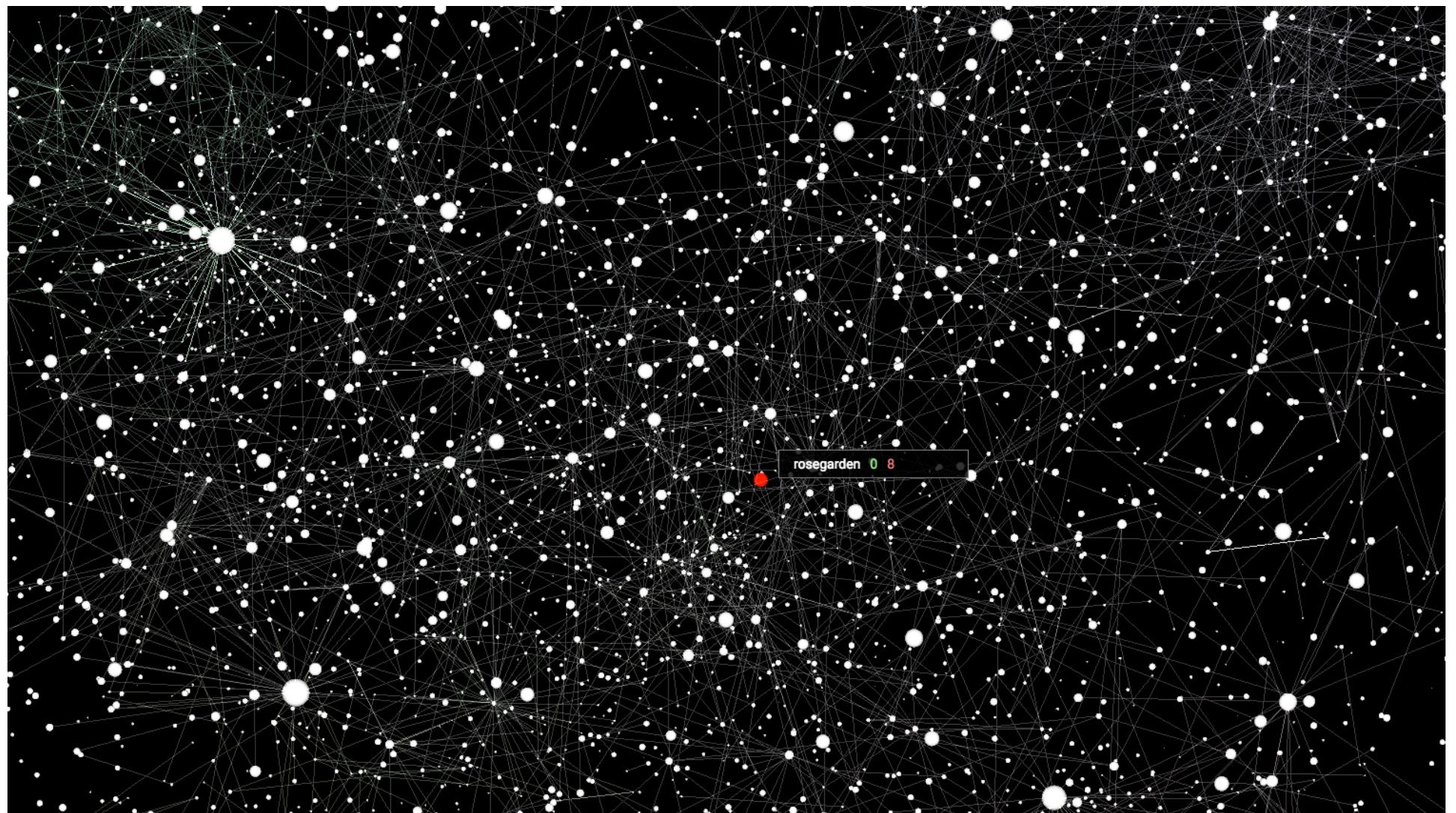


# Design / Visual Language Basics



## Function of Design

- Coherence, Clarity, Communication
- **Visual Identity:** Gives an overall identity, a **branding** through formal design choices (form, color, font, etc.)
- **Rule-based process to structure** information
- Good Design aims to be **invisible!** Does not take over content that it represents

## Visualization is Culture Specific

- **Scientific visualization** deals with data that has a natural geometric structure (e.g., MRI data, wind flows)
- **Information visualization** handles abstract data structures such as trees or graph
- **Graphic Design:** Emphasis on the aesthetics and language of visual form
- **Visual (Culture) Analytics:** Science of analytical reasoning through visual interfaces

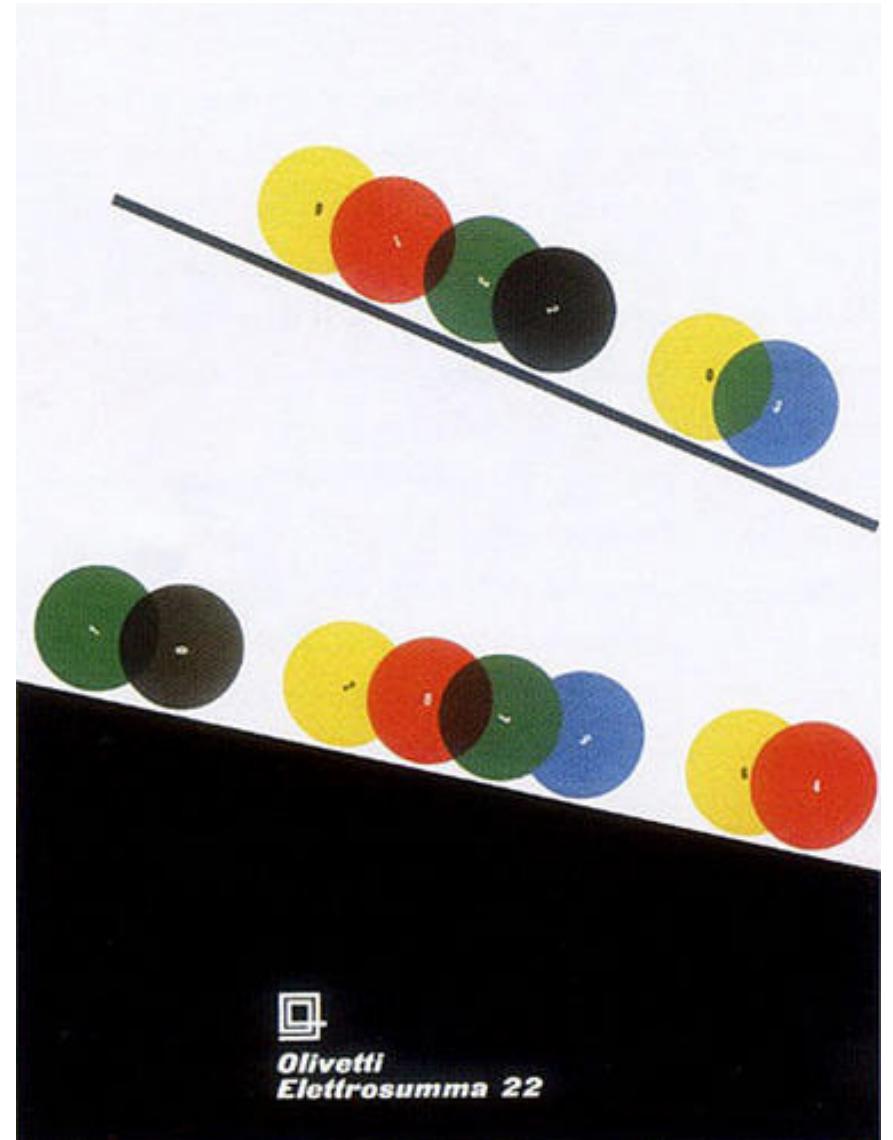
# Design Fundamentals

- How to organize space
- How to organize elements within a space
- What fonts to use
- What color relationships to use

