} & \dfrac{z_p^2}{Q\,d_z} + z_p \\[2ex] 0 & 0 & -\dfrac{1}{Q\,d_z} & \dfrac{z_p}{Q\,d_z} + 1 \end{bmatrix} .$$

24 Content Descriptors

- **Color 7 - space, quantization, dominant, scalable, layout…**

- **Texture descriptors 3 - homogenous, browsing, edge histogram**

- **Shape descriptors 3 - region shape, contour shape, shape 3D**

- **Motion 4 - camera, trajectory, parametric motion, action**

- **Others 2 - localization, face**

- **Audio 5 – signature, instrument, melody, indexing, spoken**

- **In total, 10 radiometric, 9 geometric, 5 others in MPEG-7**

MPEG-7 Webpages

- **http://www.chiariglione.org/mpeg - MPEG community**

- **http://www.mpegif.org - MPEG-7 community**

- **http://mpeg7.nist.gov - MPEG-7 consortium**

- **Mental skashi 3 – use MPEG-7 for directing**

- **Reference**
- **MANJUNATH, B. S. et al. *eds.* 2002. *Introduction to MPEG-7.* Wiley 2002.**
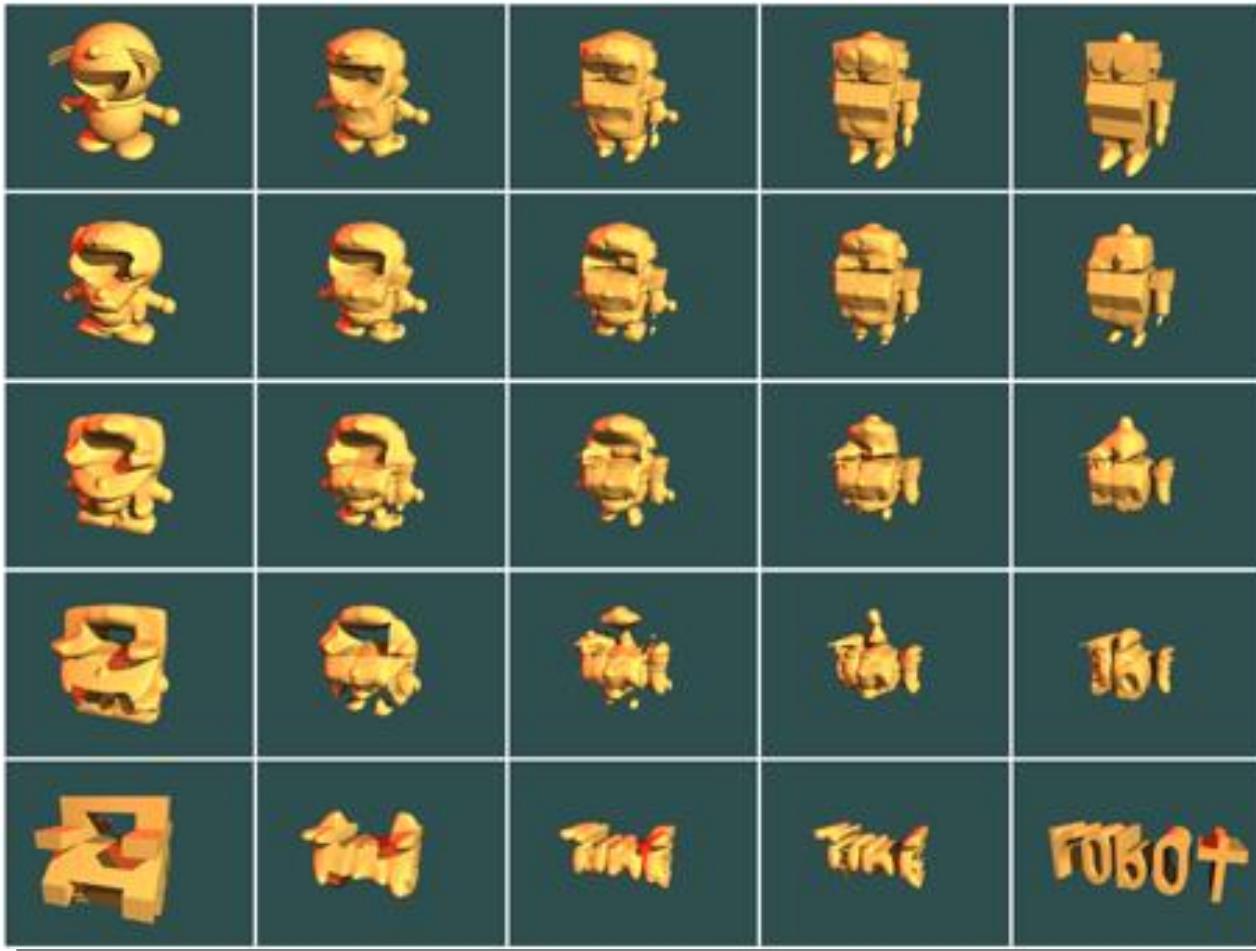
Authoring Tool Bonus Example

