

SYSTEMS IN DESIGN
SPRING 1991
TRO GU

PROJECT # 1

ANALYSIS OF EXISTING SYSTEM.

DUE: MIDTERM

PROJECT # 2

CREATION OF INFORMATION TOOLS WHICH EMPLOY SYSTEMS.
TOOLS WHICH CAN BE USED TO UNDERSTAND THE RELATIONSHIP
BETWEEN MAN AND HIS ENVIRONMENT.

DUE: END OF SEMESTER

NOTE: PROJECT 2 COULD INCLUDE NEW INFORMATION,
NEW REPRESENTATION SYSTEMS
NEW GRAPHIC & DISPLAY SYSTEMS

SCHEDULE FOR FINAL PRESENTATIONS

CRITIQUE : APRIL 25 (THURSDAY)

MEETINGS : THURSDAY MAY 2 (PM)

PROJECT DUE
AM FINAL EXAM : THURSDAY MAY 9 8-11 AM

SYSTEMS

INDIVIDUAL PRESENTATIONS - TUESDAY

FEB

19

26

3.15 - 4.15

HOLLY ECO SYSTEM

(develop more)

4.30 - 5.30

MICHAEL BYCICLE

(develop more into
a system)

MARCH

5

3.15 - 4.15

JANNINE

TYPES OF ENERGY

(change direction)

4.30 - 5.30

ALEX

RAIN FOREST

(no animals)

19

3.15 - 4.15

RAMA

CHANCE

4.30 - 5.30

LAURA

FIBONACCI

26

3.15 - 4.15

LISA

THEATRE / CHILDREN

4.30 - 5.30

PETER

GAMES

APRIL

2

3.15 - 4.15

DAVE

ENTROPY

4.30 - 5.30

SUSAN

ECOSYSTEM

APRIL 4

9

3.15 - 4.15

PAIGE

CRYSTALS

4.30 - 5.30

TODD

DEFORESTATION

16

3.15 - 4.15

SHAWN

EXTER

4.30 - 5.30

JOE

GANDI

GOAL: as designers

problem of the LANGUAGE

When we are involved in a technique and its language specific language (or lingo), we behave as specialists, we become incapable of perceiving more general structures, or we do it in very specific terms.

A musician trying to explain his music will do so in musical terms and therefore it will be incomprehensible to the listener who is not familiar with such language.

All technical languages produce such a displacement and misunderstanding, it is an everyday experience.

Klee is different. He doesn't use a special vocabulary but a current ~~or~~ vocabulary rather

His examples are ~~so~~ so general and basically simple that it is possible to gain an insight which is applicable to any other technique.

→ Klee does two things:

- 1) he ^{brings} reduces the elements of any language to their basic principle, that is; whatever the complexity of the language (SYSTEM), find out the basic principle and break it down to very simple principles.

2) ~~she~~ he shuns the force of destruction.

~~Start or~~ While ^{Begin} starting with a single subject but gain multiple, and prolific patterns. It is absolutely insufficient to be content with a single solution, one must search for a cascade, a tree of patterns.

Boulez or Klee

system

2

- a group, more or less complex, of various elements connected together
- elements are view together with the relations which connect the elements themselves
- ↓
- a structure emerges

FOOTBALL TEAM (system)

every player influences the game and every action is reflected upon the team

- The more the elements
the more a system

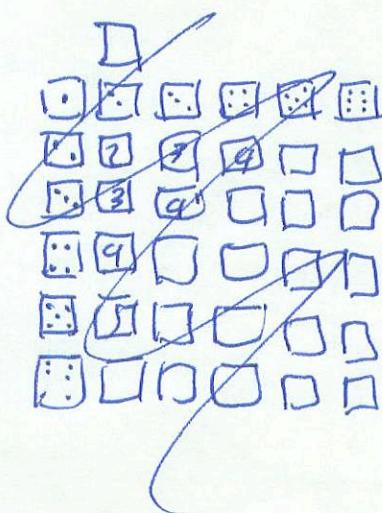
1 dice = no system

2 dice = system

→ games, systems based
on rules and
chance, which
become predictable
upon repetition

1 dice → chance

2 dice → probability (look at the
relation of the two)