## Swiss Graphic Design

- Developed for Swiss Industries in 1950s after WWII
- USA corporate visual identity in 1960's (IBM, etc.), then computer (Microsoft, Apple)
- **Qualities:** Simplicity, legibility, objectivity
- **Goal:** To represent information in its pure form
- **Major contributions of Swiss Design:**
  - **Grid System** (Josef Müller-Brockmann)
  - **Typography** (Frutiger, Tschichold)
  - **Experimentation** in organizing visual elements

# Swiss Graphic Design (1950s-1970s)



# MAT 259 Visualizing Information



Swiss Graphic Design:  
The Origins and Growth  
of an International Style  
1920–1965

A presentation by Richard Hollis  
followed by a discussion with  
Derek Birdsall, Ruedi Rüegg,  
Richard Smith and Cornel Windlin,  
supported by us.  
at Central Saint Martins,  
Cochrane Theatre,  
Southampton Row, London,  
5.30pm, 16 May 2006

# Swiss Graphic Design Impact (Apple)



# Typography

## Swiss Graphic Design Fonts:

- Sans Serif: Arial, Futura, Helvetica, Univers, etc.
- Serif: Times New Roman

## Usage Recommendations:

- Left-Aligned
- Italics only for titles or highlighting

## **Recommended Swiss Graphic Fonts**

Arial typeface

Helvetica typeface

Helvetica Neue typeface

Univers typeface

Univers Condensed typeface

Times New Roman typeface

## Recommended Swiss Graphic Fonts

ABCDEFGHIJKLM  
NOPQRSTUVWXYZ  
abcdefghijklm  
nopqrstuvwxyz  
1234567890

ABCDEFGHIJKLMN  
OPQRSTUVWXYZÀÅÉÎÕØabcdefghijklm  
nopqrstuvwxyzàåéîõ  
&1234567890(\$£.,!?)

45

ABCDEFGHIJKLMN  
OPQRSTUVWXYZÀÅÉÎÕØabcdefghijklmn  
opqrstuvwxyzàåéî&1  
234567890(\$£€.,!?)

ABCDEFGHIJKLMNO  
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abcdefghijklmnopq  
rstuvwxyzàåéîõøü&  
1234567890(\$£.,!?)

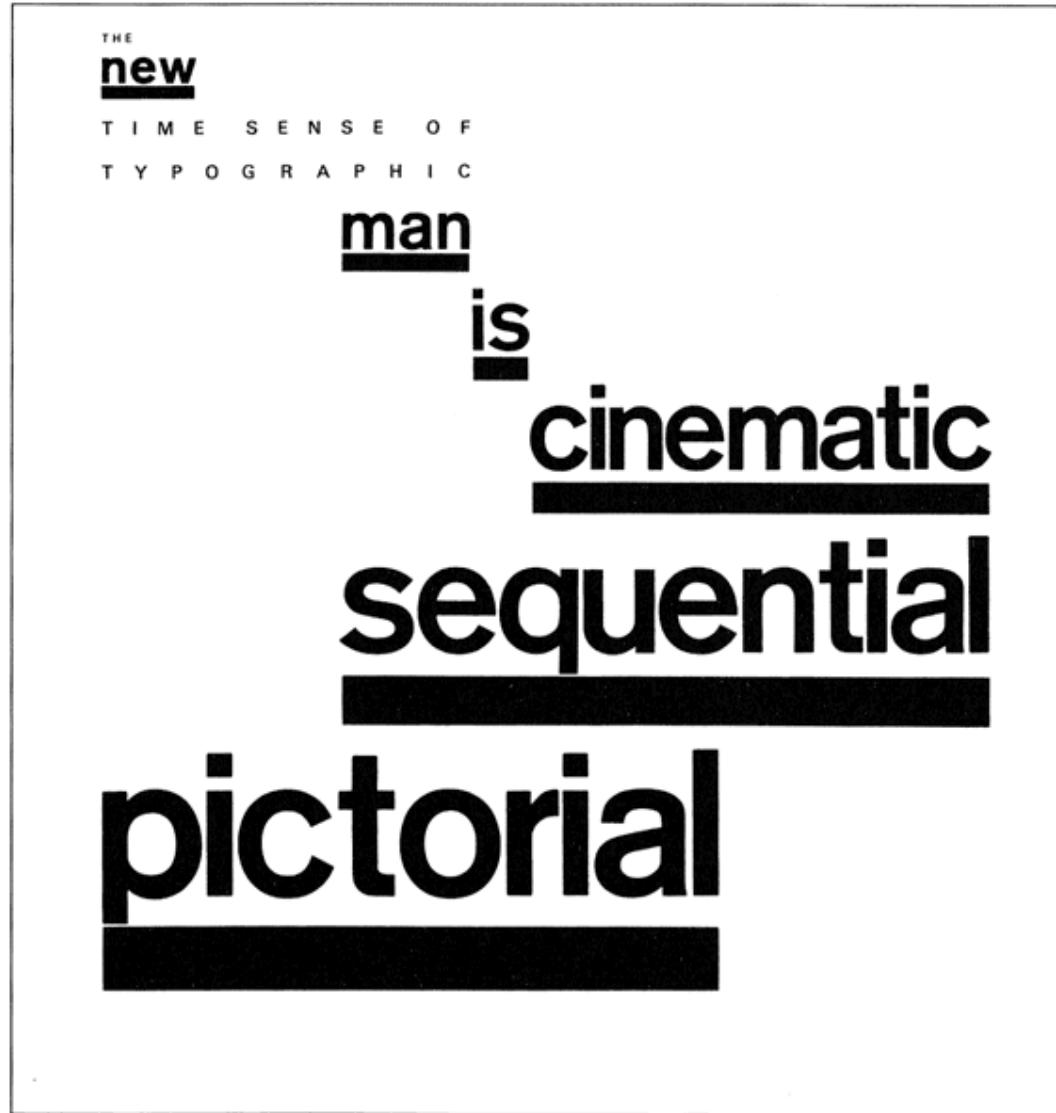
46

43

## **Text and Visual Direction is Culture Specific**

- **Western (descendant from Greek):** Upper left to right, down
- **Cyrillic:** Upper left to right, down
- **Semitic, Arabic Languages:** Upper right to left
- **Japanese, Korean, Chinese:** Left-to-right, vertical top-to-bottom, and sometimes left-to-right