- F-rep allows for mastering 2-dimensional time
- Symbolic language for modeling objects
- HyperFun demo
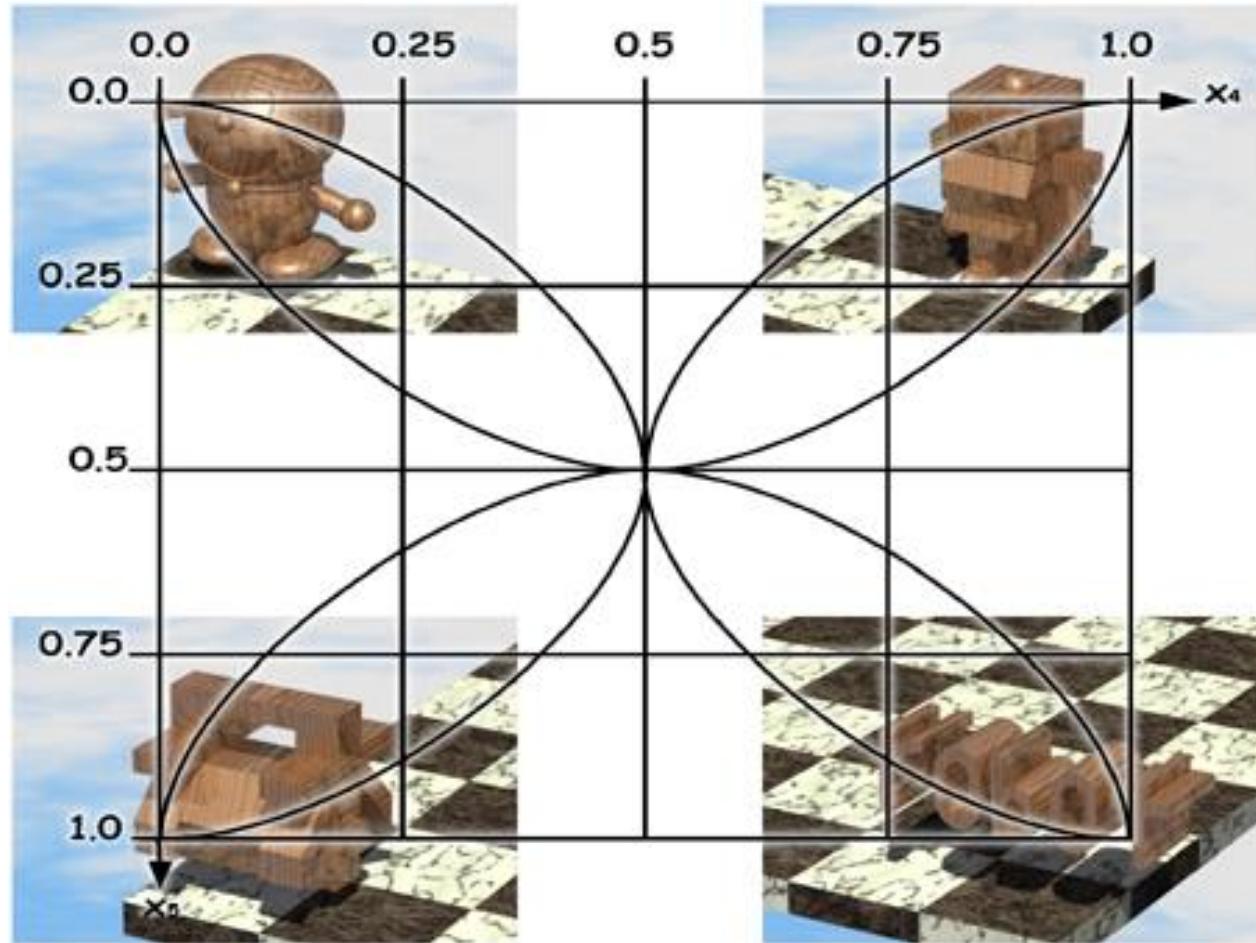
Spreadsheet Rendering

