48-747 Shape Grammars

Introductory Lecture

LIFE AS A GRAMMARIST or

A CONSTRUCTIVE INQUIRY INTO SHAPES

Constructive Aspects

Generative Process/System

Algorithmic/Computational Systems

in this **course** we look at

Design   Models

Description   Algebra

Procedure   Arithmetic

Grammar   Shape algorithms

Style   Implementation

Paradigm   Grammar systems

Transformation

Emergence   Weights

Continuity   Sortal structures

some **key ideas** that we will touch upon in the context of grammars

life as a grammarist

the study of form as a **central enterprise**

a study of form that presupposes
a set of basic tools for *formal* composition

a study of form that depends
on *formal* elements and a system of rules
in the widest sense possible

being a **grammarist**

objects have **form**

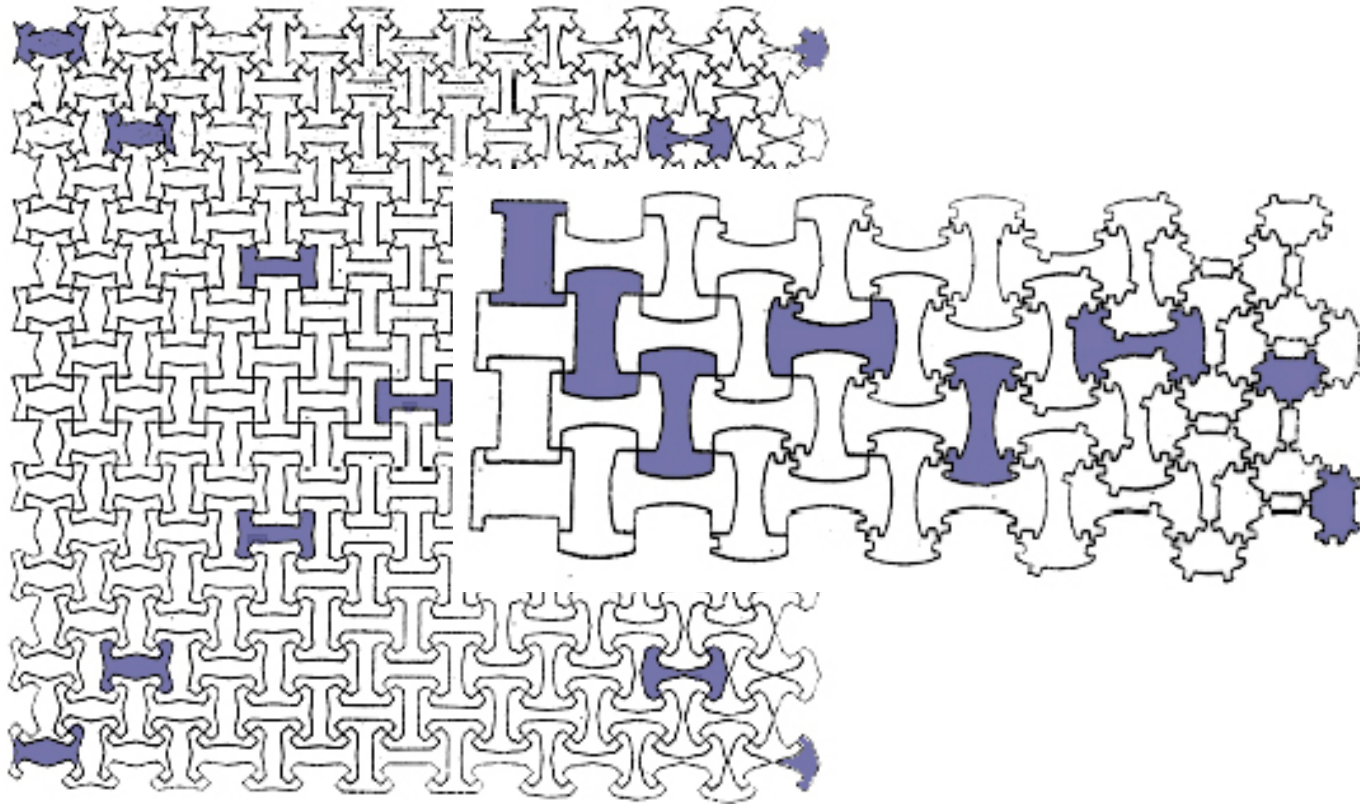space has **form**

technology has **form**

culture has **form**

communities, societies, environments, maps and mappings –
worlds and entities, in general, all have **form**