The direction of writing also influences how we will scan information on a page

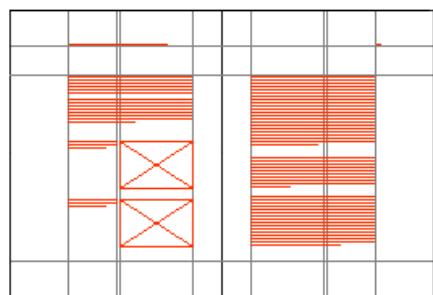
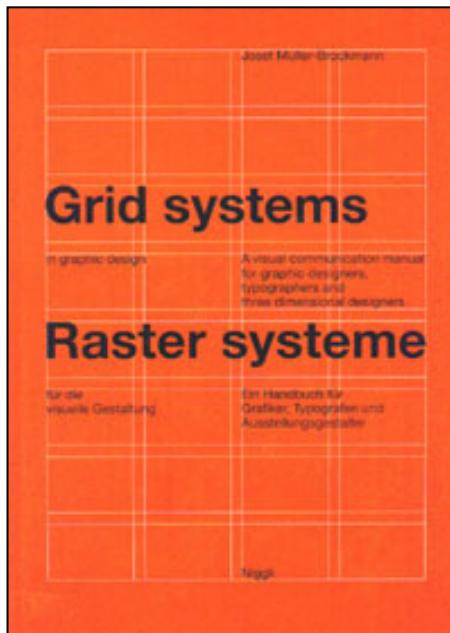


# Motion, Movement Through Spatial Organization



- A **space** becomes visually active when it is subdivided
- Balance is achieved through interplay of **scale**, **sequence**, and **spatial position**
- Any object placed next to each other in an image defines a **relationship** through **spatial proximity**

# Structure: the Grid System (Brockmann)



- **Modular Grids:** Modules determine the dimensions and placement of graphic and typographic elements
- All elements are **consistently** placed according to the **pre-determined structure** once it has been defined
- The grid functions as an **organizational** device, but stays **invisible**
- Structural order also requires **imagination**
- Design process: begin with **intuition** and **visual judgement**, follow with rational structure

# The Grid System (Brockmann)

## The Grid System

The ultimate resource in grid systems.

*"The grid system is an aid, not a guarantee. It permits a number of possible uses and each designer can look for a solution appropriate to his personal style. But one must learn how to use the grid; it is an art that requires practice."*

Josef Müller-Brockmann

Show Grid

Join The Forum

Search

Articles	Tools	Books	Templates	Blog	Inspiration
<p><b>The Golden Proportion</b> The golden section—a precise way of dividing a line, music or anything else—is showed up early in mathematics. <b>06.Jan.2010</b></p>	<p><b>Fluid 960 Grid System</b> A jQuery based fluid grid system template based on Nathan Smith's 960 Grid System. Allows multiple layouts including 12 or 16 fluid columns and 12 or 16 fixed columns. <b>06.Jan.2010</b></p>	<p><b>Universal Principles of Design</b> Universal Principles of Design is the first comprehensive, cross-disciplinary encyclopedia of design. <b>04.Nov.2009</b></p>	<p><b>Photoshop 4 Column Grid</b> A free 4 Column Photoshop grid template for a 1024x768 screen resolution by Ray Gulick. <b>08.Jun.2009</b></p>	<p><b>Buy Slammer = Help Haiti</b> The grid-generating app Slammer is part of the Indie+Relief initiative. Buy it and all proceeds from today (01/20) will be donated to Haiti. <b>20.Jan.2010</b></p>	<p>Ace Jet 170 AisleOne Athletics BBDK Blanka Build Corporate Risk Watch Counter Print David Airey Design Assembly Dirty Mouse Experimental Jetset Form Fifty Five Grafik Magazine Grain Edit Graphic Hug I Love Typography Lamosca Mark Boulton Minimal Sites Monocle Neubau NewWork OK-RM Original Linkage Papir Human</p>
<p><b>The Golden Ratio in Web Design</b> You would be surprised to find out that most aesthetically pleasing designs, works of art, objects and even people have math in common. Specifically the Golden Ratio... <b>06.Jan.2010</b></p>	<p><b>Masonry</b> Masonry is a layout plugin for jQuery that arranges elements vertically then horizontally according to a grid. <b>06.Jan.2010</b></p>	<p><b>Designing for the Web</b> A Practical Guide to Designing for the Web has written explanations of the core principles of graphic design in relation to the web. <b>08.Oct.2009</b></p>	<p><b>InDesign 568x792 Grid System (12)</b> By Dario Galvagno. Adobe InDesign file with a grid system for a 568pts x 792pts page that is divided into 12 columns and rows using the Golden Ratio. Includes a 12pt baseline grid. <b>16.Apr.2009</b></p>	<p><b>Eternal Network</b> Lovely minimal grid based site design that's reminiscent of old computer paper. <b>06.Jan.2010</b></p>	