by Alexander PASKO, www.hyperfun.org

Animation Path in t_1t_2 Plane
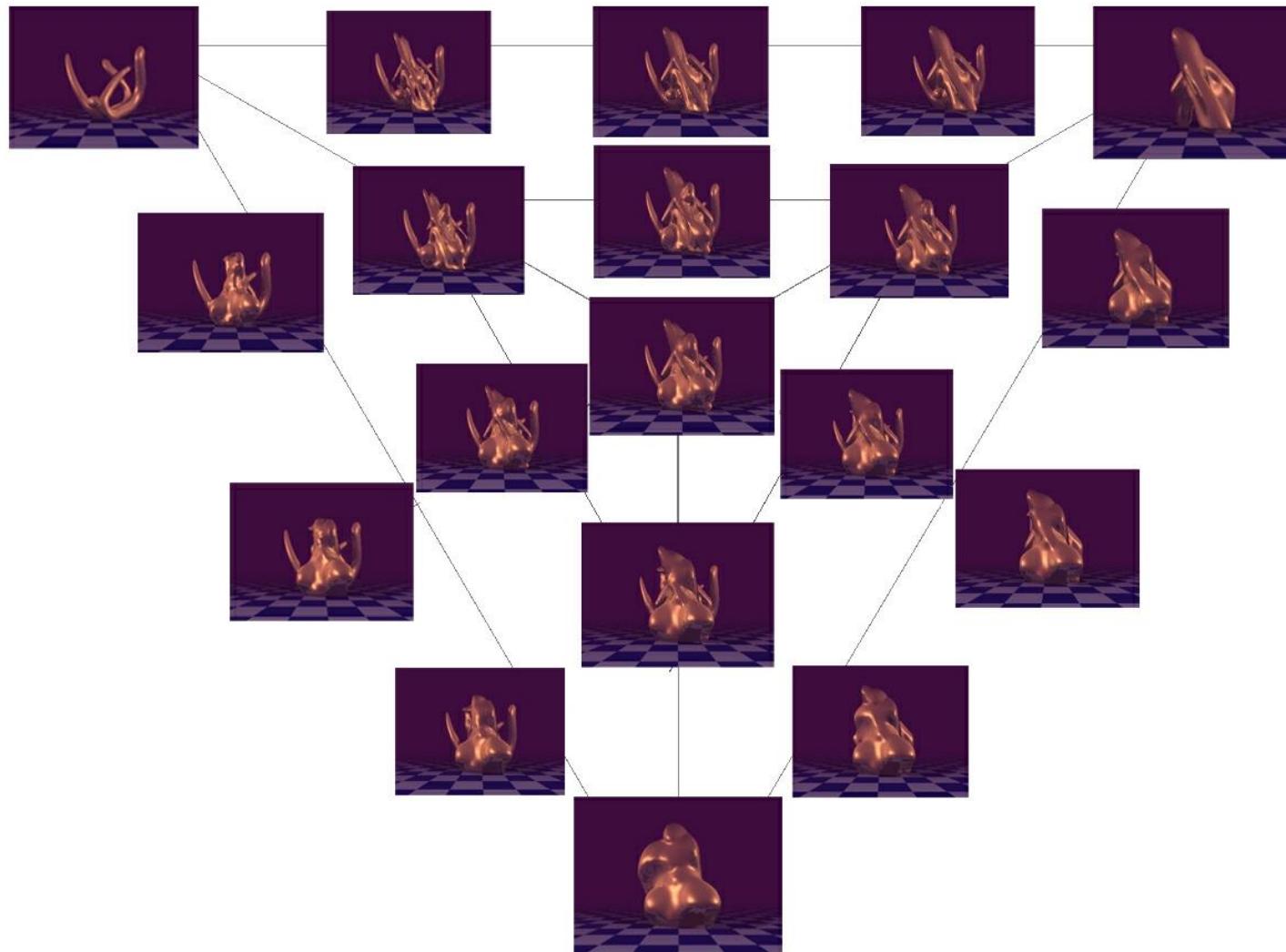
by A. PASKO, www.hyperfun.org

Spreadsheet Rendering

• **Spreadsheet animation images from "Homotopic Fun in 5D space" by E. Fausett, A. Pasko, V. Adzhiev**
•http://wwwcis.k.hosei.ac.jp/~F-rep/Homotopic.html