a **grammarist** is **natural** to any world that we inhabit or interact in
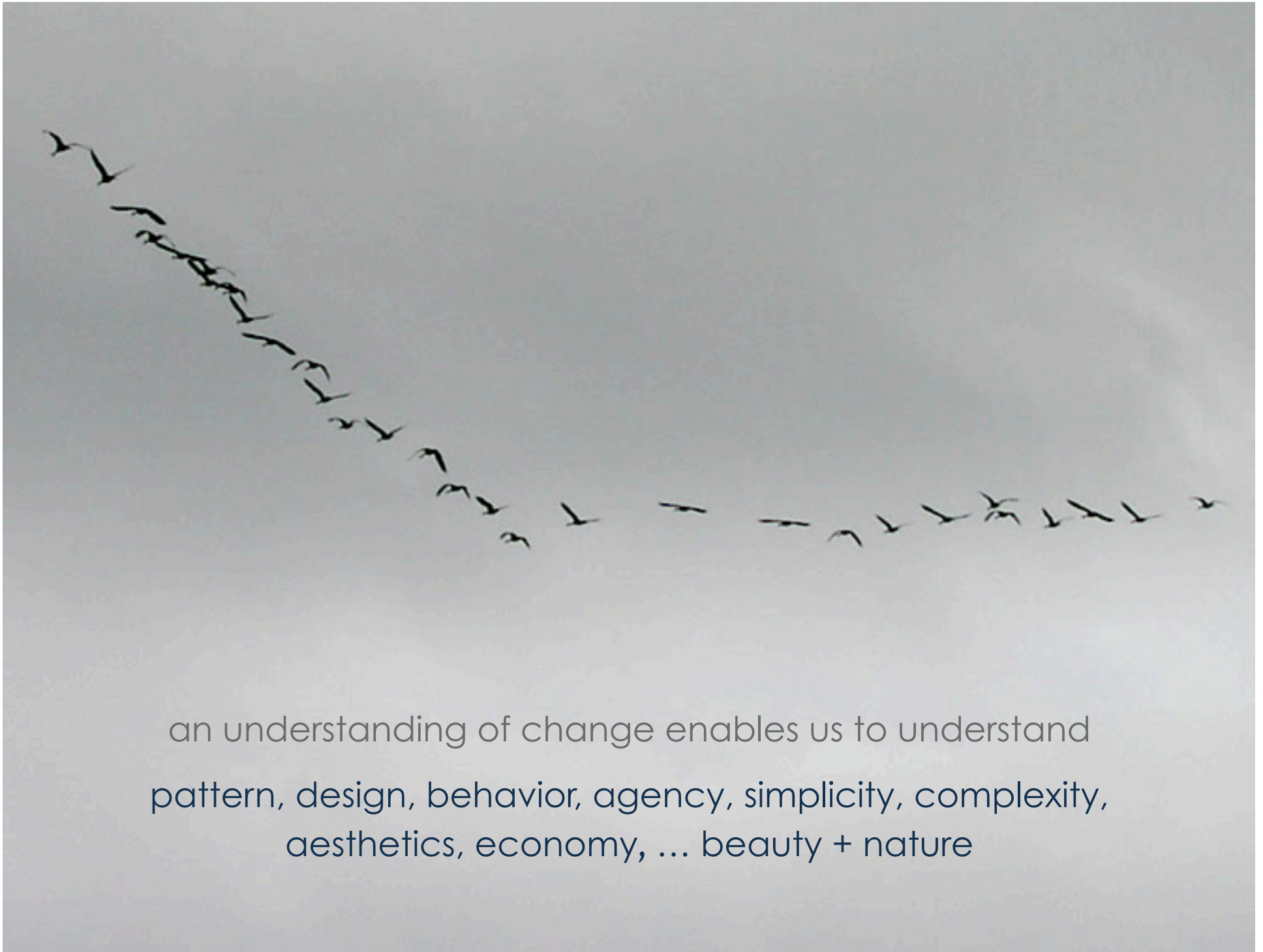
is a study of **change**

