

SCIENCE of DESIGN

Denys Mishunov • fastName.No • @mishunov

"The best way to accomplish serious design ... is to be totally and completely unqualified for the job"

Paula Scher

WHY DESIGN?

.net

by James Young

HOME NEWS TUTORIALS **FEATURES** INTERVIEWS OPINIONS SHOP



The top responsive web design problems ... and how to avoid them!

By James Young on August 13, 2012 | 18 comments

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The lack of a static design phase

DESIGN

=

communication

DESIGN = communication

"We are designers, not artists;
the main difference being that
we produce things that solve
problems."

Paul Boag

DESIGN PRINCIPLES

PROPORTION



"The page is a piece of paper. It is also a visible and tangible proportion, silently sounding the thoroughbass of the book. On it lies the textblock, which must answer to the page...

The two together - page and textblock - produce an antiphonal geometry...

... That geometry alone can bond
the reader to the book. Or
conversely, it can put the reader to
sleep, or put the reader's nerves on
edge, or drive the reader away."

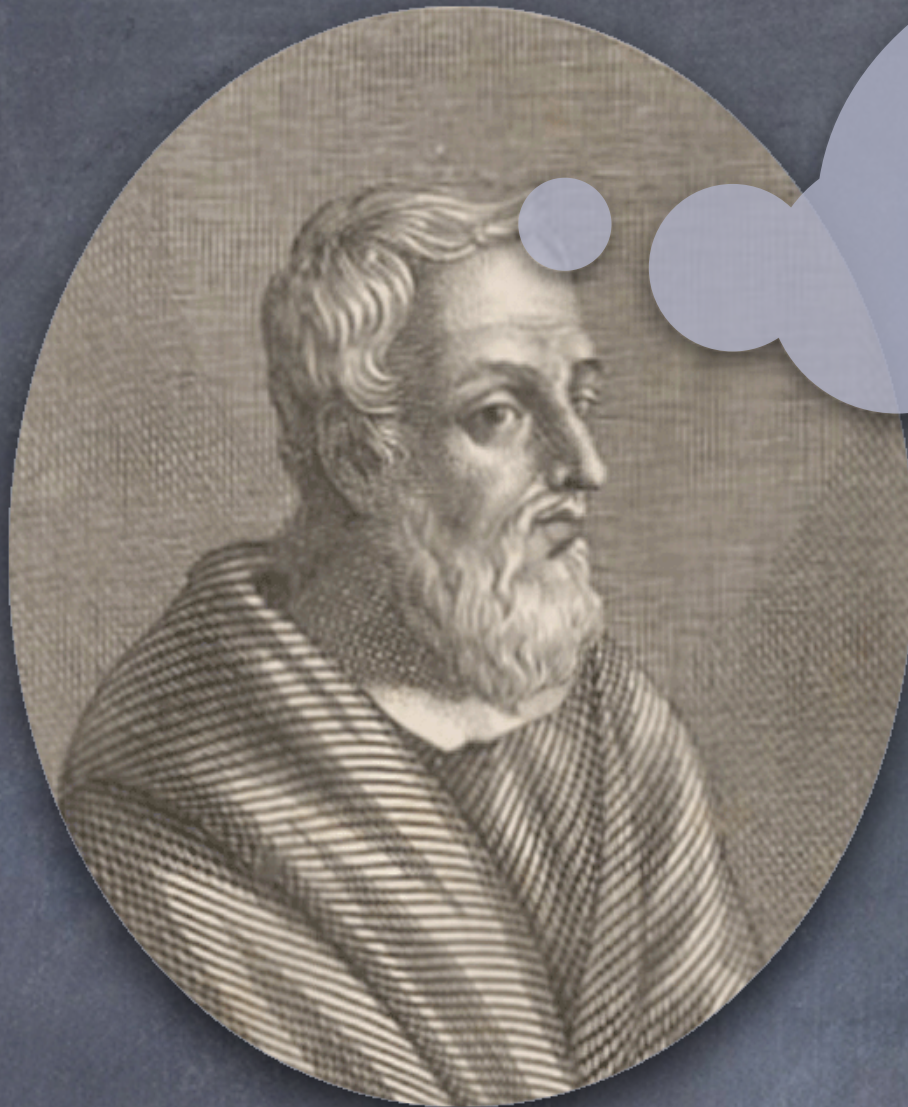
Robert Bringhurst

"The Elements of
Typographical Style"

