Advanced Interaction Design

Creativity

What is creativity?

- The making of something unknown (for you)
- A novel way to do something
- Reuse of a thing/method in a new context
- Establish a new perspective
- Deliberate or by chance
- Everyone can be creative

- = *something outside the box*

Theory

- A couple of stages
  1. **Preparation** – defining what the problem is
  2. **Incubation** – putting the problem to rest
  3. **Insight** - inspiration
  4. **Verify** and **implement**

- *Any suggestions on how we can do these 4 stages?*

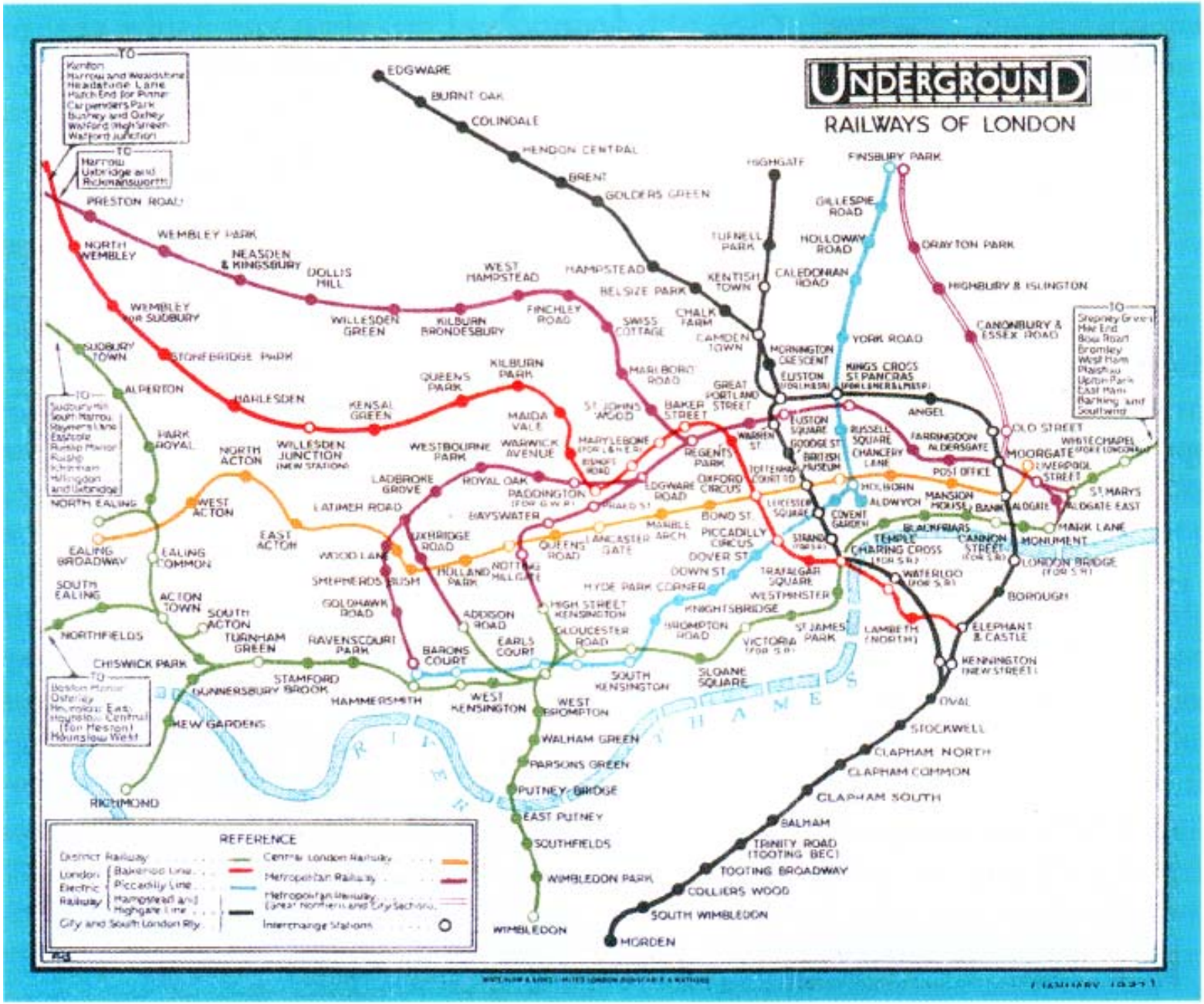
Prerequisites

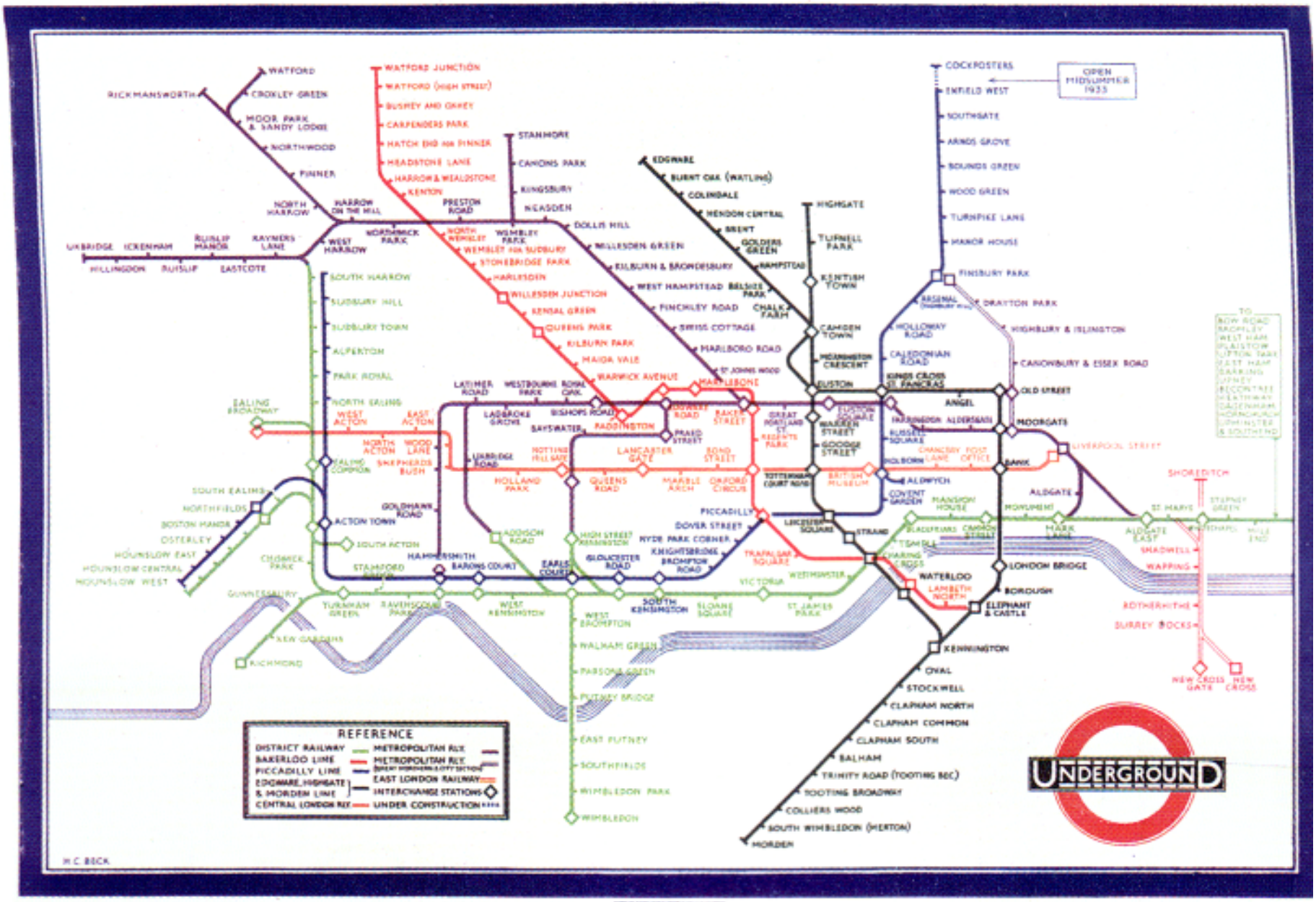
- Understanding the problem
- Master the technology – see beyond details of implementation
- Motivation, endurance
- Concentration
- Discipline
- Hard work is not always a success
  - Physical activities, like walking inspires new thoughts
  - To do something completely different may help

A COUPLE OF APPROACHES

Inversion (ref. Tõnis Tõnisson)

- Use of negations, the opposite
- Negate your problem
- It is about thinking outside the box
  - Making your self free from limitations
  - Not predictable
- Not solving the problem at hand, but changing the problem
  - New walkways
  - Kids playground