1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

- The elements which make up a system can also be systems (subsystems)
- The structure of the relationships between the subsystems is of hierarchical type

→ see typography



chinese
dolls
effect

- in system, hierarchy does not necessarily mean a piramidal structure (government, military)

example : Konrad Lorenz , zoology, imprinting :

wild geese
hierarchical structure

(learning process
in first few
hours of life)

Male geese A, B, C,

A dominates B ($A > B$) (B shows respect to A)



$B > C$

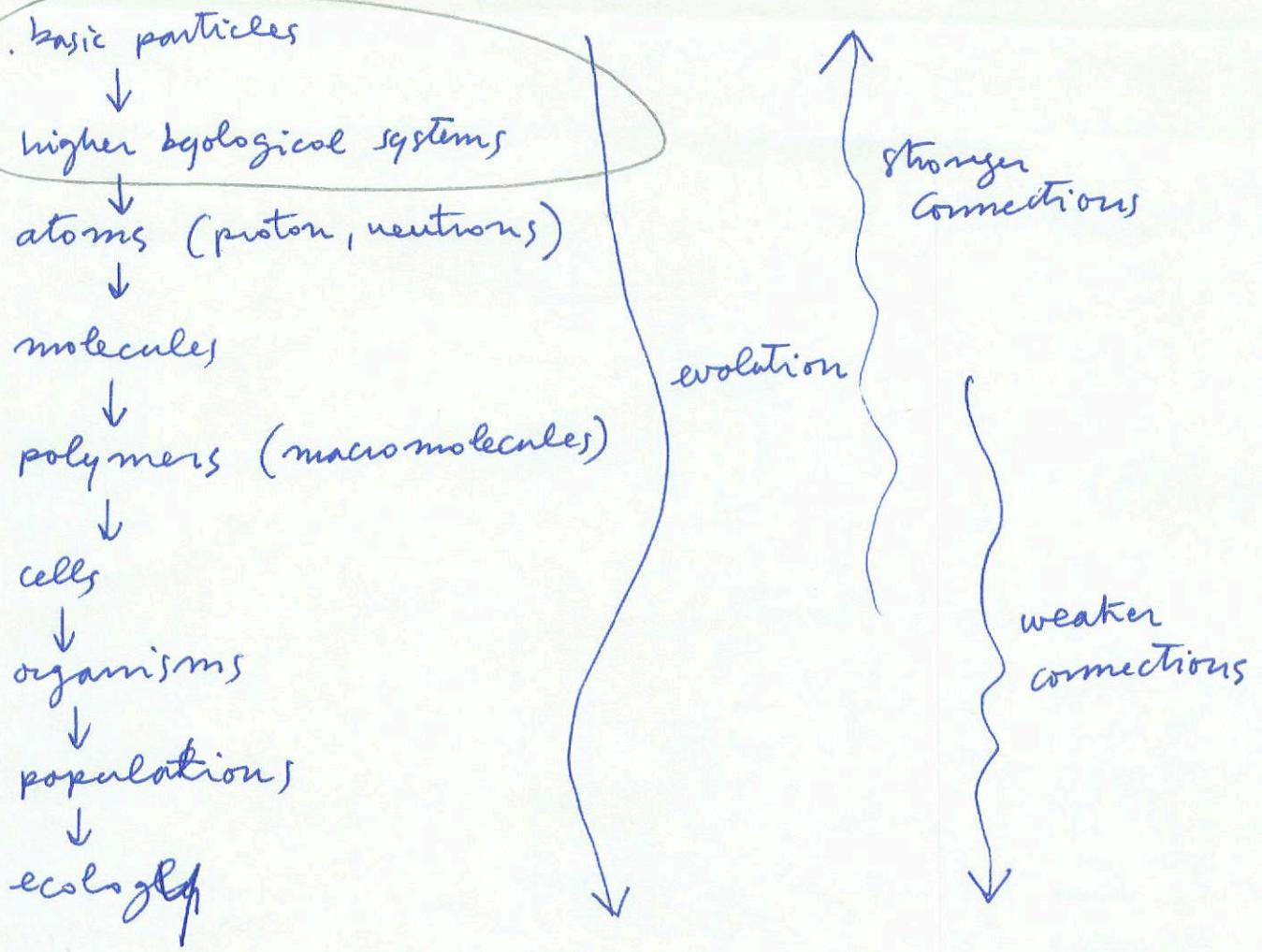
naturally $A > C$

suddenly $C > A$ (private affair)

Therefore



EVOLUTION OF THE SYSTEM



a system may be less complex than its subsystems (football team.)

more evolved systems are more organized and less complex (nature)

in design :

simple → complex

complex → simple

Subject matter

(7)

environment (at large)

The environment seen not as a "thing", but as a system made up of processes.