• **Inbetween statues in the triangle by M. Kazakov, A. Pasko, V. Adzhiev**

• **F-rep completization of CG theory & practice**
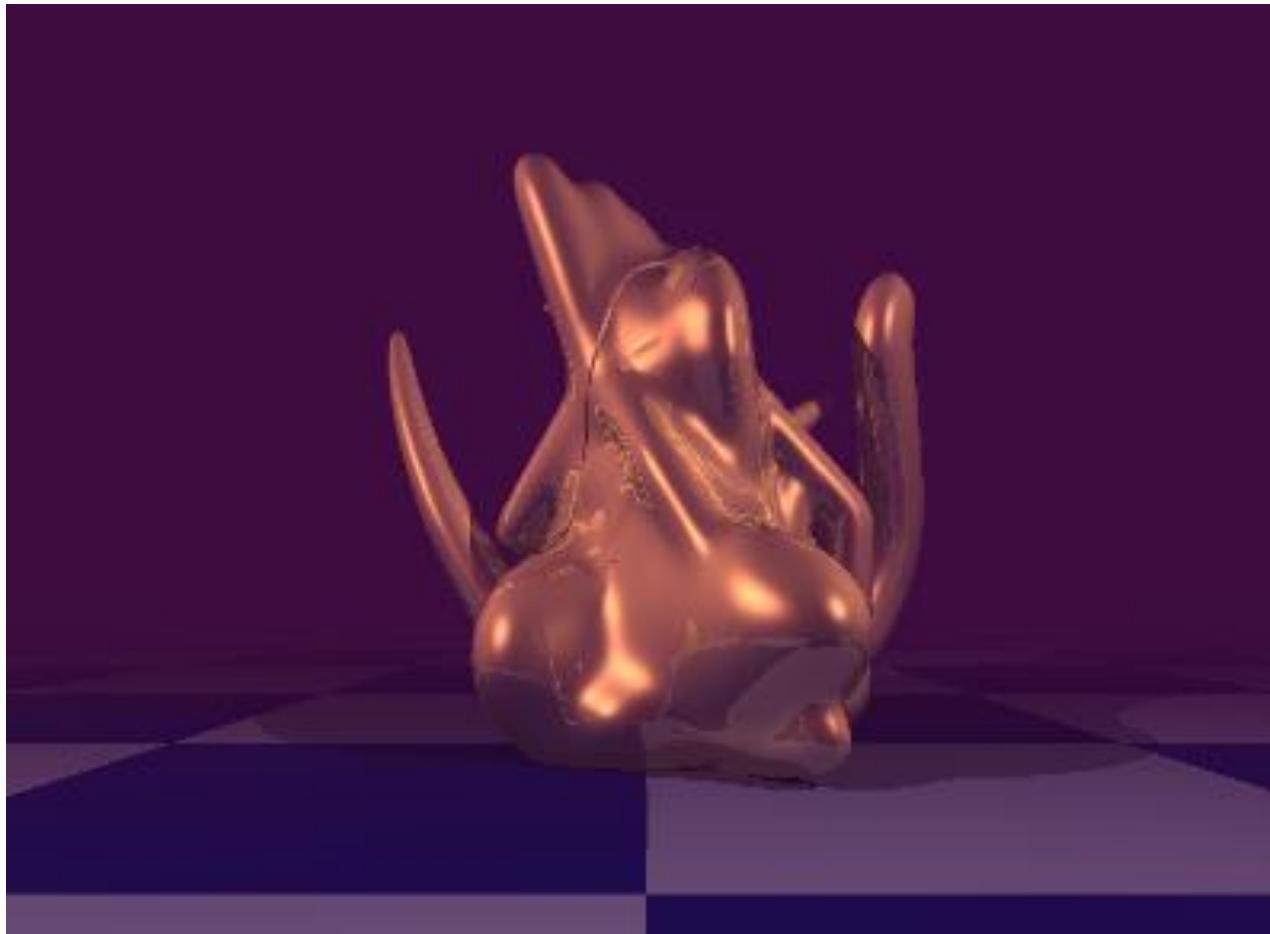
The Shape in the Triangle Center by