entities, ideas, designs, environments etc can be
characterized - constructively - by a sequence of change
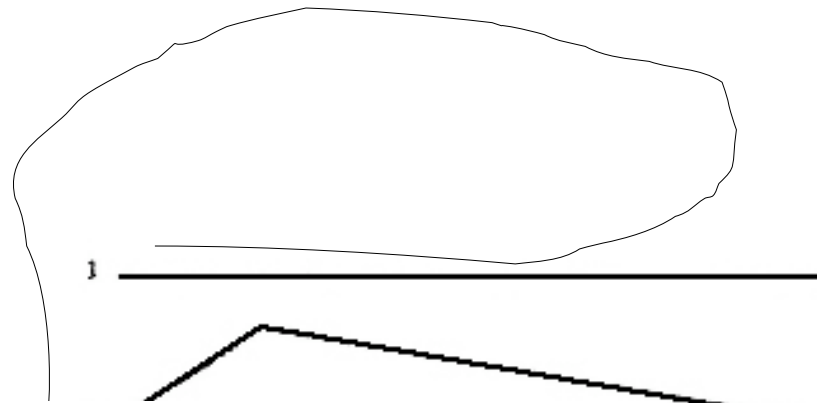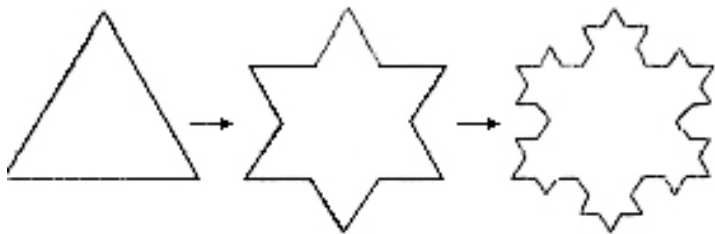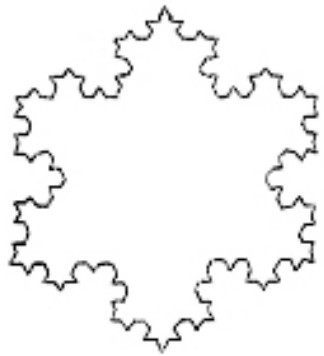— in particular, localised **change**