UNDERGROUND
RAILWAYS OF LONDON
EDGWARE
BURNT OAK
COLINDALE
HENDON CENTRAL
BRENT
GOLDERS GREEN
HIGHGATE
FINSBURY PARK
GILLESPIE ROAD
HOLLOWAY ROAD
DRAYTON PARK
HIGHBURY & ISLINGTON
TUFNELL PARK
KENTISH TOWN
CALEDONIAN ROAD
HAMPSTEAD
BELSIZE PARK
CHALK FARM
CAMDEN TOWN
MORNINGTON CRESCENT
YORK ROAD
CANONBURY & ESSEX ROAD
KINGS CROSS ST PANCRAS
ANGEL
OLD STREET
MOORGATE
WHITECHAPEL
LIVERPOOL STREET
ST MARYS
ALDGATE EAST
MARK LANE
MONUMENT
LONDON BRIDGE
BOROUGH
ELEPHANT & CASTLE
KENNINGTON (NEW STREET)
OVAL
STOCKWELL
CLAPHAM NORTH
CLAPHAM COMMON
CLAPHAM SOUTH
BALHAM
TRINITY ROAD (TOOTING BEC)
TOOTING BROADWAY
COLLIERS WOOD
SOUTH WIMBLEDON
MORDEN
PRESTON ROAD
WEMBLEY PARK
NORTH WEMBLEY
NEASDEN & KINGSBURY
DOLLIS HILL
WEST HAMPSTEAD
WILLESDEN GREEN
KILBURN BRONDESBURY
FINCHLEY ROAD
SWISS COTTAGE
WEMBLEY for SUDBURY
SUDBURY TOWN
STONEBRIDGE PARK
ALPERTON
HARLESDEN
KENSAL GREEN
QUEENS PARK
KILBURN PARK
MARLBORO ROAD
ST JOHNS WOOD
BAKER STREET
GREAT PORTLAND STREET
EUSTON
EUSTON SQUARE
RUSSELL SQUARE
FARRINGDON
ALDERSGATE
CHANCERY LANE
POST OFFICE
PARK ROYAL
NORTH ACTON
WILLESDEN JUNCTION (NEW STATION)
WESTBOURNE PARK
MAIDA VALE
WARWICK AVENUE
MARYLEBONE
REGENTS PARK
WARREN ST
GOODGE ST
BRITISH MUSEUM
TOTTENHAM COURT RD
HOLBORN
ALDWYCH
MANSION HOUSE
BANK
ALDGATE
NORTH EALING
WEST ACTON
LADBROKE GROVE
ROYAL OAK
PADDINGTON
EDGWARE ROAD
OXFORD CIRCUS
LEICESTER SQUARE
COVENT GARDEN
BLACKFRIARS
TEMPLE
CHARING CROSS
CANNON STREET
LATIMER ROAD
BAYSWATER
PRAED ST
BOND ST
MARBLE ARCH
PICCADILLY CIRCUS
STRAND
EAST ACTON
UXBRIDGE ROAD
QUEENS ROAD
LANCASTER GATE
DOVER ST
DOWN ST
TRAFALGAR SQUARE
WATERLOO
EALING BROADWAY
EALING COMMON
WOOD LANE
SHEPHERDS BUSH
HOLLAND PARK
NOTTING HILL GATE
HYDE PARK CORNER
WESTMINSTER
SOUTH EALING
ACTON TOWN
SOUTH ACTON
GOLDHAWK ROAD
ADDISON ROAD
HIGH STREET KENSINGTON
KNIGHTSBRIDGE
BROMPTON ROAD
ST JAMES PARK
LAMBETH (NORTH)
NORTHFIELDS
TURNHAM GREEN
RAVENSCOURT PARK
BARONS COURT
EARLS COURT
GLOUCESTER ROAD
VICTORIA
CHISWICK PARK
STAMFORD BROOK
DUNNERSBURY
HAMMERSMITH
WEST KENSINGTON
SOUTH KENSINGTON
SLOANE SQUARE
WEST BROMPTON
KEW GARDENS
WALHAM GREEN
PARSONS GREEN
PUTNEY BRIDGE
EAST PUTNEY
SOUTHFIELDS
WIMBLEDON PARK
WIMBLEDON
RICHMOND
RIVER THAMES
REFERENCE
District Railway
London Electric Railway
Bakerloo Line
Piccadilly Line
Hampstead and Highgate Line
City and South London Rly.
Central London Railway
Metropolitan Railway
Metropolitan Railway (Great Northern and City Sections)
Interchange Stations


REFERENCE
DISTRICT RAILWAY
BAKERLOO LINE
PICCADILLY LINE
EDGWARE-HIGHGATE & MORDEN LINE
CENTRAL LONDON RLY
METROPOLITAN RLY.
METROPOLITAN RLY.
EAST LONDON RAILWAY
INTERCHANGE STATIONS
UNDER CONSTRUCTION
H. C. BECK
UNDERGROUND
OPEN MIDSUMMER 1935
WATFORD
RICKMANSWORTH
CROXLEY GREEN
MOOR PARK & SANDY LODGE
NORTHWOOD
PINNER
WATFORD JUNCTION
WATFORD (HIGH STREET)
BUSHEY AND OXHEY
CARPENDERS PARK
HATCH END for PINNER
HEADSTONE LANE
HARROW & WEALDSTONE
KENTON
STANMORE
CANONS PARK
KINGSBURY
NEASDEN
DOLLIS HILL
WILLESDEN GREEN
KILBURN & BROONDESBURY
WEST HAMPSTEAD
FINCHLEY ROAD
SWISS COTTAGE
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ARSENAL
COCKFOSTERS
ENFIELD WEST
SOUTHGATE
ARNOS GROVE
BOUNDS GREEN
WOOD GREEN
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MONUMENT
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ALDGATE EAST
MARK LANE
SHOREDITCH
STEPNEY GREEN
MILE END
WHITECHAPEL
ST MARYS
SHADWELL
WAPPING
ROTHERHITHE
SURREY DOCKS
NEW CROSS GATE
NEW CROSS
UXBRIDGE
ICKENHAM
RUISLIP MANOR
RAYNERS LANE
HILLINGDON
RUISLIP
EASTCOTE
WEST HARROW
SOUTH HARROW
SUDBURY HILL
SUDBURY TOWN
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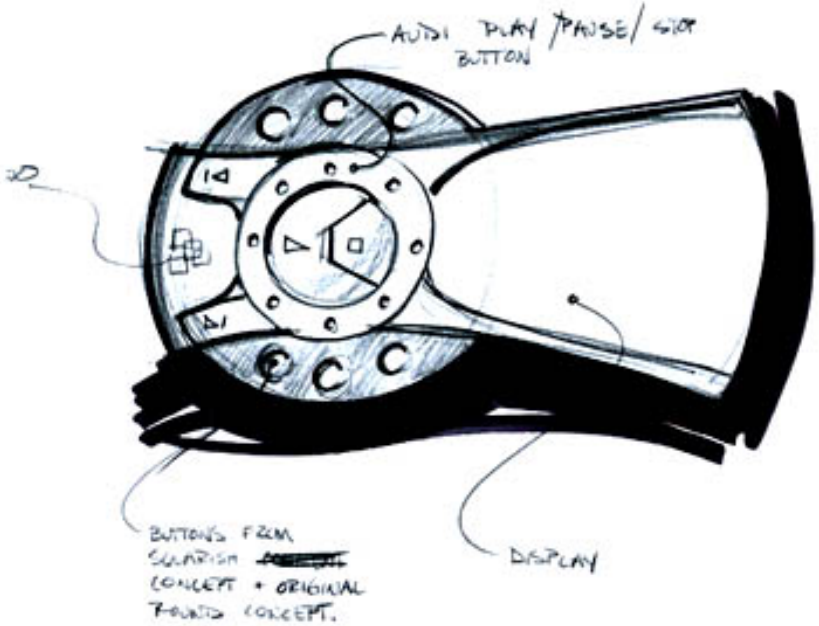
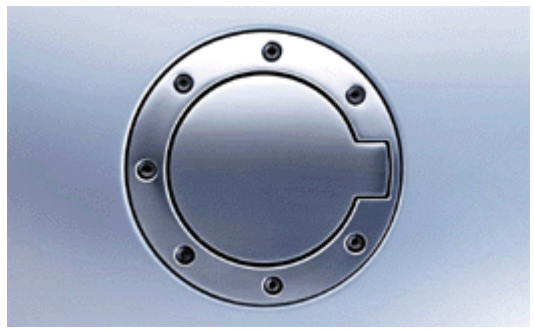
COLLIERS WOOD
SOUTH WIMBLEDON (MERTON)
MORDEN