Alexander PASKO, www.hyperfun.org

HyperFun Logo

Language and Software Tools for **F-rep** Geometric Modeling
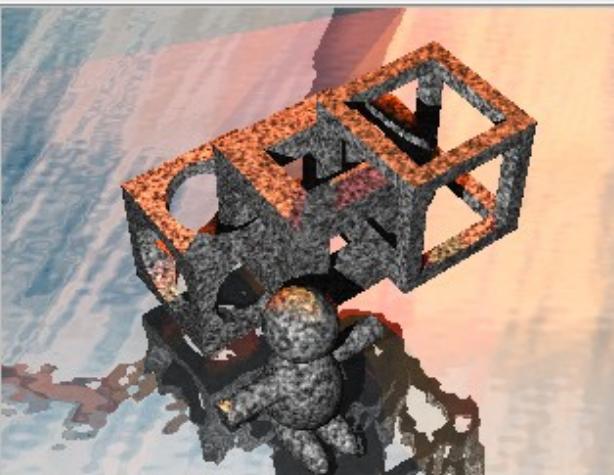
HyperFun is a simple geometric modeling language. It is intended for modeling geometric objects described in the form:

$$F(x1, x2, x3, ..., xn) >= 0$$

This language is applicable to modeling algebraic and skeleton-based "implicit" surfaces, convolution surfaces, distance-based models, voxel objects, and more general **F-rep** objects.

The model in HyperFun is interpreted by the modeling and visualization software tools.

Introduction
HyperFun language
Overview (**PS+zip** , **PDF**)
Tutorial (**in Japanese**)
Tools
Applications
Gallery
Authors
Sponsors
Contact & Mailing List

hfExample


```
--This HyperFun program consists of one object:
--union of superellipsoid, torus and soft object

my_model(x[3], a[1])
{
array x0[9], y0[9], z0[9], d[9], center[3];
x1=x[1];
x2=x[2];
x3=x[3];

-- superellipsoid by formula
superEll = 1-(x1/0.8)^4-(x2/10)^4-(x3/0.8)^4;

-- torus by library function
center = [0, -9, 0];
torus = hfTorusY(x,center,3.5,1);

-- soft object
x0 = [2.,1.4, -1.4, -3, -3, 0, 2.5, 5., 6.5];
y0 = [8, 8, 8, 6.5, 5, 4.5, 3, 2, 1];
z0 = [0, -1.4,-1.4, 0, 3, 4, 2.5, 0, -1];
d = [2.5, 2.5, 2.5, 2.5, 2.5, 2.5, 2.5, 2.7, 3];
sum = 0.;
i = 1;
while (i<10) loop
        xt = x[1] - x0[i];
        yt = x[2] - y0[i];
        zt = x[3] - z0[i];
        r = sqrt(xt*xt+yt*yt+zt*zt);
        if (r <= d[i]) then
                r2 = r*r; r4 = r2*r2; r6 = r4*r2;
                d2 = d[i]^2; d4 = d2*d2; d6 = d4*d2;
                sum = sum + (1 - 22*r2/(9*d2) +
                17*r4/(9*d4) - 4*r6/(9*d6));
        endif;
        i = i+1;
endloop;
soft = sum - 0.2;

-- final model as set-theoretic union
my_model = superEll | torus | soft;
}
```
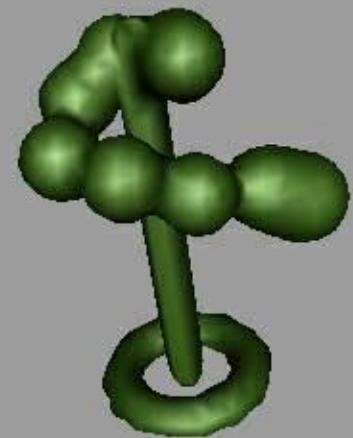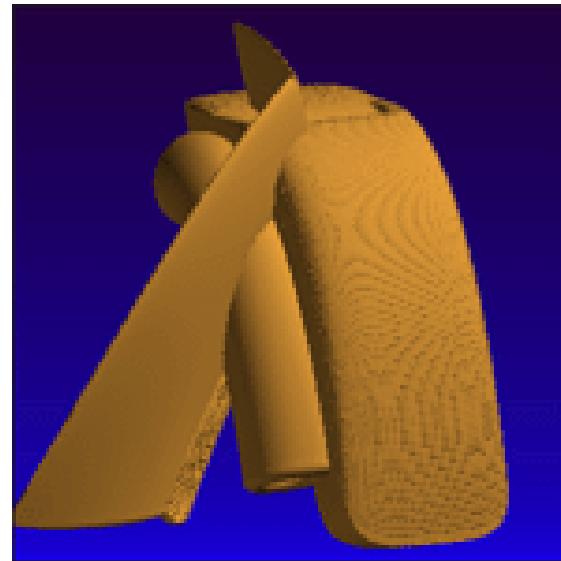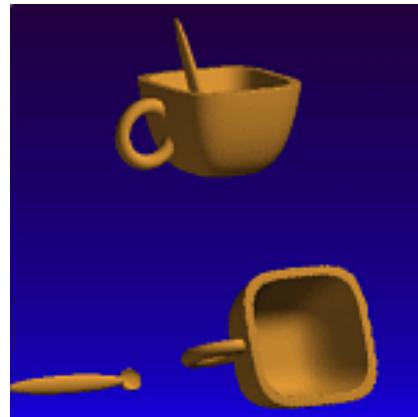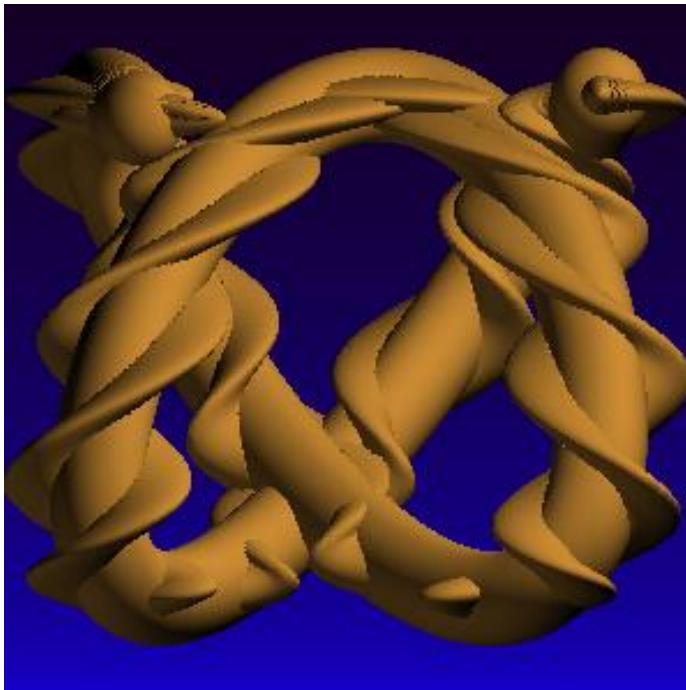
Unary Operations: Sweeping