Charles Seife

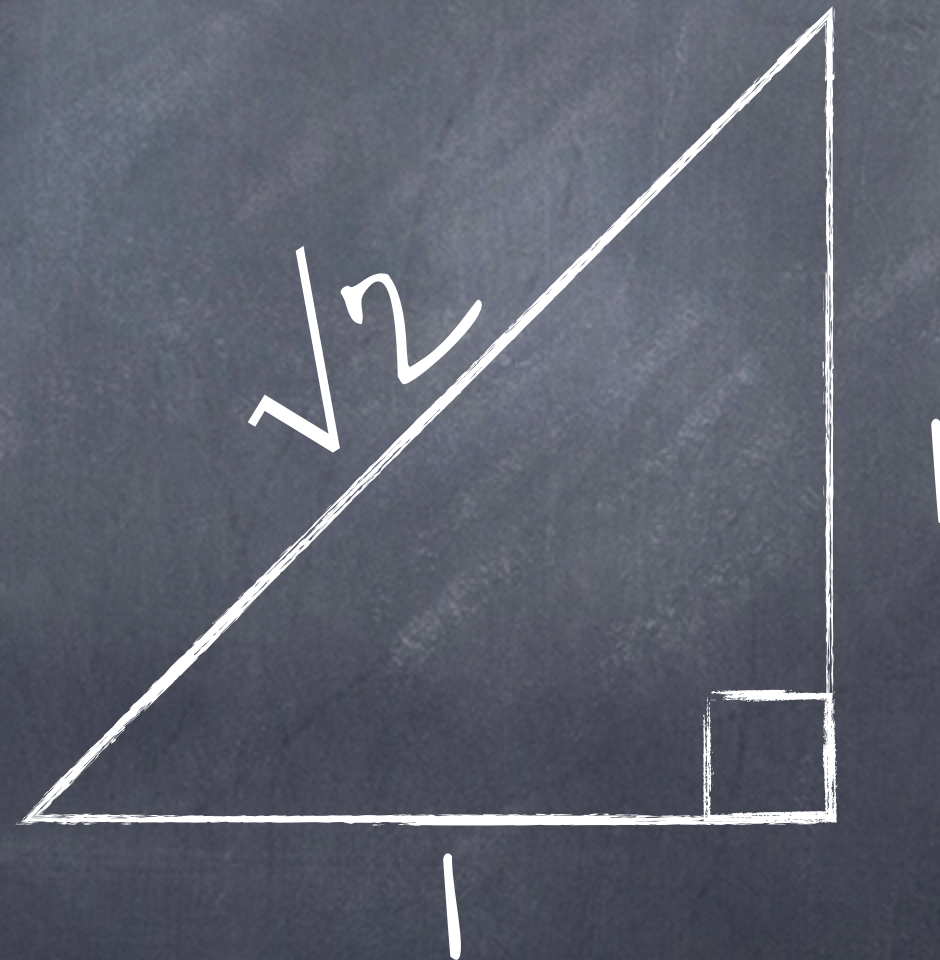
"Zero: The Biography of a Dangerous Idea"