Analogy - Metaphor

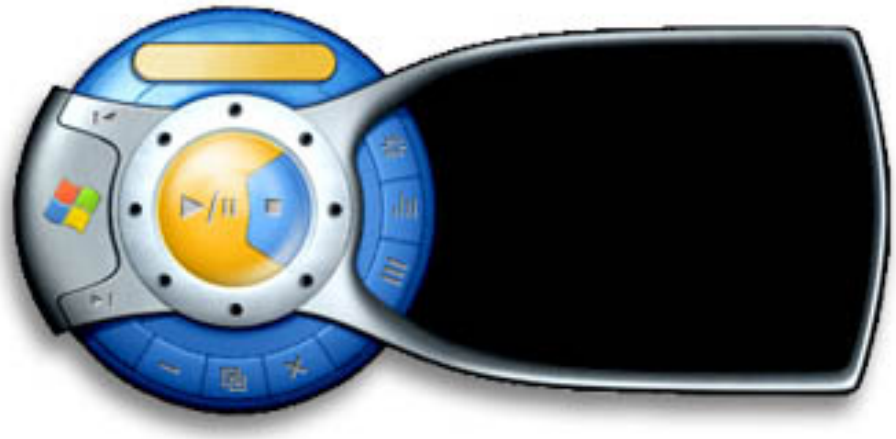
- Finding analogies or metaphors
  - A thing that reminds us of something else (but different), we see the similarities
    - Camera - eye
- Select something random, and compare different attributes to find analogies
  - A book has a protecting cover, like a car has a body