# The Grid System (Brockmann)



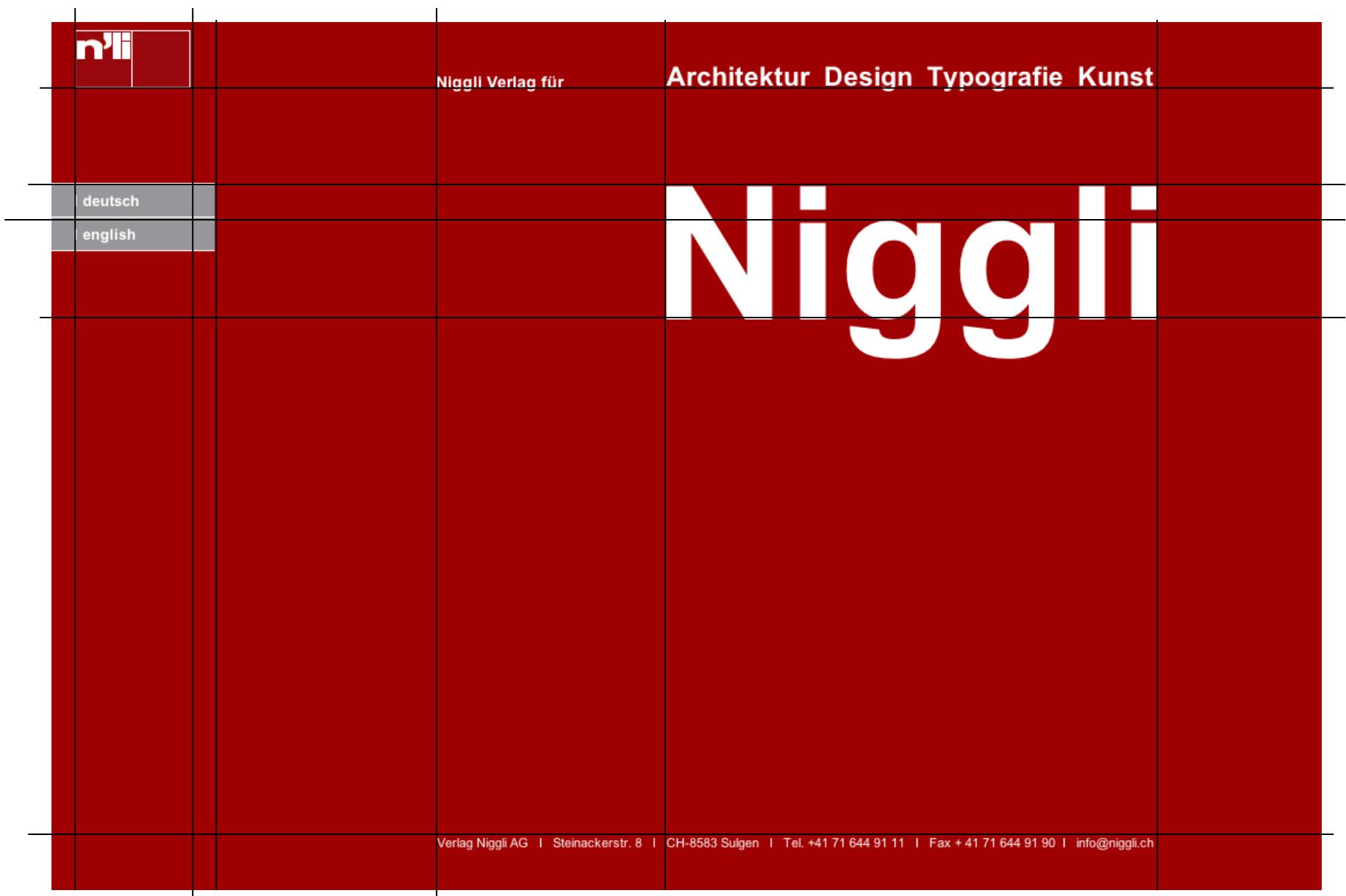


Niggli Verlag für

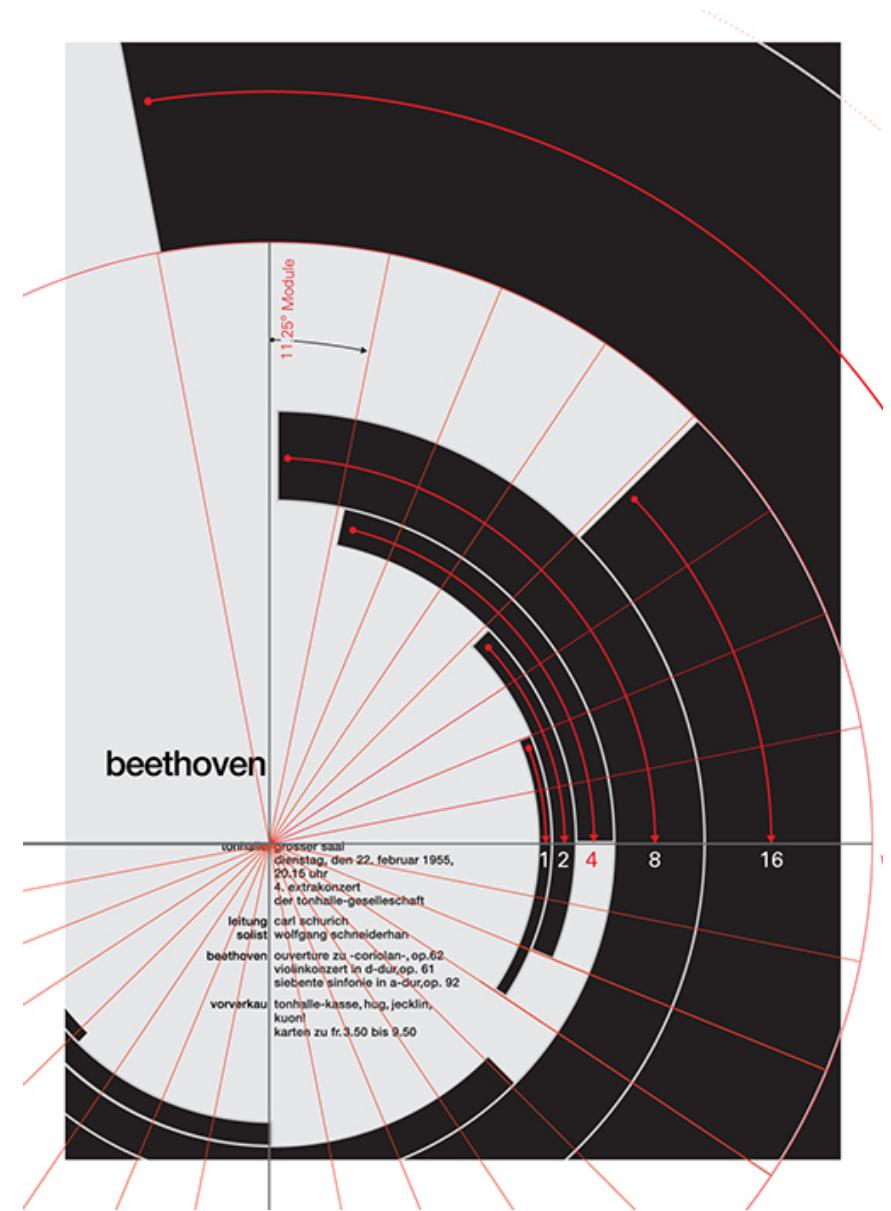
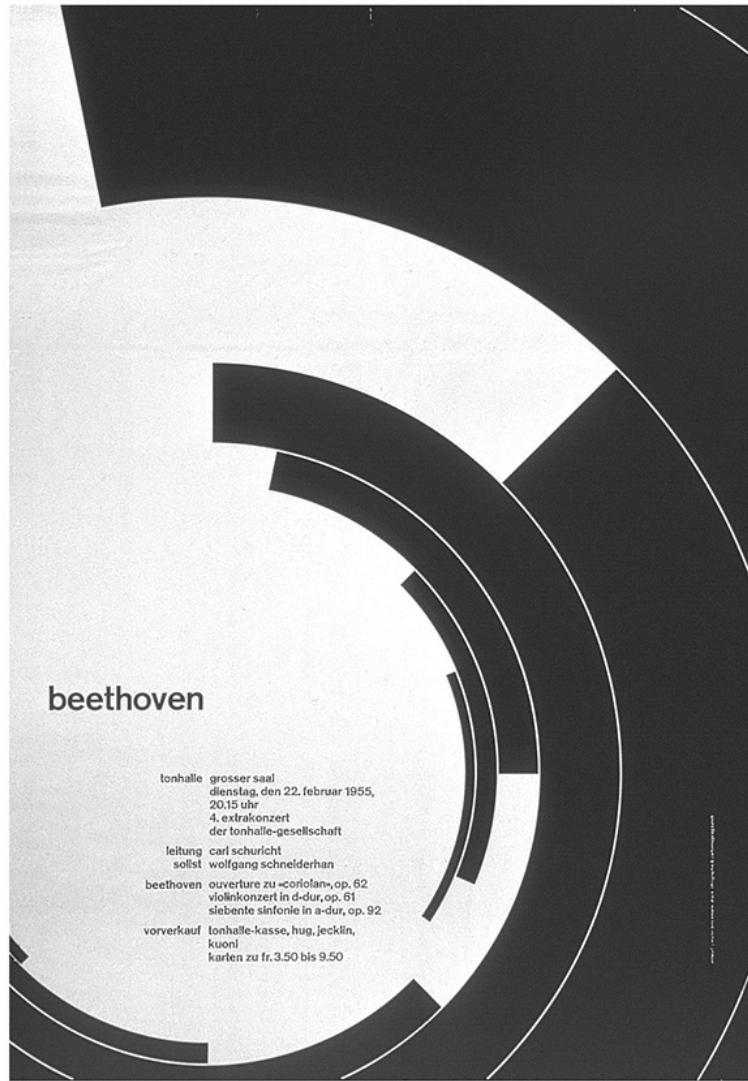
Architektur Design Typografie Kunst