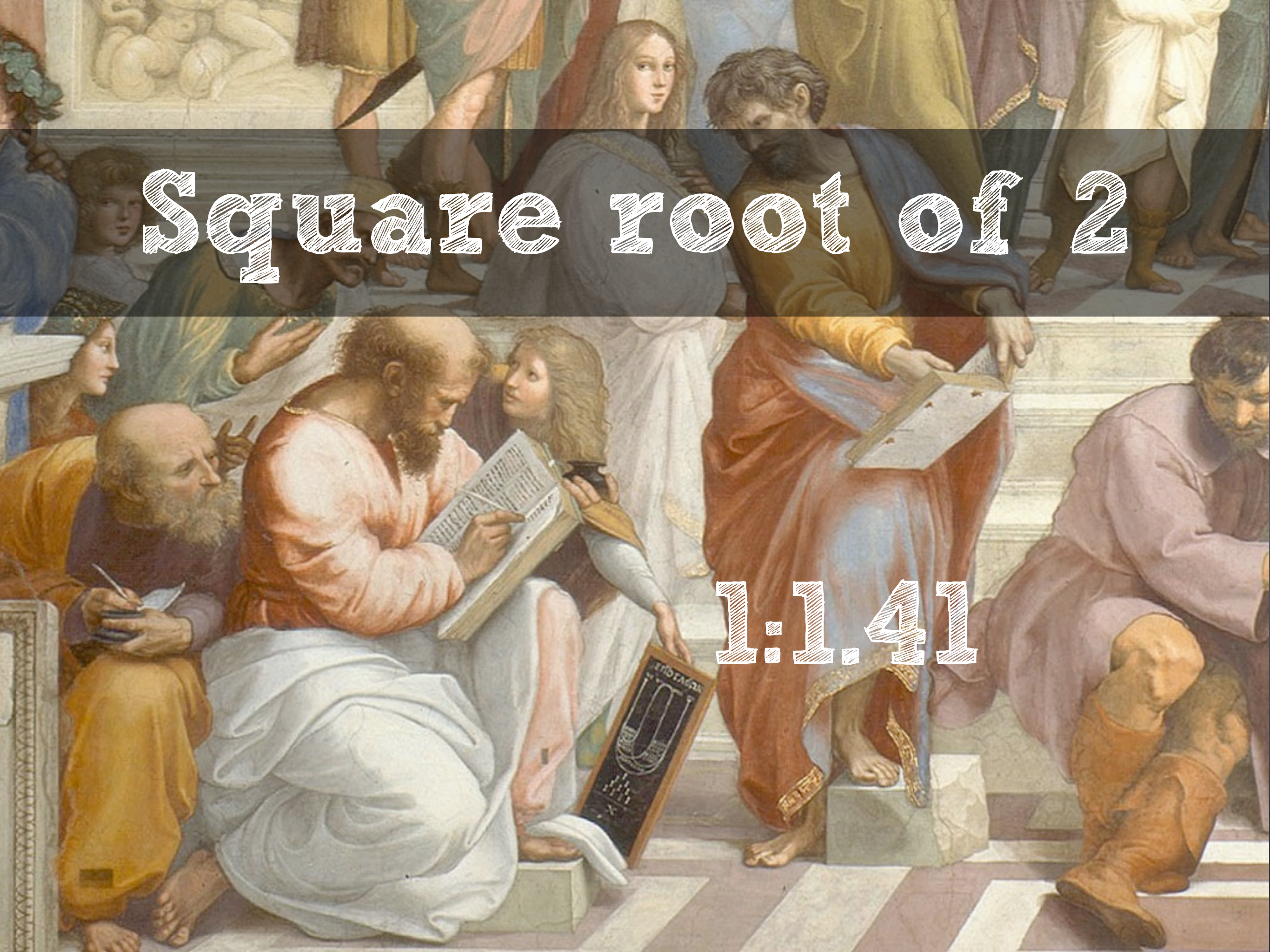
... Hippasus of Metapontum stood on the deck preparing to die. Around him stood the members of a cult, a secret brotherhood that he had betrayed. Hippasus had revealed a secret that was deadly to the Greek way of thinking, a secret that threatened to undermine the entire philosophy that the brotherhood had struggled to build. For revealing that secret, the great Pythagoras himself sentenced Hippasus to death by drowning. To protect their number-philosophy, the cult would kill...



IPPASO DI METAPONTO, FILOSOFO

WTF=?






square root of 2

1:1.41



Babylonian clay tablet YBC 7289 with annotations
(c. 1800-1600 BCE)