Images by A. Pasko

HyperFun Gallery by Students

Ant

Fish

Hand

Tora

Core

Faucet

Spirit
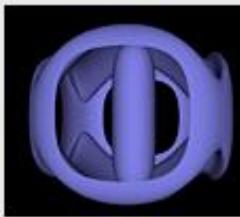
Rabbit

Doughnut

Child
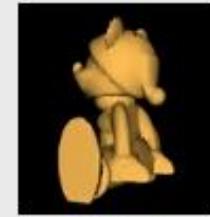
Infinity
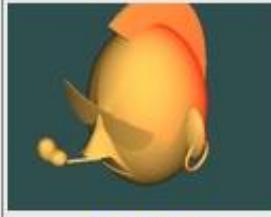
Reconstruction

Toy

Mouse

Yankee

Two wing

Too Many Stories

Story Space (Glassner)

- Life = story
- City = story
- Emotions = story (child)
- Ideas = story (adult)
- Moral = story (parent)
- Memories of your great AHs, AHAs, HAHAs = story
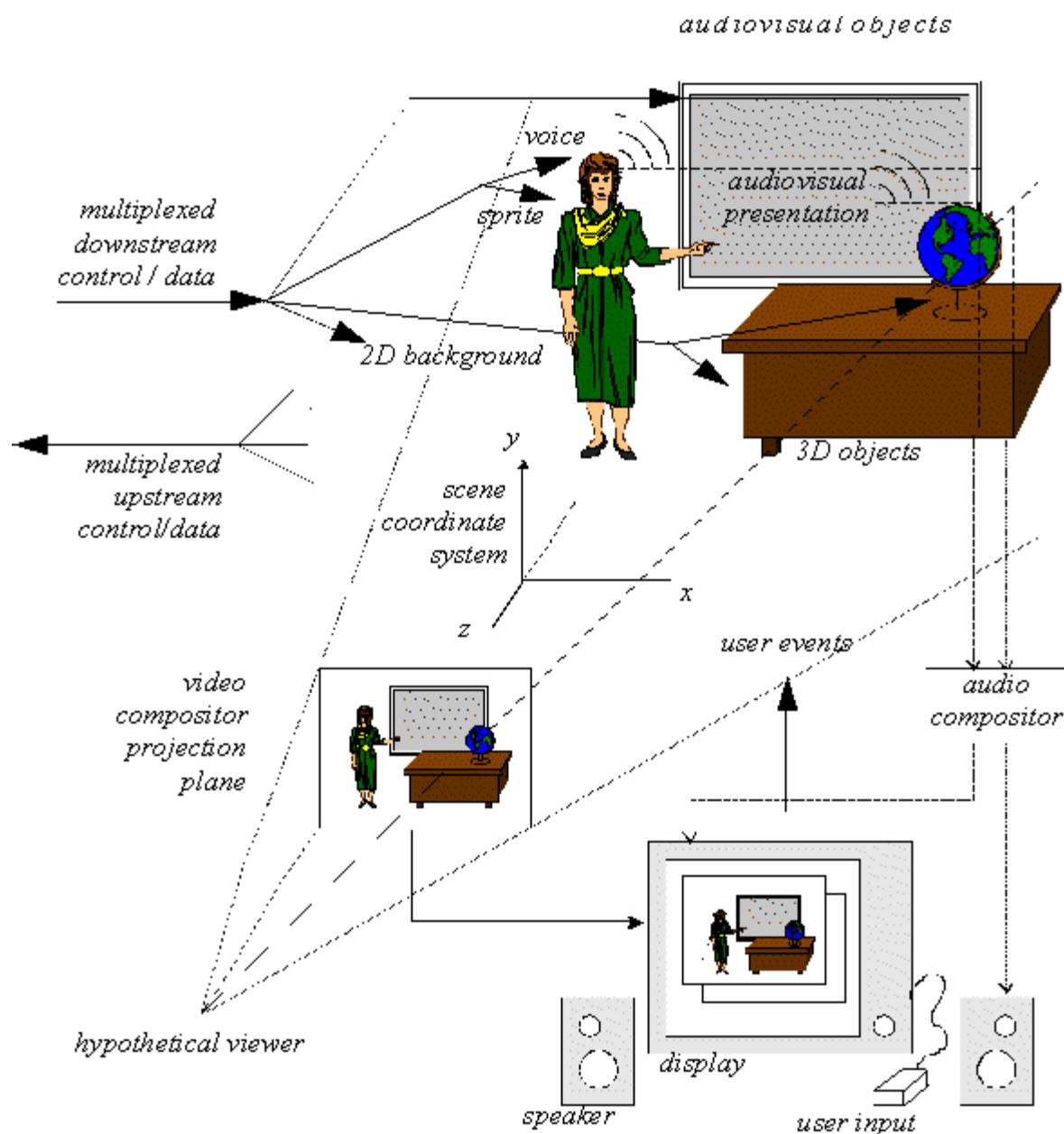