Audi TT vs. Media player

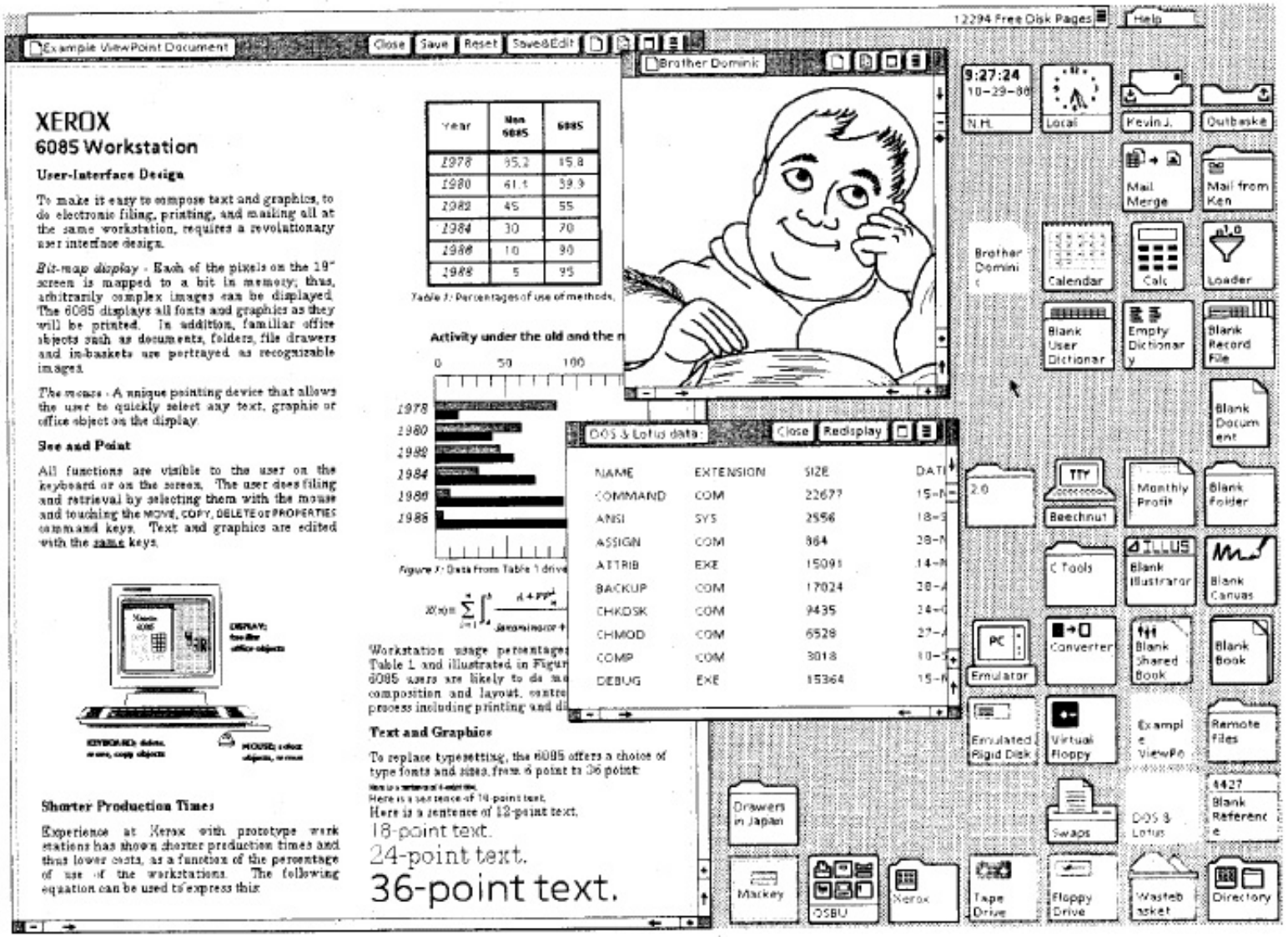




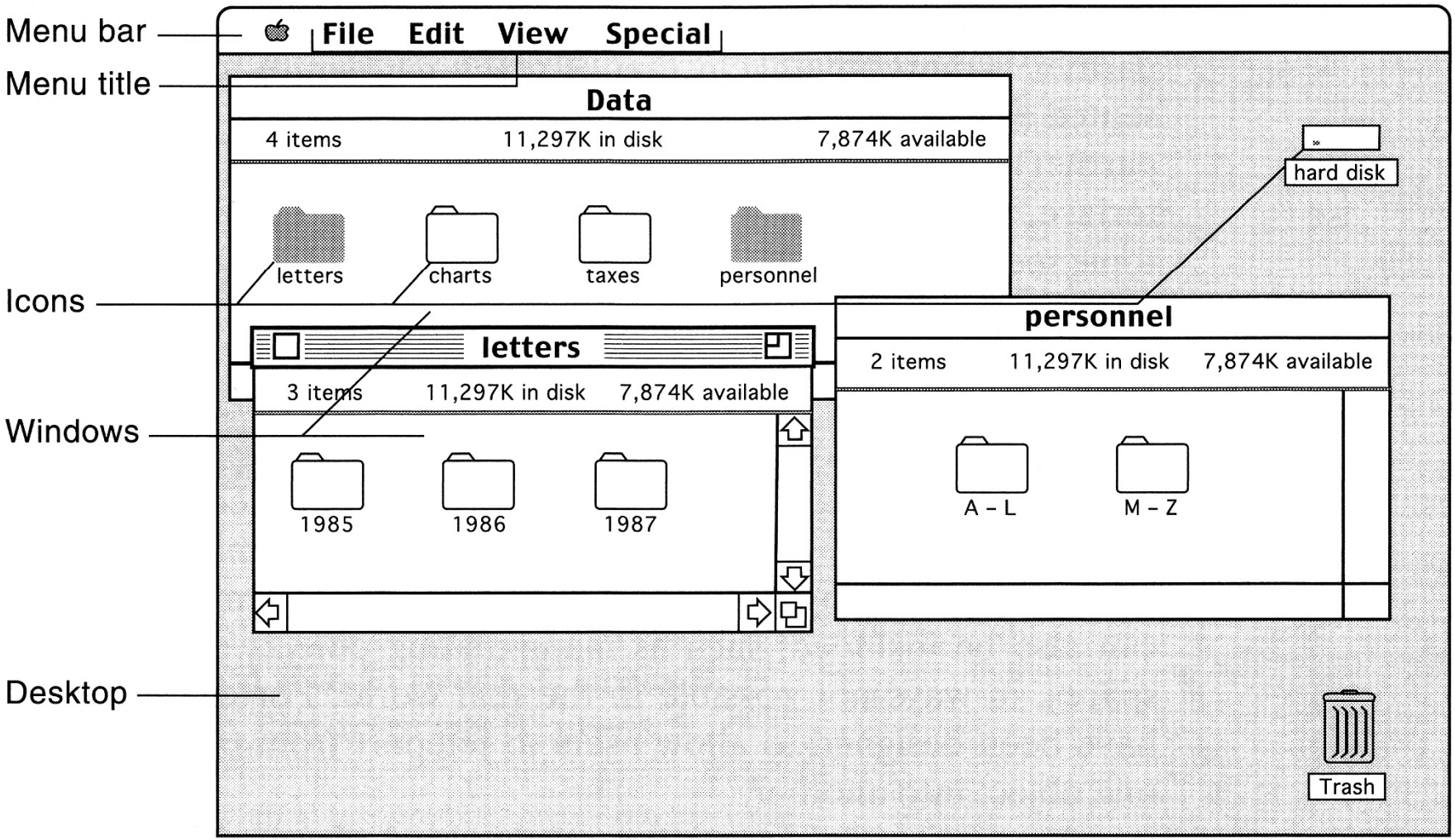
Screen dump



Xerox Star, 1981

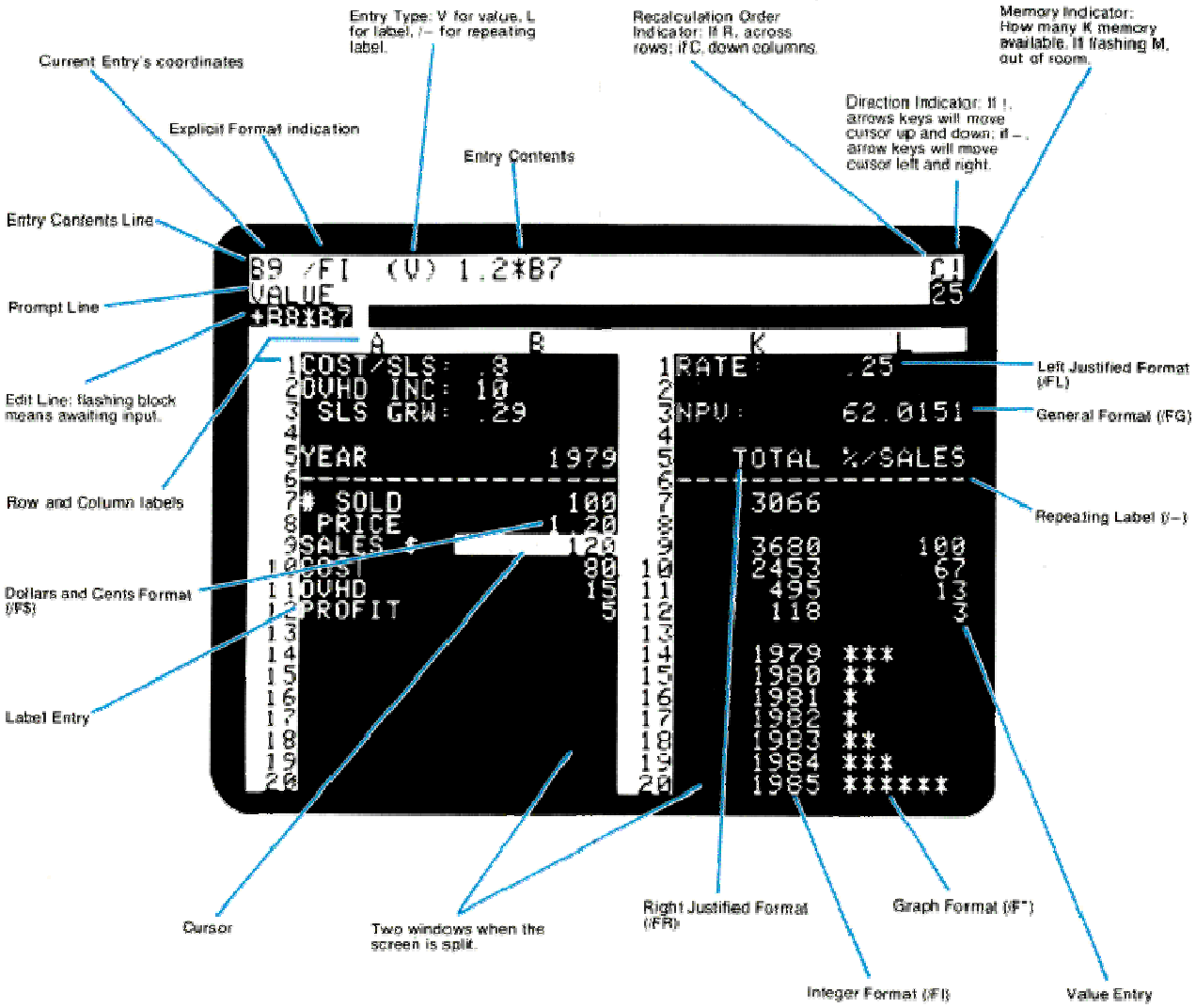


Desktop metaphor – the original 1983