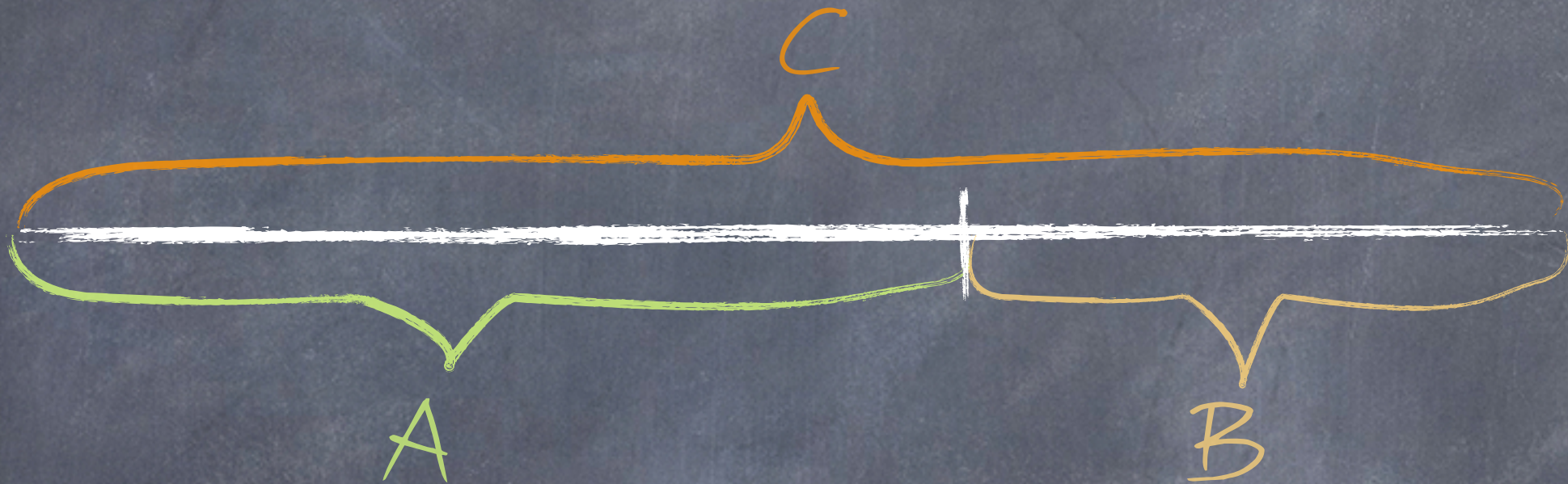




Divine Proportion

1:1.618

Golden Section



$$\frac{A}{B} = \frac{C}{A}$$



Pythagoras