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I english

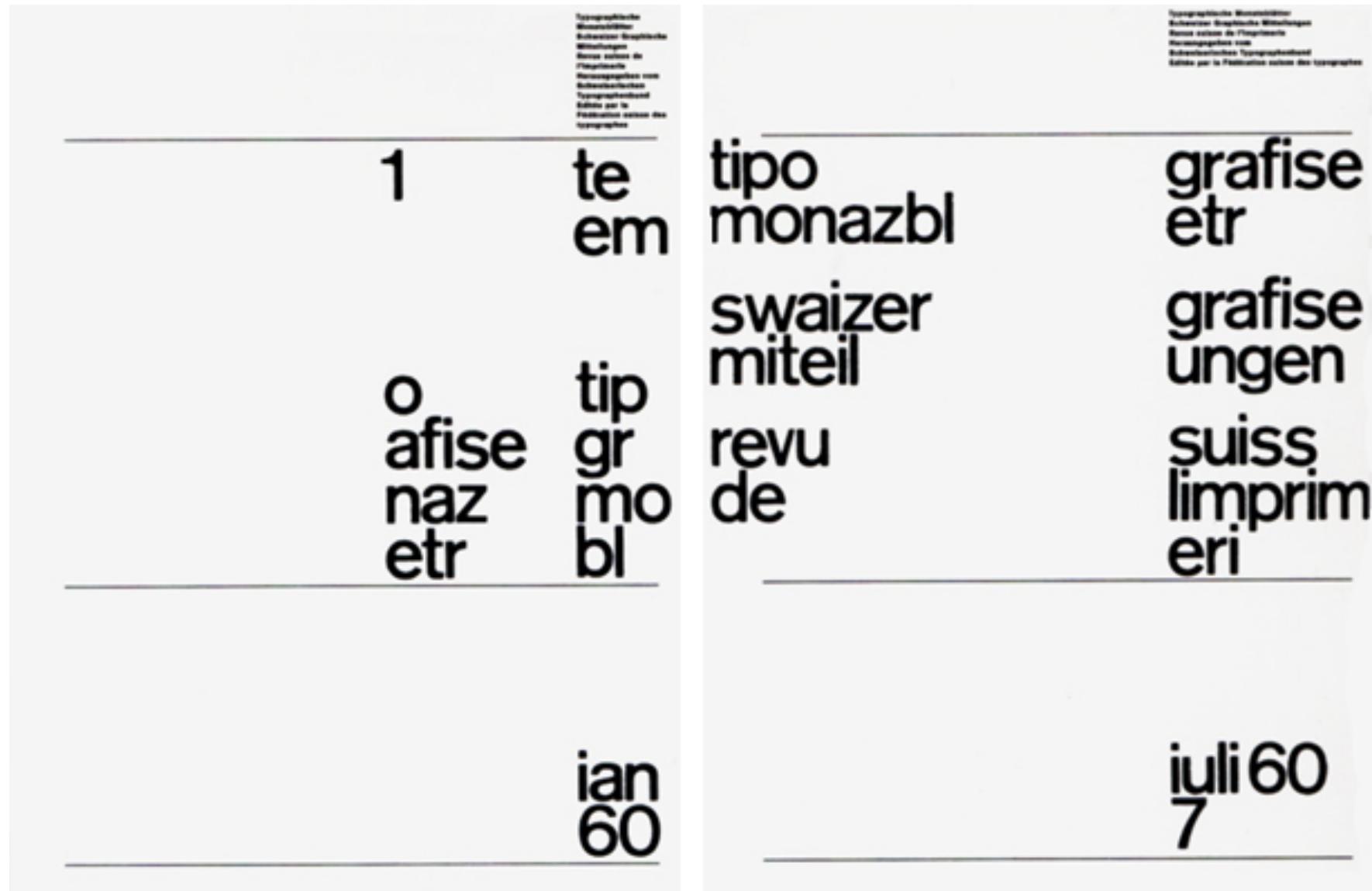
# Niggli



## Poster by Brockmann



# Swiss Graphic Design



# Swiss Graphic Design





"A Primer of Visual Literacy"

Donis A. Dondis

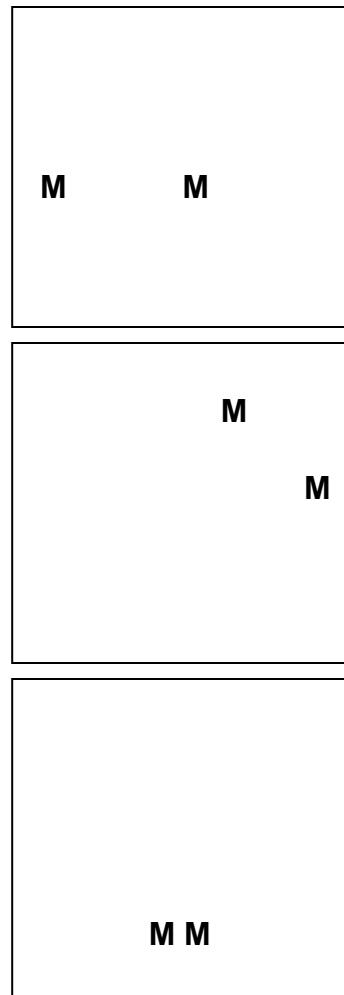
MIT PRESS, 1974

Clarifies the basic elements of  
design to show how they are  
used in simple syntactical  
combinations

## Visual Basic Literacy: Basic Units (Dondis)

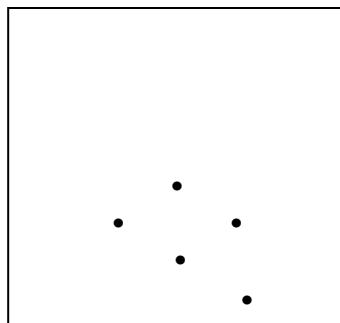
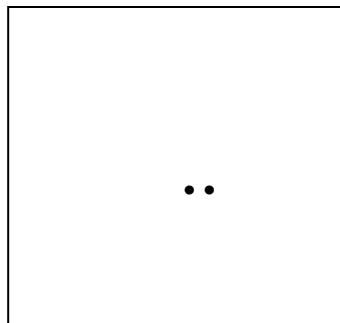
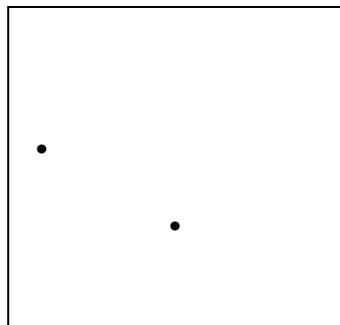
- **Dot:** Minimal unit, pointer, marker of space
- **Line:** Joins dots, articulator of space
- **Shape:** Line describes and encloses space
- **Direction:** Thrust of movement
- **Tone:** The intensity of lightness or darkness
- **Color:** Associative and symbolic meanings
- **Texture:** Quality of touching, looks/feels like
- **Scale:** Relative proportion & measurement
- **Space:** Organization of
- **Motion:** Visual elements guiding the viewer