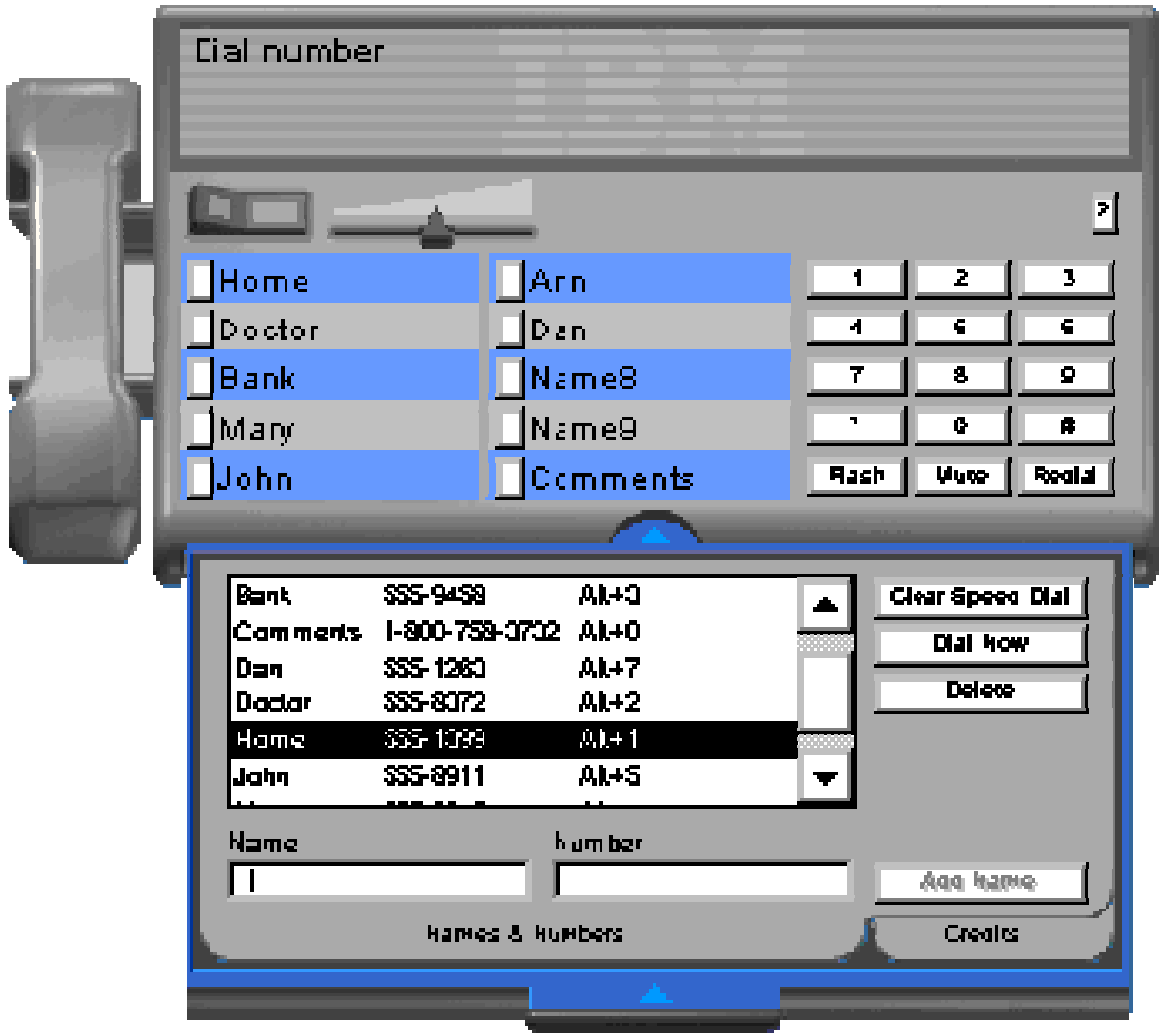


1979

A VISICALC™ Screen:

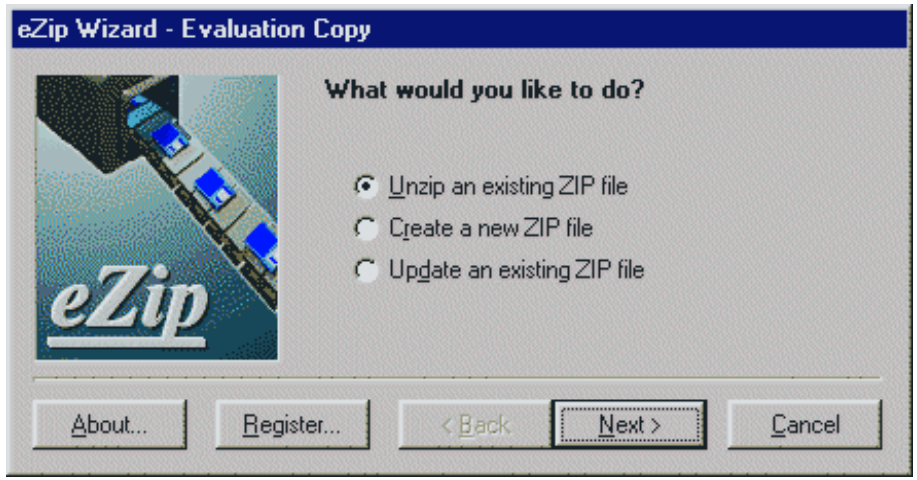


RealPhone


Dial number
Home
Doctor
Bank
Mary
John
Ann
Dan
Name8
Name9
Comments
1
2
3
4
5
6
7
8
9
*
0
#
Flash
Mute
Redial
Bank 555-9458 Alt+3
Comments 1-800-758-3722 Alt+0
Dan 555-1263 Alt+7
Doctor 555-8372 Alt+2
Home 555-1399 Alt+1
John 555-8911 Alt+5
Clear Speed Dial
Dial Now
Delete
Name
Number
Add Name
Names & Numbers
Create

Wizard

- Does this confuse help with helpful?