6th century BC

Euclid

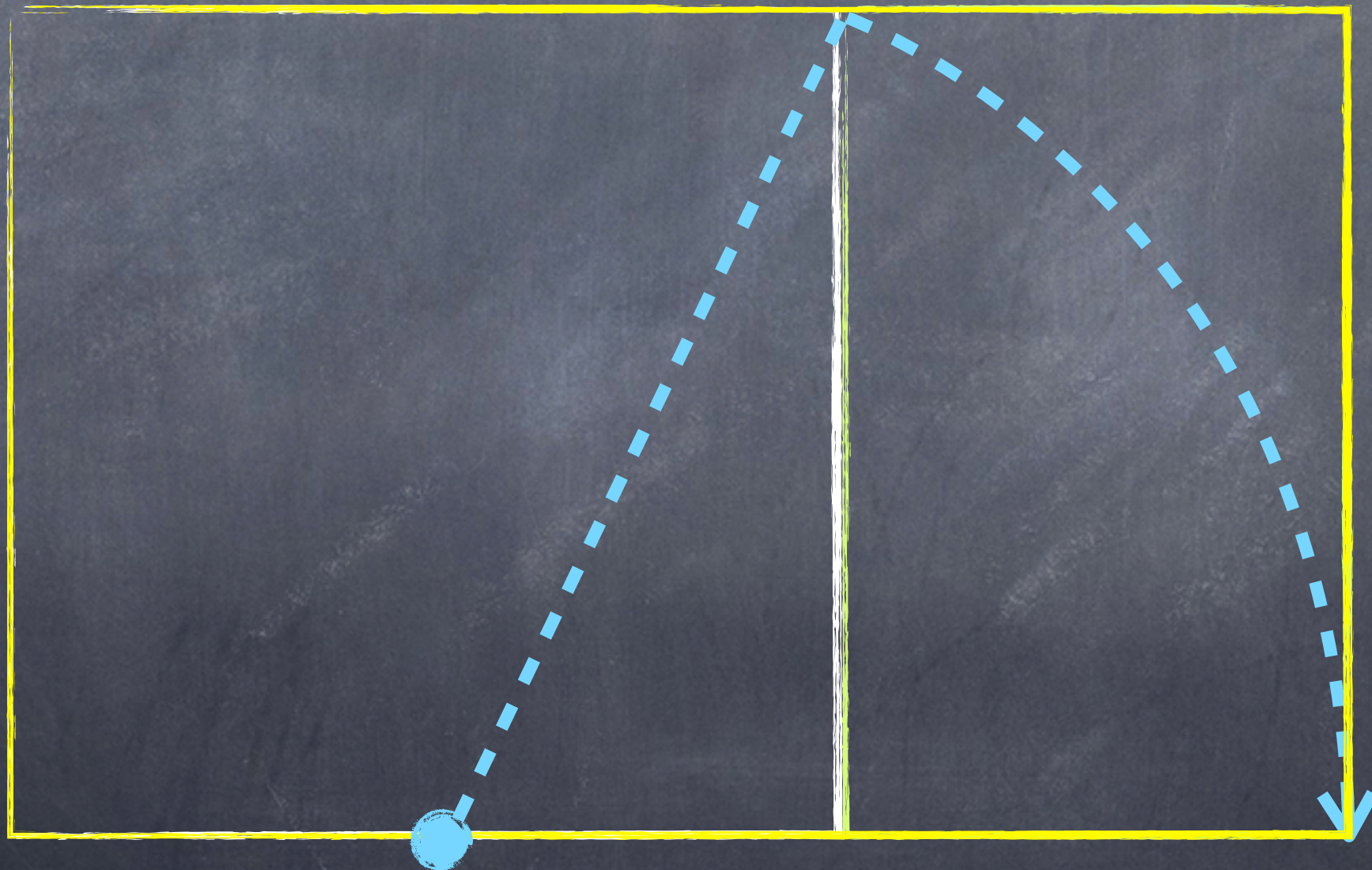
3rd century BC



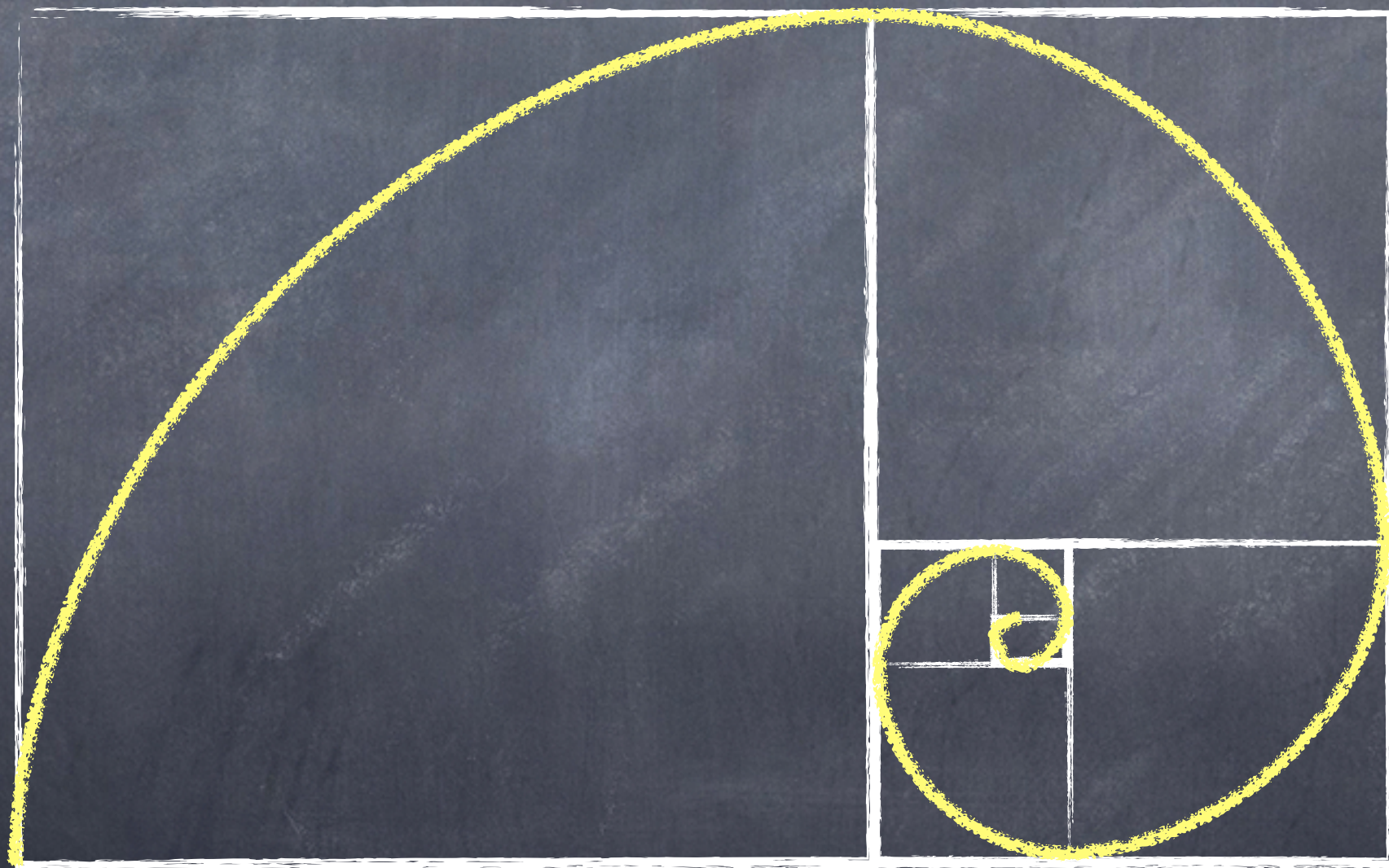