## Visual Organization / Space (Macro-micro, willi kunz)



- **Size and proportion** of space are determined at the beginning
- Space is visually **subdivided** by the **tension** that develops between an **element** and the **boundaries** of the space
- **Space:** Depending on their visual placement within a given space, the **same** elements will assume **different** visual aspects of **weight** and **movement**

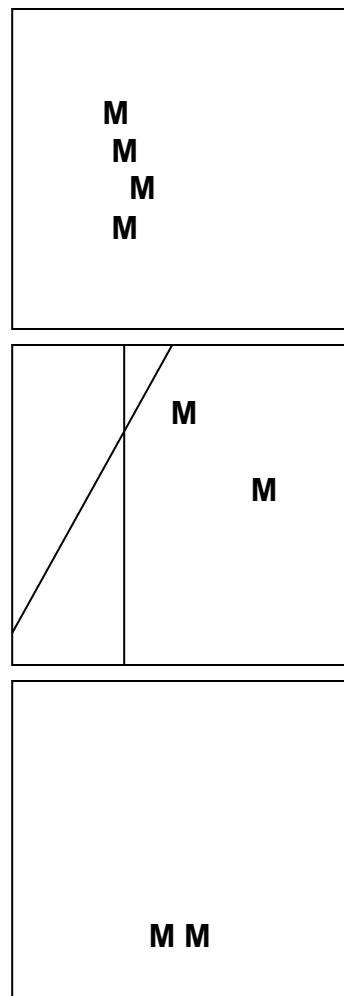
# Visual Groupings in Space



- **Attraction & Grouping:** 2 dots fight for attention in their interaction
- **Distanced:** Create individual statements as they repel each other
- **Close together:** There is an attraction force
- **Perception:** dictates to make whole out of units
  - Connect the dots!! (we do it with the stars)

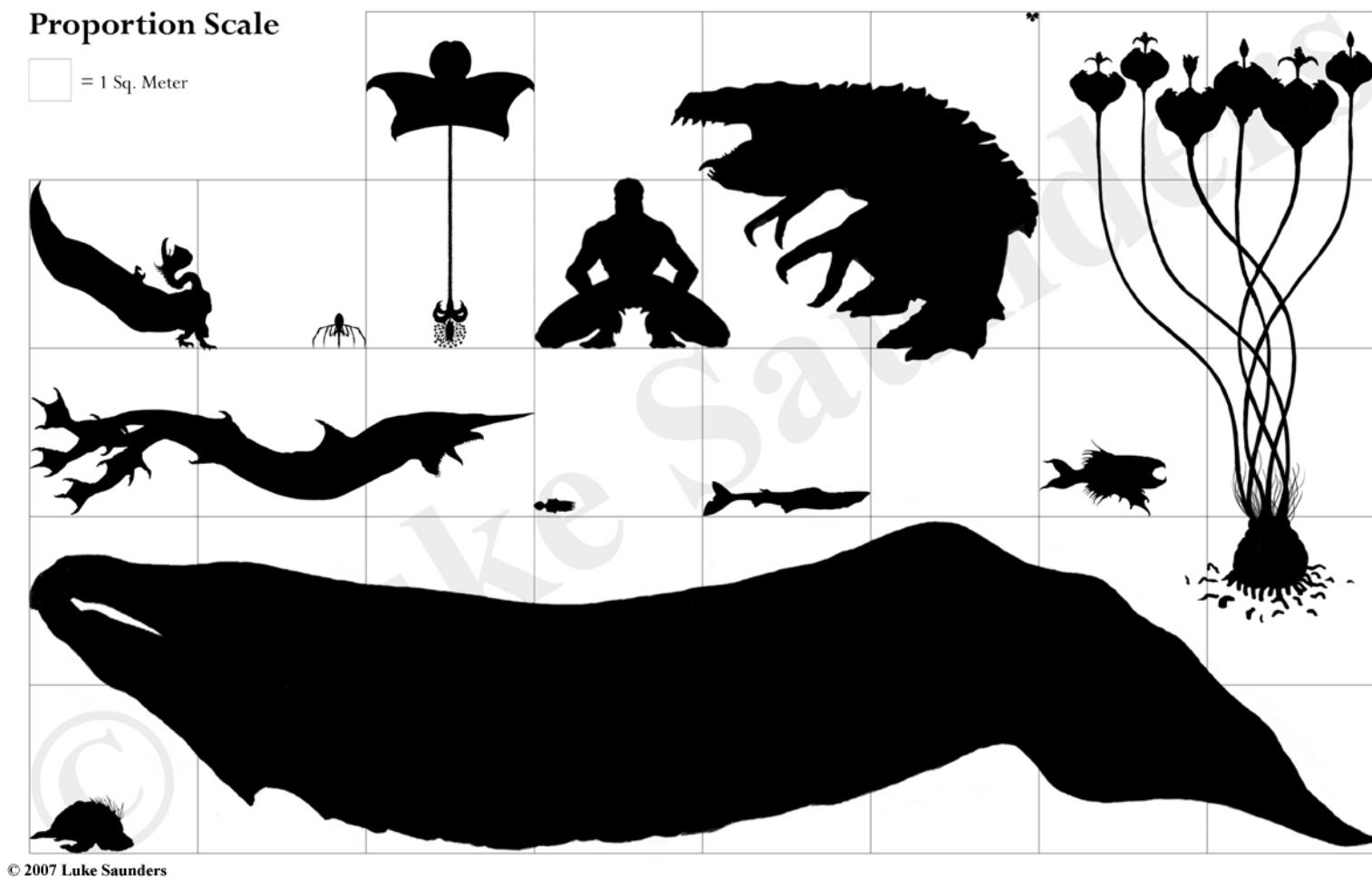
**Opposites repel, similars attract**

## Weight, Im/Balance, Dis/Order, Un/Stable



- **Balance:** Physiological, psychological
  - **H-V construct:** man to his environment
- **Stress:** Unstable causes stress
  - Stabilization: relative stress/balance
- **Lower-left:** most stable
- **Harmony:** (centered), no visual surprise
  - Search for balance with off-center mark
- **Ambiguity:** may obscure intent & meaning
  - Slightly off-center mark confounds
- Visual elements in stress location: more weight

# Scale: Relative proportion & measurement



## Color Relationships

- Black & White or color?
- If black and white – what about grey tones?
- If color, how many? (Limit to 3 to 6?)