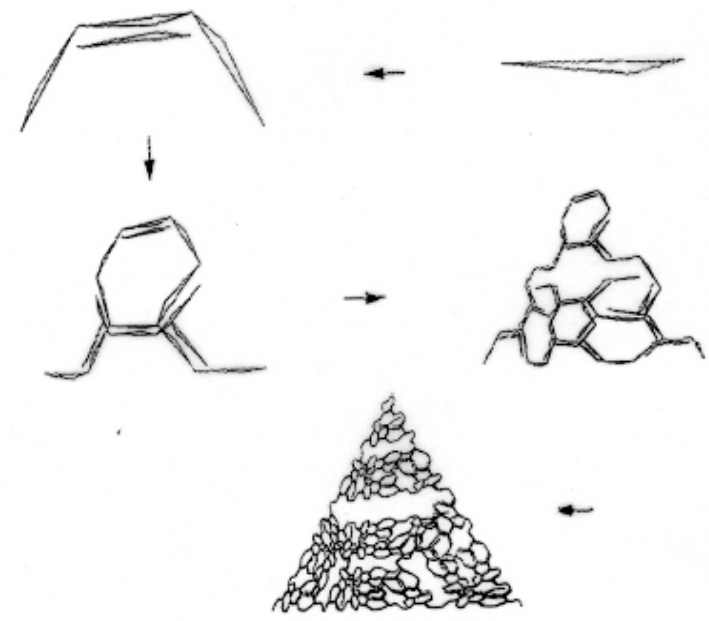**the study of form**   – a single dominant idea
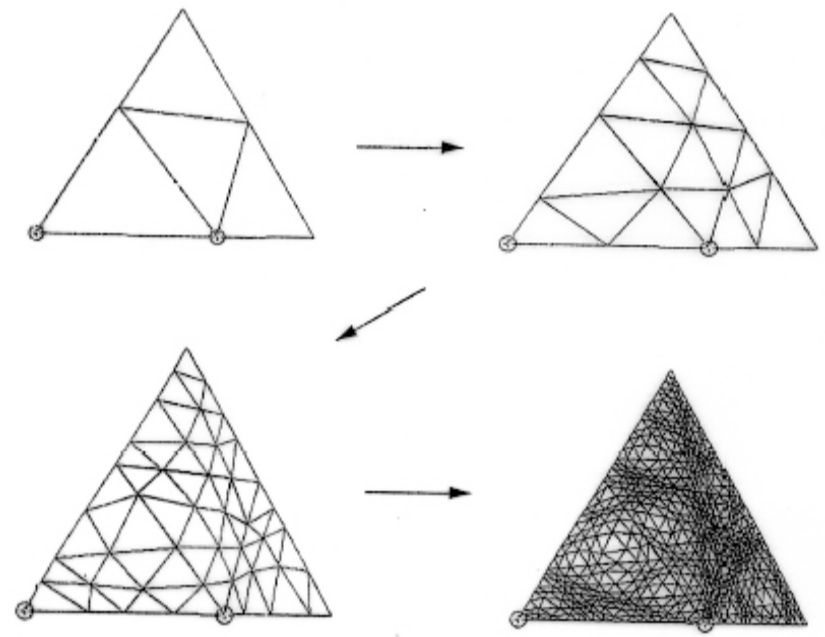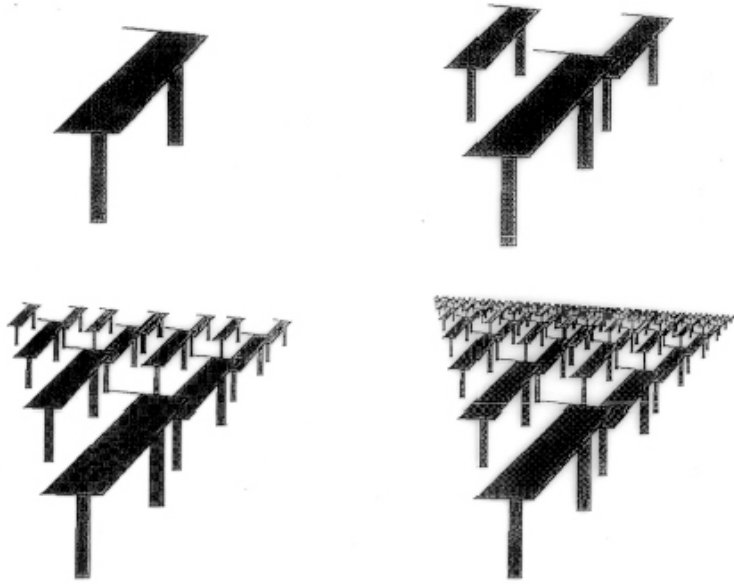
change

an understanding of change enables us to understand

pattern, design, behavior, agency, simplicity, complexity, aesthetics, economy, ... beauty + nature
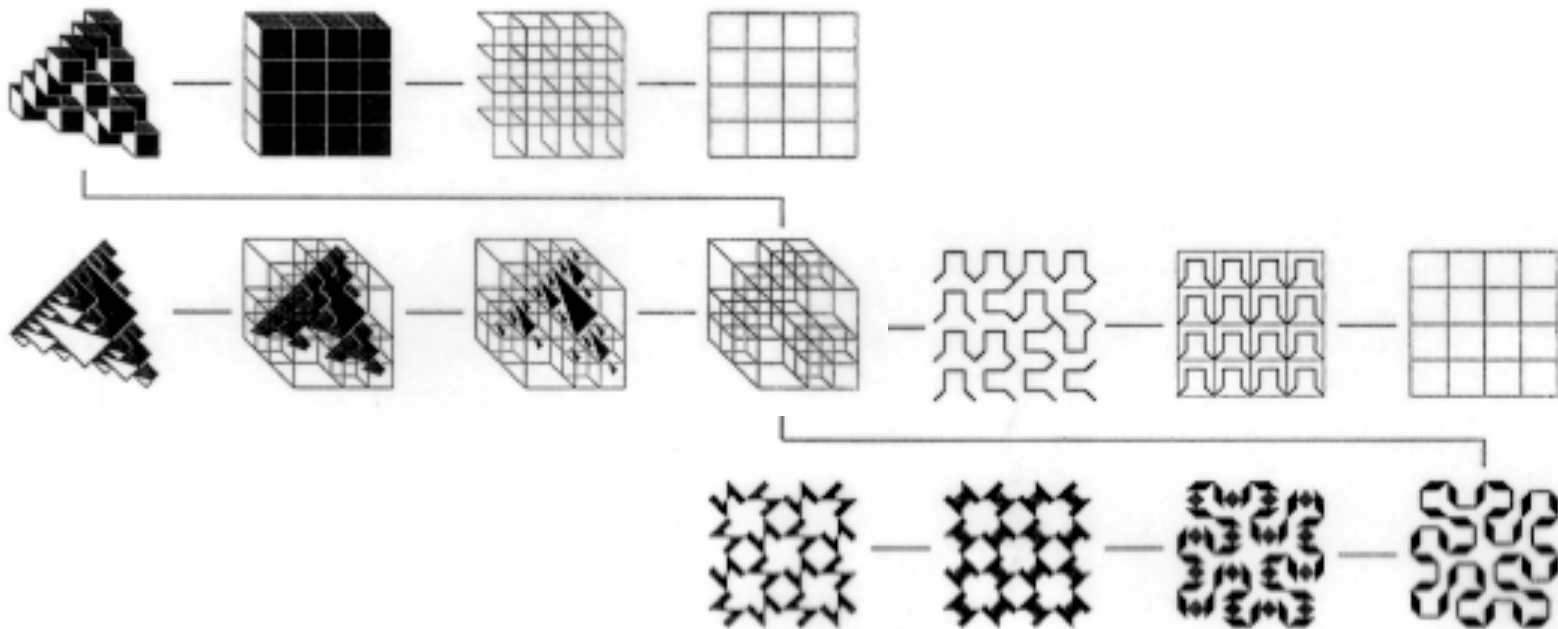
expressions of change