Golden Rectangle

$$A \times 1.61803398$$

A



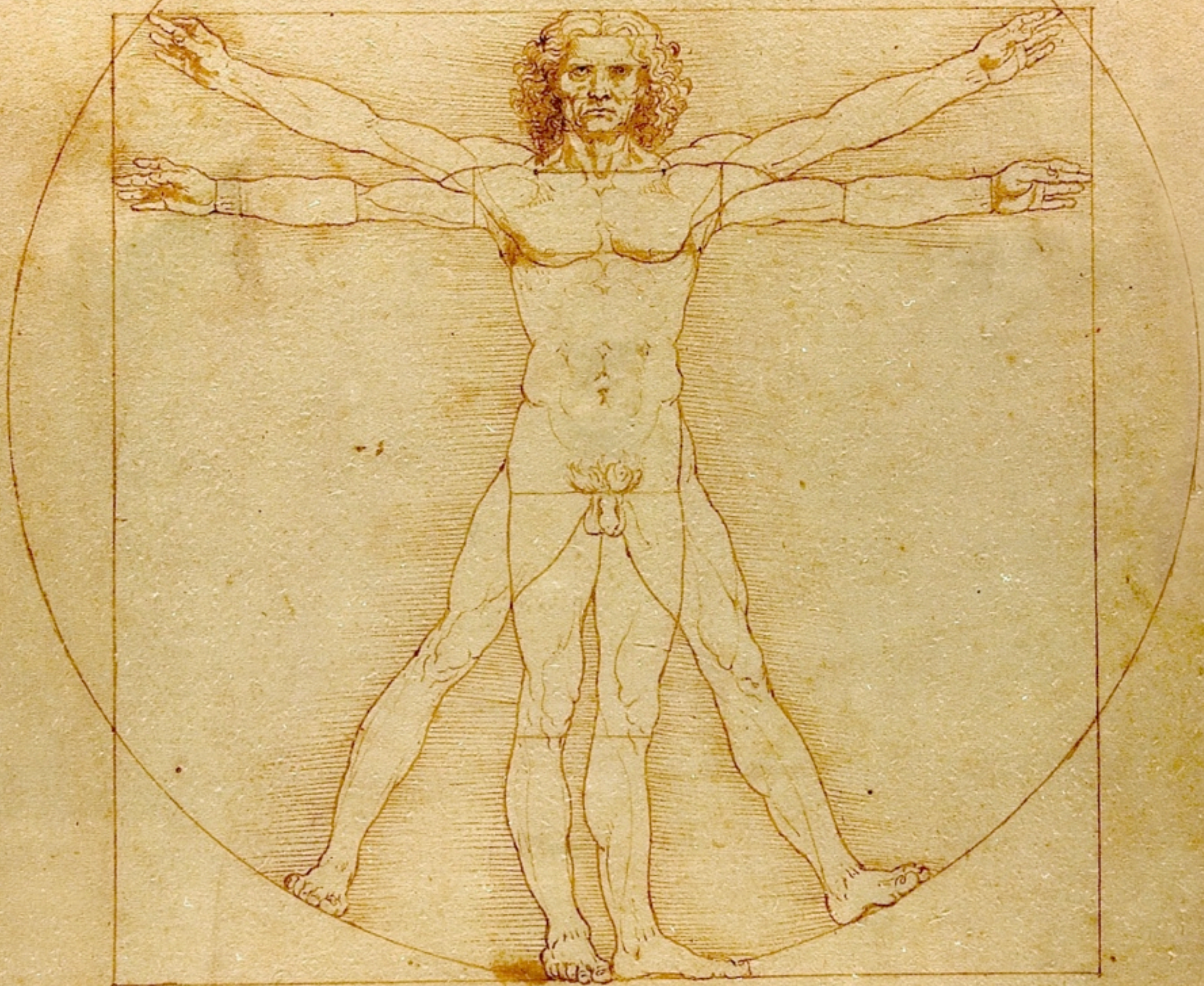
Golden Spiral





Leonardo of Pisa (Fibonacci)