Tell Stories Digitally

Story Space (Glassner)

- MPEG-4
- NLP
- Interaction
- Storytelling
- Directing
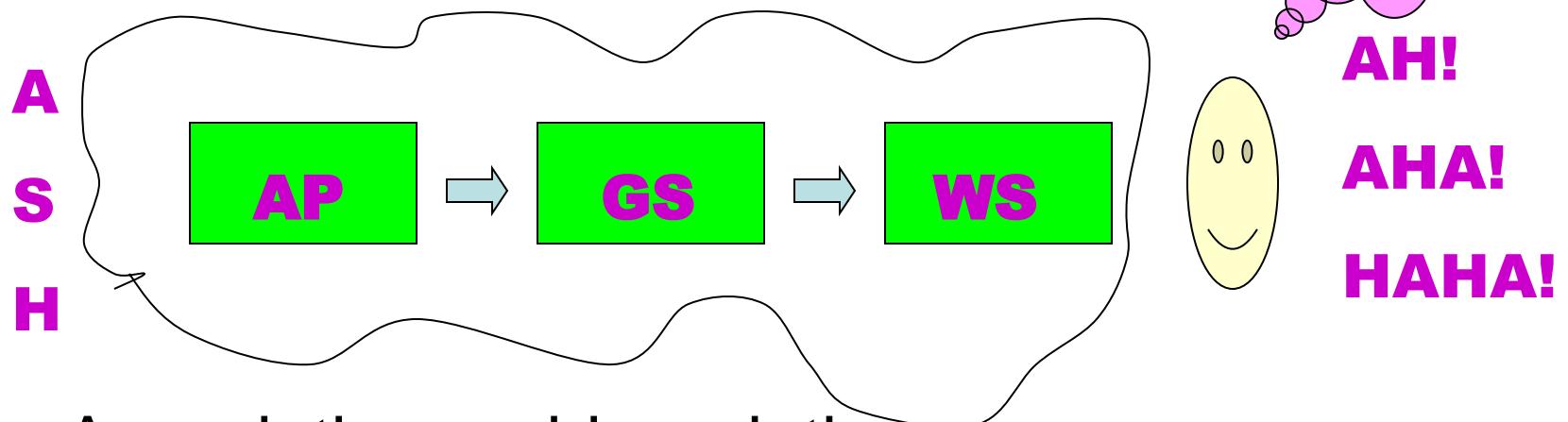
audiovisual objects

voice

audiovisual presentation

multiplexed downstream control / data

sprite

2D background

multiplexed upstream control/data

y

scene coordinate system

z

x

3D objects

user events

audio compositor

video compositor projection plane

hypothetical viewer

display

speaker

user input

On Model of a Human Being

- The Act of Creation (creatology):

A
S
H

AP → GS → WS

AH!