These processes are connected and in a state of complex and delicate balance.

are

The environment is both "natural" and "artificial".

corporate identification (system of recognition)
↓
learning?

issue identification (go beyond the newsatio effect)

analys.) of abstract concept) (environment)
(rules of the game)

- | | |
|----------------------------|--------------------------------|
| 1 cooperation | 8 evolution (natural/cultural) |
| 2 competition | 9 multiplication |
| 3 cycle | 10 selection (natural) |
| 4 entropy | 11 chance |
| 5 matter * (see page 8) | 12 energy |
| 6 game theory | 13 organization (hierarchy) |
| 7 hierarchy (organization) | 14 ecosystem |

written research and identification of systems or subsystems within areas. or a system which works in an analogous way to one in your area.

diagram relationships within the chosen system

Develop your own system based on:

your research

" word

" interest

need

graphic excellence

misleading or little understood phenomena:

invisible processes

example

➡➡➡ Visual materials can be supplemented

Keep in mind when selecting

a system (for research only):

- SEASONS

- OZONE

- maps + diagrams

connection

relationship

group

set

hierarchy

organization

structure*

*Piaget

- wholeness
- transformation
- self-regulation

*explanation for some of the words

MATTER (law of conservation of matter)

transformation and its qualitative aspects

ENERGY - ENTROPY \rightarrow irreversibility.

COMPETITION

CYCLE

↓
repeat itself

wolfs + sheep
rabbits,

TYPOLOGY
RELATIONSHIP
PATTERN
STRUCTURE
FLEXIBLE/CLOSED
ORDER/DISORDER (entropy)
SCALE (see powers of ten)
CELL/MODULE

system : to put together
(method)

FRANÇOIS JACOB:

The possible and
the actual

STRUCTURAL SEQUENCE (two- and THREE-DIMENSIONAL MODELS)

HIERARCHY

CRYSTAL

DIVERSIFICATION
MODULATION
COORDINATION

- examples :
- letterform to logotype
 - grid system
 - graphic element to trademark

examples : corporate identity
signage
package

Sgn

Sgn

SYN (greek for WITH)

prefix meaning with, along with, at the same time

SYNTHESIZE
SYNTHESIS

concurrent
associated
like

SYNESTHESIA
SYNORTY

SYN → SYM p, b, m
SYN → SYL l

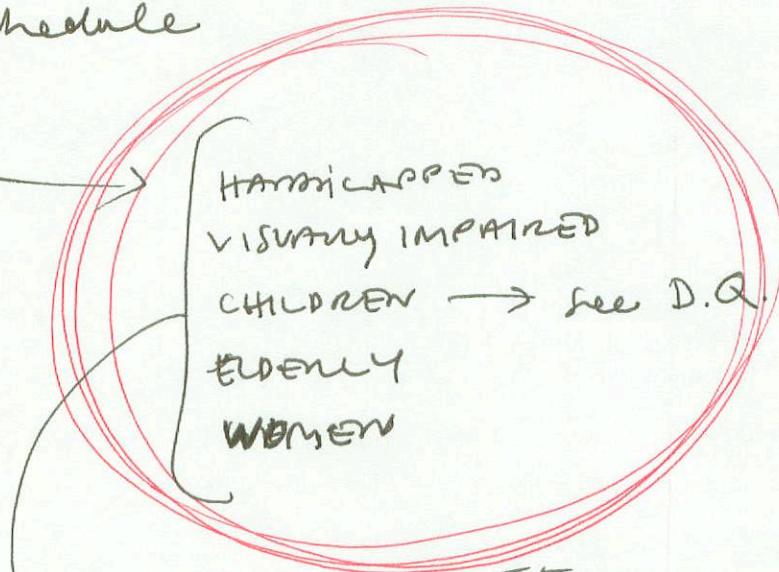
DIAGRAM NOTATION

2-3-D SYSTEMS →

MINIMUM INVENTORY
MAXIMUM DIVERSITY (TANGRAM)