Liber Abaci (1202)

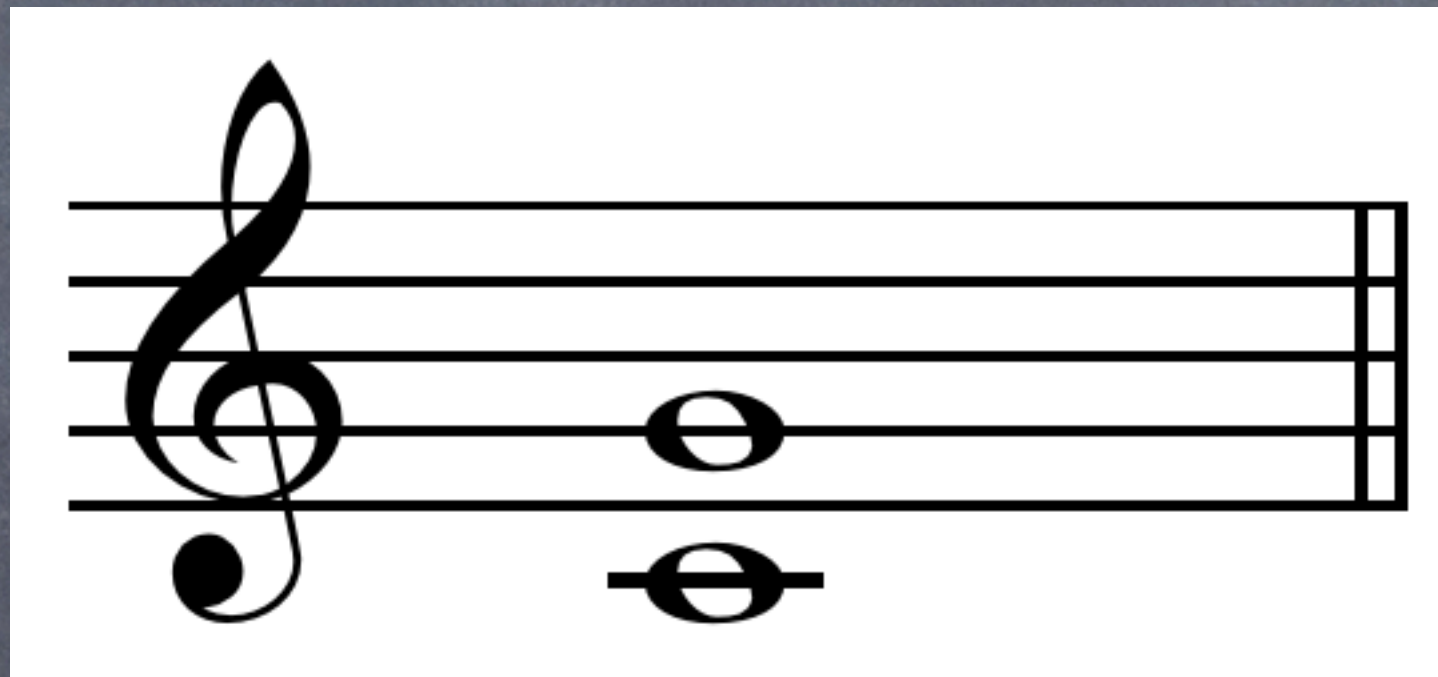


A series of yellow geometric shapes, including rectangles and L-shapes, arranged in a row at the top of the slide.

A long time ago in a galaxy far,
far away....

A series of yellow geometric shapes, including rectangles and a large curved shape, arranged in a row at the bottom of the slide.