AHA!

HAHA!

- Association >> bissociation
- Arthur KOESTLER: no labyrinth, no mouse, just bisociating two contexts

computerGraphics
FOR THE MEDIA INDUSTRY

Genius Loci

- Genius Loci = Spirit of the Place, LokalGeist?
- Etruscans – mundus, urbs, Roma
- Genius Loci … Phenomenology
- NORBERG-SCHULZ, CH. 2000. *Genius Loci*.
- Implications (Hegel, Marx, Heidegger)
- Bogdan Bogdanovic in Vienna

- From individual stories to group stories

World Cultural Heritage

- UNESCO
- 700++ items
- 30++ in AT, CZ, SI, SK, nearly no 3D models
- European added value is not added
- Digital preservation, documenting, publish...
- „... to enable Europeans to be consciously (and interactively) proud of their contribution to the World Cultural Heritage"

computerGraphics
FOR THE MEDIA INDUSTRY

City = process in time & space

- CORP 2002 paper by Bettina Kohler, Peter Ferschin et al. from IEMAR TU Wien team:

- The City as a Process in Time and Space

- Luton University research – „movie"

- Next slide shows this at the first glance

Urban Process in Time & Space

Real world photo by A. F., Graz 2001

EU Authoring Tool Example

- INSCAPE Importance
- Using PowerPoint
- Nonlinearity in Balinese theatre
- Using PowerPoint for branching time
- INSCAPE authoring

computerGraphics
FOR THE MEDIA INDUSTRY

Your Digital Story: Demo Reel

- Which single image represents Your key contribution?
- What is the title of Your demo reel?
- Can You sketch a logo for this story?
- … (ask, please, another question at this level)

- fundamental project decisions.

http://www.pixar.com/companyinfo/jobs/howto.html

Your Demo Reel Homework

1) An application that requires a demo reel submission has 5 parts:

a) the cover letter
b) the resume
c) the demo reel
d) the demo reel breakdown
e) the on-line application (the application contains the Reel Submission Agreement)

http://www.pixar.com/companyinfo/jobs/howto.html

computerGraphics
FOR THE MEDIA INDUSTRY

7 Elements of Digital Storytelling

•Educational uses of Digital Storytelling.

•Class at Houston University

http://digitalstorytelling.coe.uh.edu/index.html

•A useful starting point to begin working with digital stories.

•1. Point of View

•2. A Dramatic Question

•3. Emotional Content

•4. The Gift of Your Voice

•5. The Power of the Soundtrack

•6. Economy

•7. Pacing

Seven Elements

- 1. **Point of View**
- What is the main point of the story and what is the perspective of the author?
- 2. **A Dramatic Question**
- A key question that keeps the viewer's attention and will be answered by the end of the story.
- 3. **Emotional Content**
- Serious issues that come alive in a personal and powerful way and connects the story to the audience.
- 4. **The Gift of Your Voice**   A way to personalize the story to help the audience understand the context.

http://digitalstorytelling.coe.uh.edu/index.html

computerGraphics
FOR THE MEDIA INDUSTRY

Seven Elements 2

- 5. **The Power of the Soundtrack**
- Music or other sounds that support and embellish the storyline.
- 6. **Economy**
- Using just enough content to tell the story without overloading the viewer.
- 7. **Pacing**
- The rhythm of the story and how slowly or quickly it progresses.

- http://digitalstorytelling.coe.uh.edu/index.html

Conclusions

- Individual stories pros and cons
- Pro – idea, data, understanding unique in the world
- Con – risky in success competition
- Possible compromise – use fairy tale paradigm
- Economy – combine with project and demoreel
- Open – semiotic systems and directing success
- In progress – script development

Directing and Storytelling

This core module will enable students to write, design, storyboard and direct an animated feature. The module will comprise of six main elements:

- Drawing
- Narrative
- Technical feasibility assessment
- Storyboarding
- Presentation
- Directing

Computer Graphics for the Media Industry (CGMI)

A new MSc program