JOURNAL

organization of information
setting up schedule
objectives
audience



broadening constituency

see PAPANIK

and his mother —

parallel process

1 the design itself

2 the documentation :

sketches
bibliography
notes
diagrams

• cooperation :

↑ collaboration,
reciprocal gain

natural evolution is
based on competition

one species is ~~at~~ capable, through
language, design and foresight
to agree on ~~a~~ similar behaviors.
Its development is therefore
based on cooperation -

• competition :

↓ typical characteristic of biological evolution
↑ whereby a conflict between individuals in
order to occupy a specific habitat, is resolved
in the dominance of the best-fitted to do
so.

A continuous and dynamic competition,
applied to the evolution of species, produces
the so called natural selection

• cycle a chain of processes, which, once
completed, have the property of
restabilizing the initial conditions
and start all over again.

Cycles are the necessary condition for
the dynamic ~~exp~~balance in both
living and inorganic systems

There must be an element in the cycle
which connects all the elements together.

Such element can be called the
"vehicle" of the cycle.

Entropy

tendency to a greater
disorganization of matter,
energy or information

GAMES

a situation which is in a
balance between chance and
rules (choice)

a combination (dice) is more
significant than the single event
because it is based on a relationship
of elements.

in natural phenomena, a
relation is always a constructive
element.

The visual field and the system of variables ⁱⁿ which ~~the~~ information can be communicated.
within codified and

The 7 components (subsystems) of an image ~~fit~~ within
the system of space : (DRAW DIAGRAM)

The 7 components can be combined to various degrees, depending on their properties in regards to perception :

The ability to connect and combine can be ~~done~~ of four types :

- = associative
- ≠ selective
- o ordered
- q quantitative

SHOW COLOR EXAMPLE

in regards to representation

geometric systems parallel (AXONOMETRIC)
convergent (PERSPECTIVE)

show scarpa

simple to complex

Class structure

(6)

strong independent, interdisciplinary research project/s should be interrelated

Journal

presentations to classmates (\pm class period)

formats : open poster
book
booklet

list in your journal your personal interests,
your research, your bibliography

(a possible project could be a classification
system for the works produced in class)

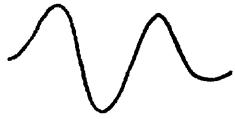
VISUAL ELEMENTS OF THE TIME SET

1 FLUCTUATE - FLUCTUATION

TO VARY IRREGULARLY, TO WAVER,
VACILLATE, TO RISE AND FALL LIKE WAVES
UNDULATE

SYN. SWING

FROM fluere : to flow



2 INTERMITTENCE - INTERMITTENT

STOPPING AND STARTING AT INTERVALS

SYN. PERIODIC

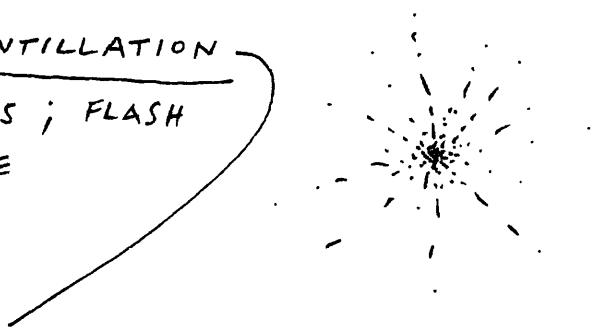


OR (— · — · —)

3 SCINTILLATE - SCINTILLATION

TO THROW OFF SPARKS ; FLASH

TO SPARKLE OR SHINE



• ASTRONOMY :

RAPID VARIATION IN THE LIGHT OF
A CELESTIAL BODY CAUSED BY TURBULENCE
IN THE EARTH'S ATMOSPHERE;
A TWINKLING

• PHYSICS :

A FLASH OF LIGHT (EJECTION OF ELECTRONS)
PRODUCED IN CERTAIN MEDIA BY ABSORPTION
OF AN IONIZING PARTICLE OR PHOTON

4 MOVEMENT