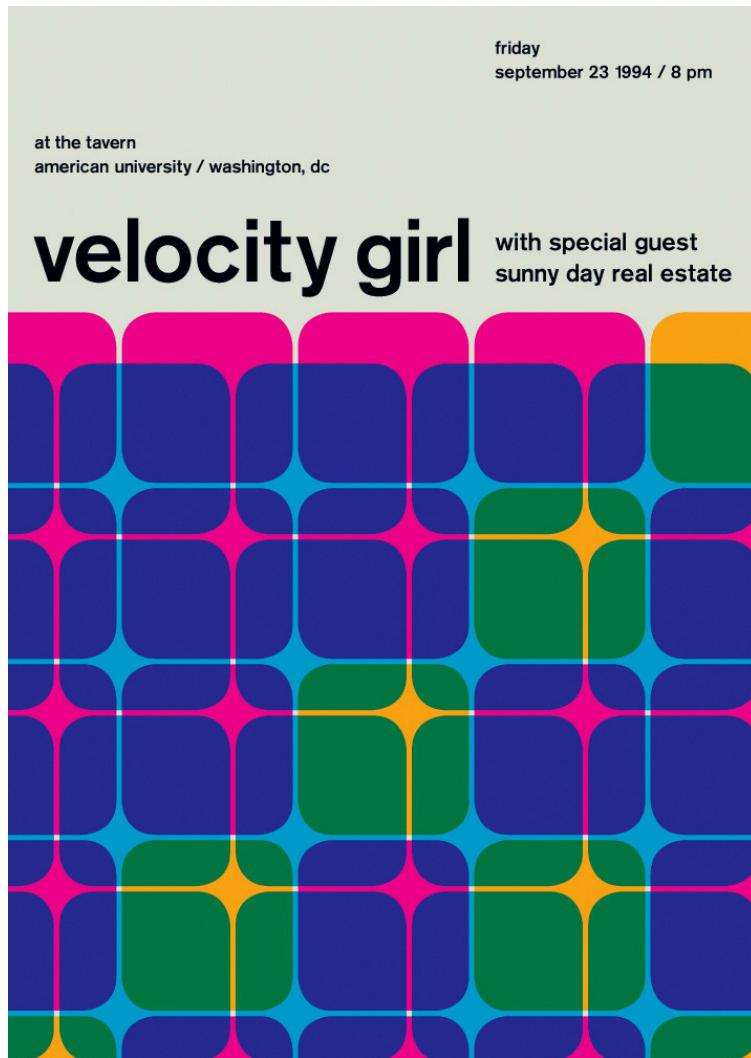
## Color Tools & References

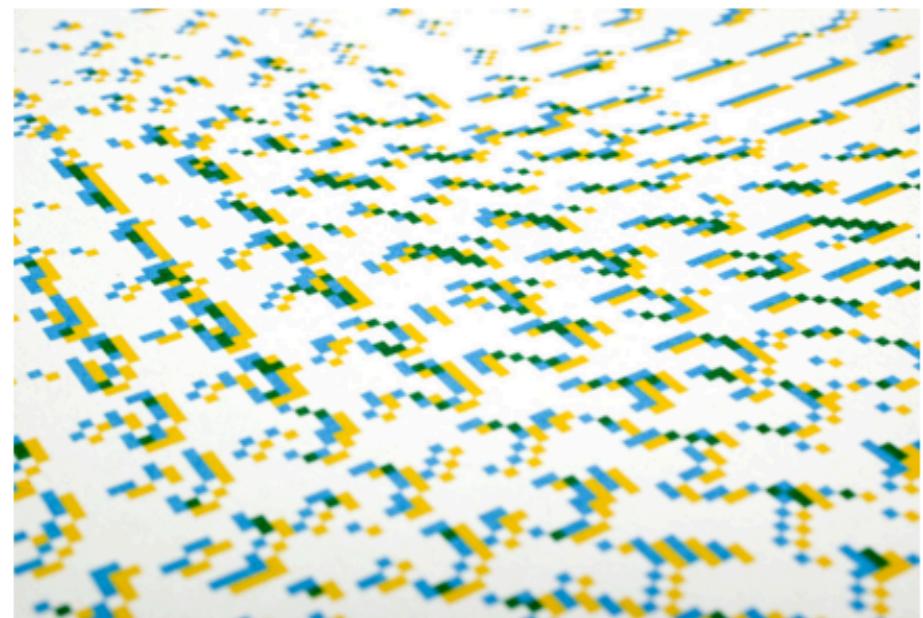
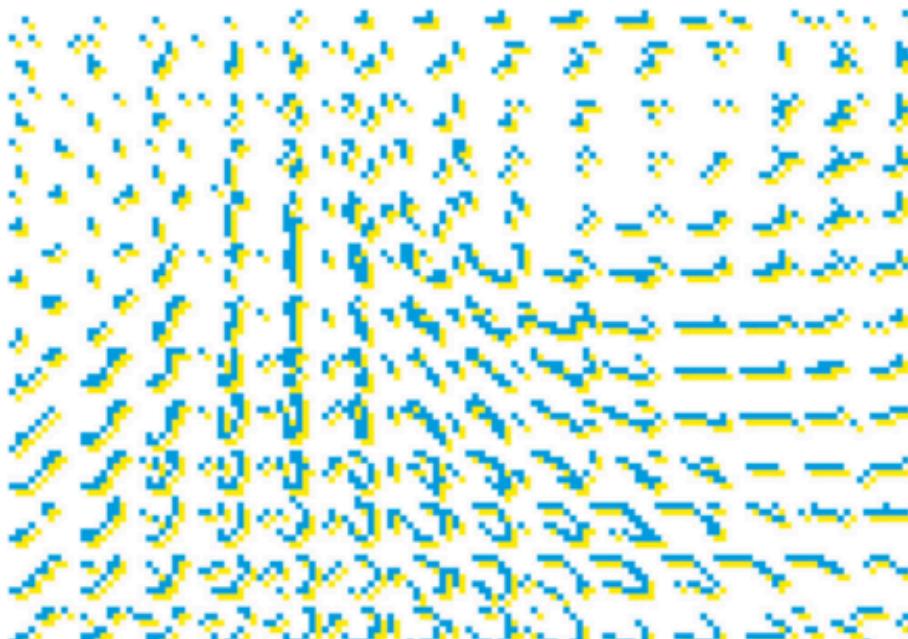
[http://tristen.ca/hcl-picker/#/hlc/6/1/21313E/  
EFEE69](http://tristen.ca/hcl-picker/#/hlc/6/1/21313E/EFEE69)

Problems of equidistant HSV

Swissted Graphic Posters

# Color Relationships





## Conceptual Design

First phase of a project where quick sketches are used for **idea definition:**

- Provides a description of the proposed system
- What are the elements, how do they interface
- What it will look like
- Defines both the functionality and aesthetics of the project

## Ryoji Ikeda

Japanese sound and visual artist

- Uses scale, light, shade, volume, shadow, electronic sounds, rhythm
- Datamatics (2013)
- [http://www.armoryonpark.org/photo\\_gallery/slideshow/ryoji\\_ikeda](http://www.armoryonpark.org/photo_gallery/slideshow/ryoji_ikeda)