Reduce the conditions

- What if…
- A successful way to generate ideas is to display the assumptions/limits of a certain problem, and then examine what will happen if you change/remove these assumptions
  - What if software was free?
  - What if gravity didn’t exist for one minute each day?
- Extrapolate
  - Will it compress? Can we make it larger?
  - Can it melt? Will it freeze?
    - Eric Drexler - nano

Change old patterns

- View the normal as strange, and the opposite
- Try out something new, walking in a new route, talking to strangers
- Combine two completely different ideas
- Do the unexpected

Bodystorm

http://www.slideshare.net/whatidiscover/method-cards

Use randomization

- Use random words and ideas
  - Cards with images and pictures
  - On-line generators for words
- Important to use the first word/association one gets
  - Then, in a second step, refine and find new associations

Use the right side of the brain

- The left part is language-based, resulting in a certain type of activity
- To use the right side may bring new answers
  - Silent creation, images, pictures, collage

Collaging

1. Paper + magazines + glue
2. Creating Collages with Picasa
   - http://www.computorcompanion.com/LPMArticle.asp?ID=227

Ask questions

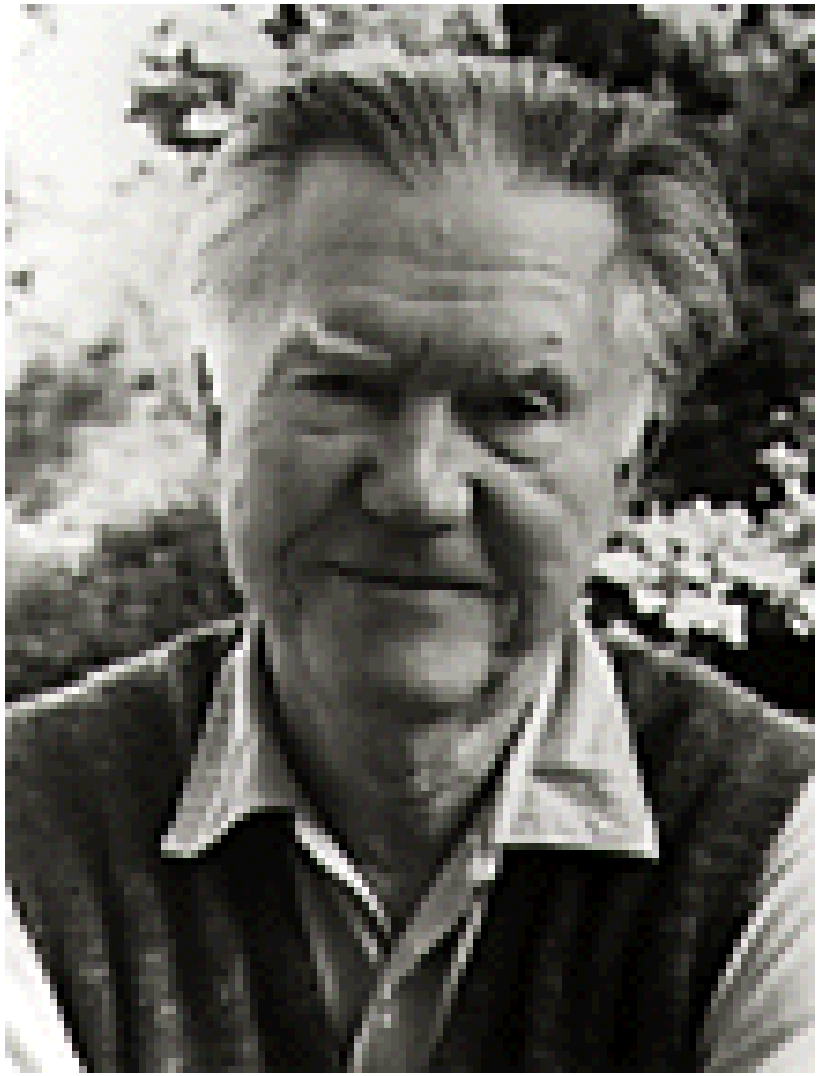
- A formal scientific deduction and a creative game
- Find causes and contexts
  - Why?
  - What?
  - Where?
  - When?
  - How?
  - Who?

Questions…

- Why do so many die in traffic accidents?
  - Because people do not watch out.
- Why do people not watch out?
  - They are not used to observe their surroundings, and they get easily distracted.
- Why do people not observe their surroundings?
  - The modern society does not premiere or teach observation, but rather abstraction.
- Why is the skill of observation not taught?
  - It might be more difficult to teach observation than to give the students abstract (more easily corrected) tasks.
- Why is observation skill difficult to teach?
  - Because it differs from the traditional school, and no-one has invented any good exercises.

- Conclusion: If we can find simple and good exercises for practicing observation skills, then we might reduce the number of car accidents.

Lower your standards



- William Stafford
  - Poem-a-day
  - Writers block
  - Training
- Less harmful critique

Brain storming

- Stimulates creative thinking in groups.
- Other's ideas used to find own ideas
- Moderator – presents the problem and make sure the rules are followed
  - Positive thinking
  - Interruptions not allowed
  - Never criticize other's ideas
  - Select the good ideas only afterwards
  - Document
- http://www.scottberkun.com/essays/34-how-to-run-a-brainstorming-meeting/

Notes on brainstorming

- All ideas should be documented
- No premature critique
  - http://www.scottberkun.com/essays/35-how-to-give-and-receive-criticism/
- The tools used must be as efficient as the process, meaning simple tools appropriate
- Practice needed

- Learn to…
  - Use things already there: the room, etc.
  - Change perspective, force yourself to use the method
  - Tools

Weekly assignment

- Yes. See course homepage later today.

Exercise

- Find a design solution for a computer firewall
  - Some traffic is allowed to enter, some is not
    - We need to be able to configure this
  - We want to be sure it is working