1

3

4

5

6

snowflakes and coastlines

change is expressed

using self-similar forms

expressing change

radically different forms **may be related**
by similar kinds of changes

more on change

computation and **architecture/design**

are not alien to one another

change is computation

Abb. 3. Erechtheion in Athen

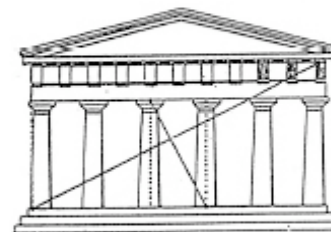Abb. 1. Zeustempel in Olympia

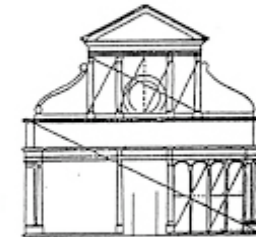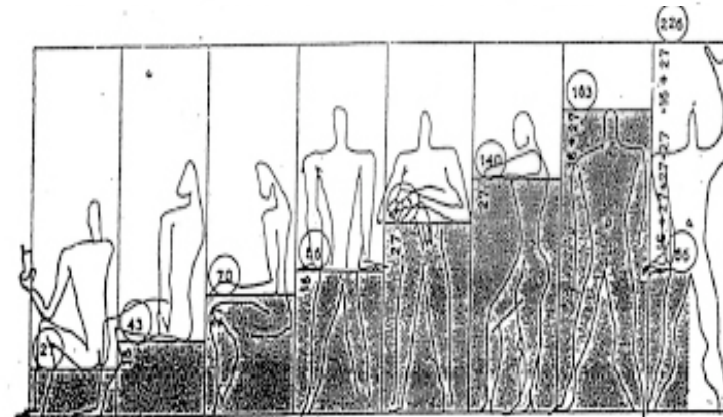Abb. 4. Erechtheion in Athen, Nordfront
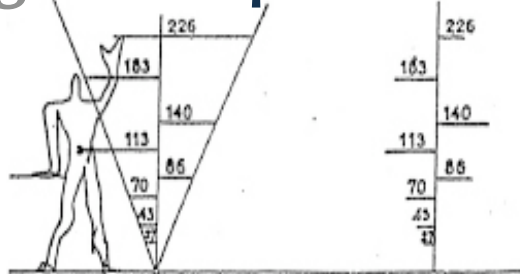
Abb. 2. Athene-Tempel auf Aegina

Abb. 5. Santa Maria novella in Florenz

"the search for rigorous formulation in **design** has a much more serious motivation than mere concern for logical niceties or the desire to purify well-established methods for **design** analysis

precisely constructed models for **design** structure can play an important role, both negative and positive, in the process of discovery itself

by pushing a precise but inadequate formulation to an unacceptable conclusion, we can often expose the exact source of this inadequacy and, consequently, gain a deeper understanding of the **design** data"

inspiration – **noam chomsky**

go to some grammar examples