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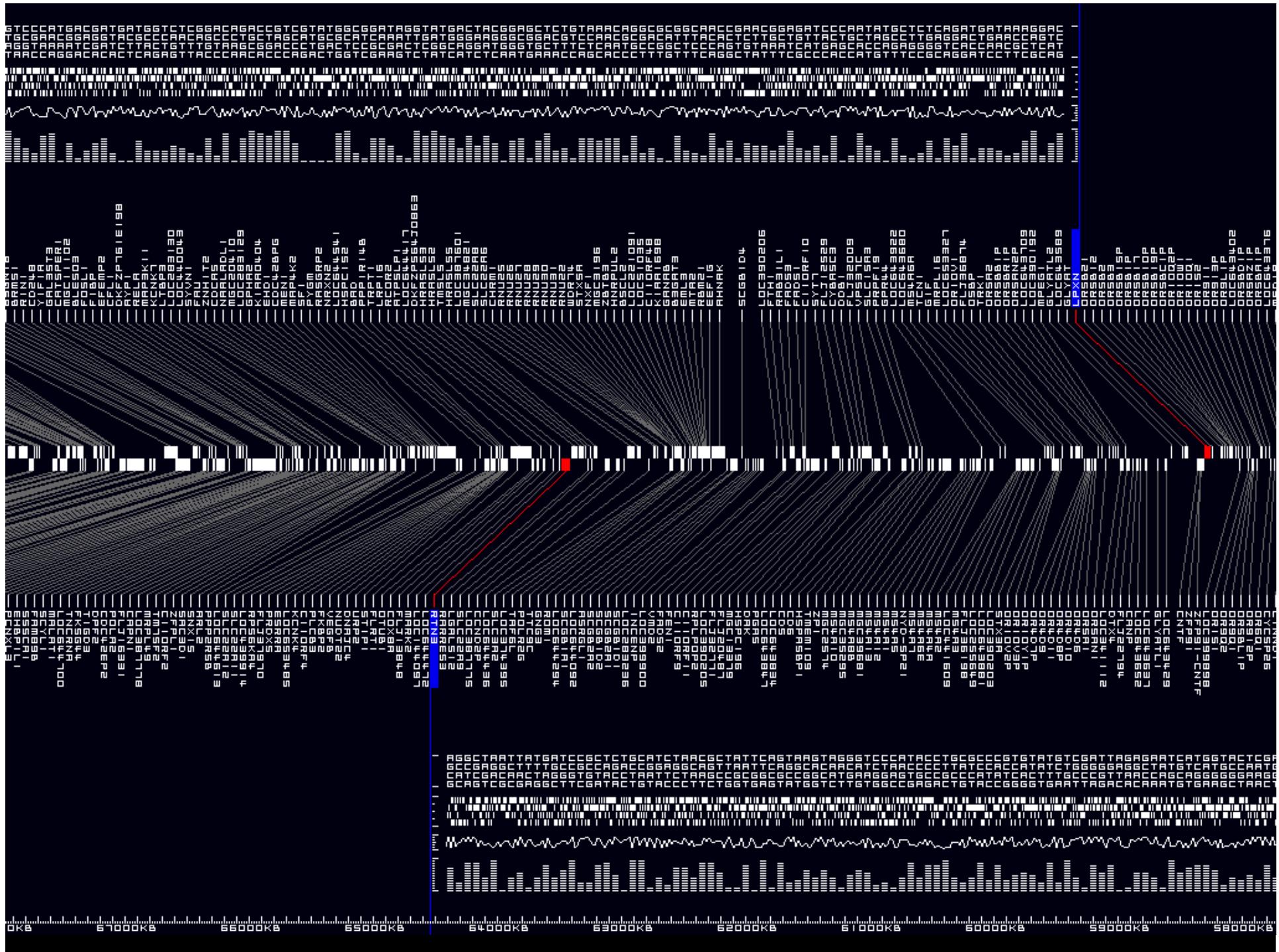
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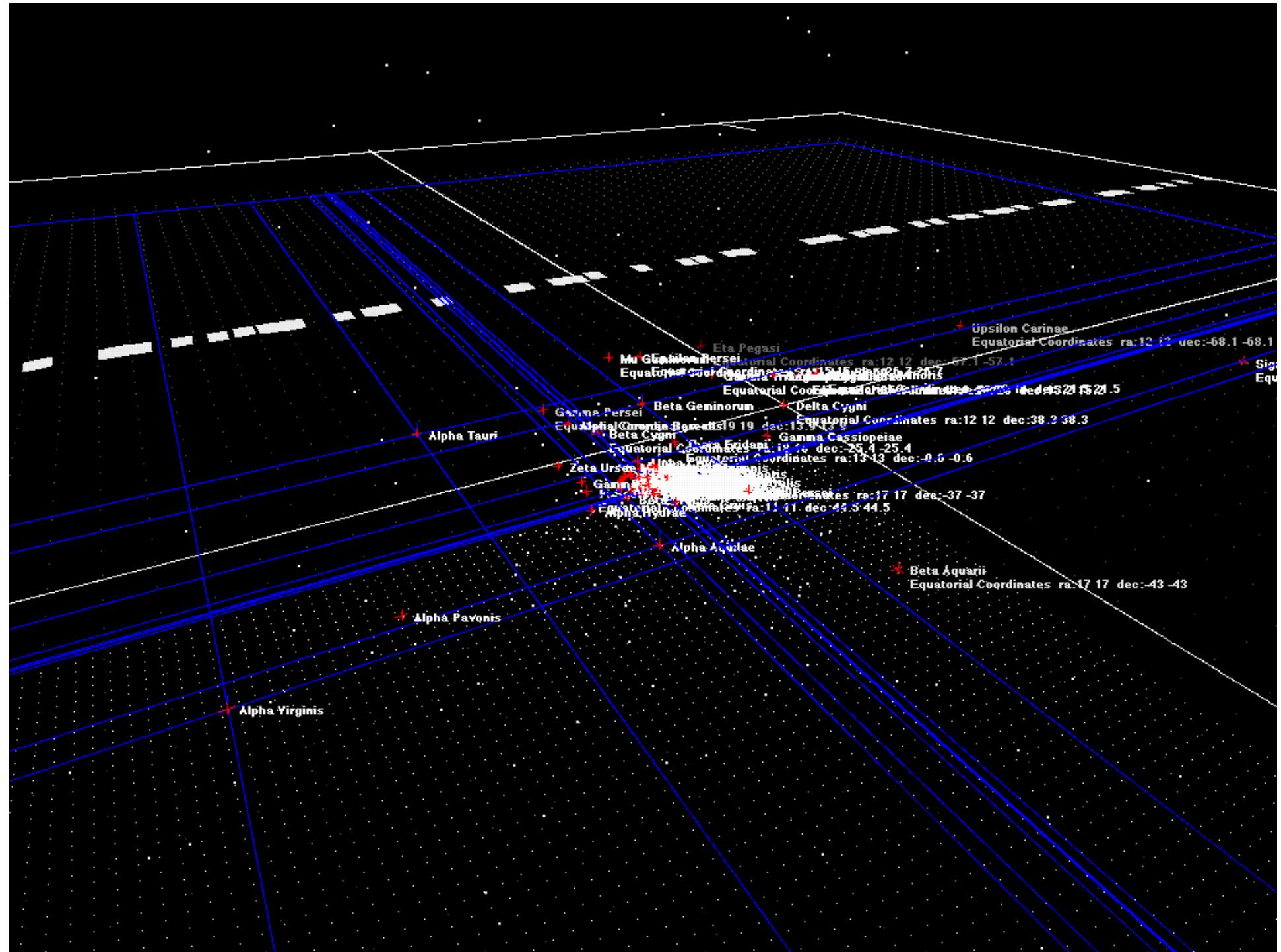
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## Image Complexity – Balance & Sub Division

- Too ordered is boring
- Too chaotic is confusing

Find a space between those two extremes

**Strategy:** Create an ordered system and then slightly disturb it

## Resources: Some Design Firms & Others

- Metadesign
- Bruce Mau (SPL)
- LTL (Architectural design)
- Columbia School of Architecture
- Sensable City MIT
- LTL Architects
- Herzog de Meuron
- OMA (Office of Metropolitan Architecture)