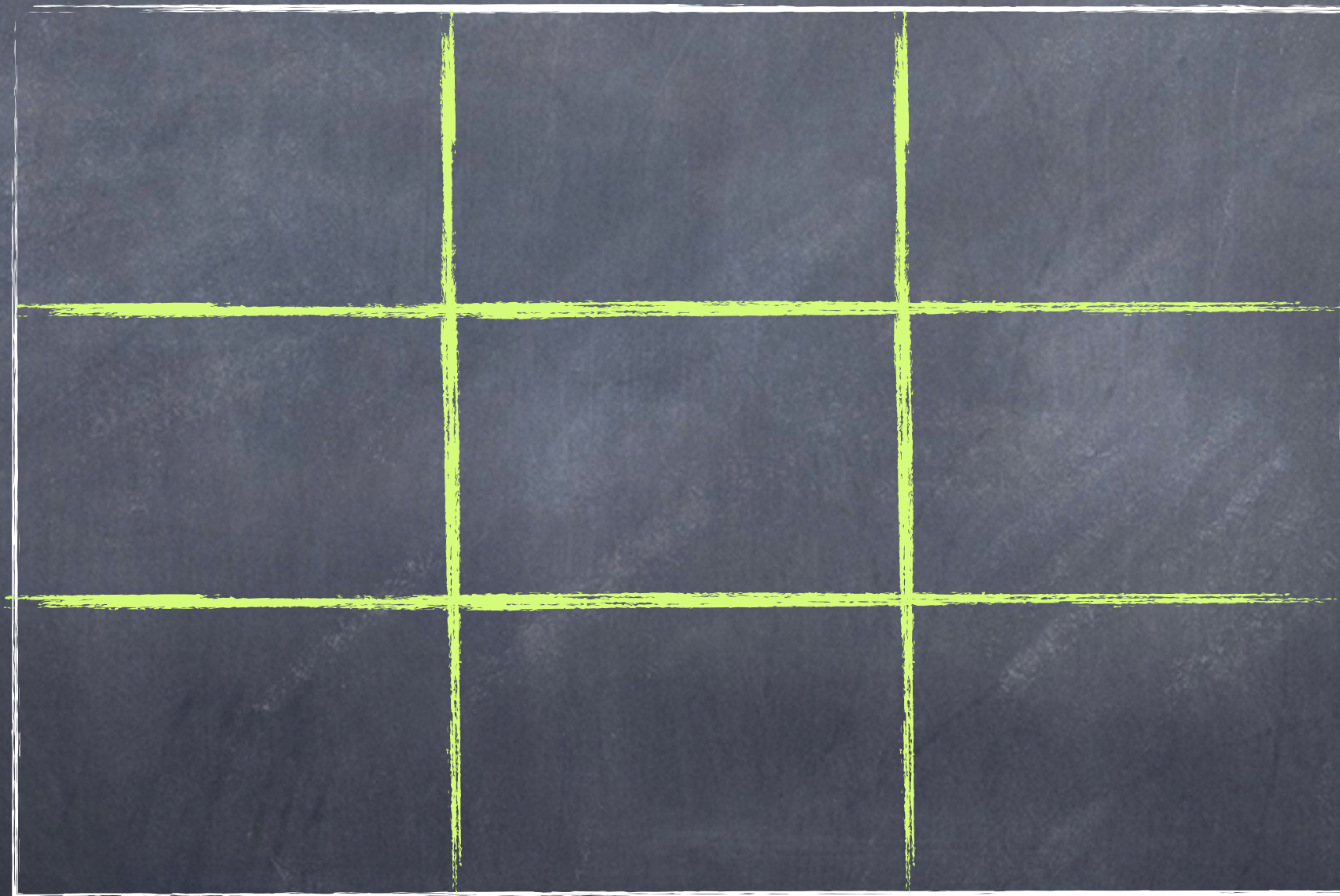
Perect Fifth



From wikipedia. Created by Hyacinth using Sibelius 5

Rule of Thirds

2:3



• 3:4

• Square root of 3

• 5:8

• 3:5

• anything:anything



Golden section – 1:1.618 [0.618]

Typography follows the same proportion

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed posuere consectetur est at lobortis. Nullam quis risus eget urna mollis ornare vel eu leo. Maecenas sed diam eget risus varius blandit sit amet non magna. Aenean eu leo quam. Pellentesque ornare sem lacinia quam venenatis vestibulum. Etiam porta sem malesuada magna mollis euismod. Vivamus sagittis lacus vel augue laoreet rutrum faucibus dolor auctor.

In Music

- Etudes (studies) and Nocturnes by Chopin
- "Sonneries de la Rose+Croix" (Erik Satie)



2:3 proportion [0.66]

Typography follows the same proportion

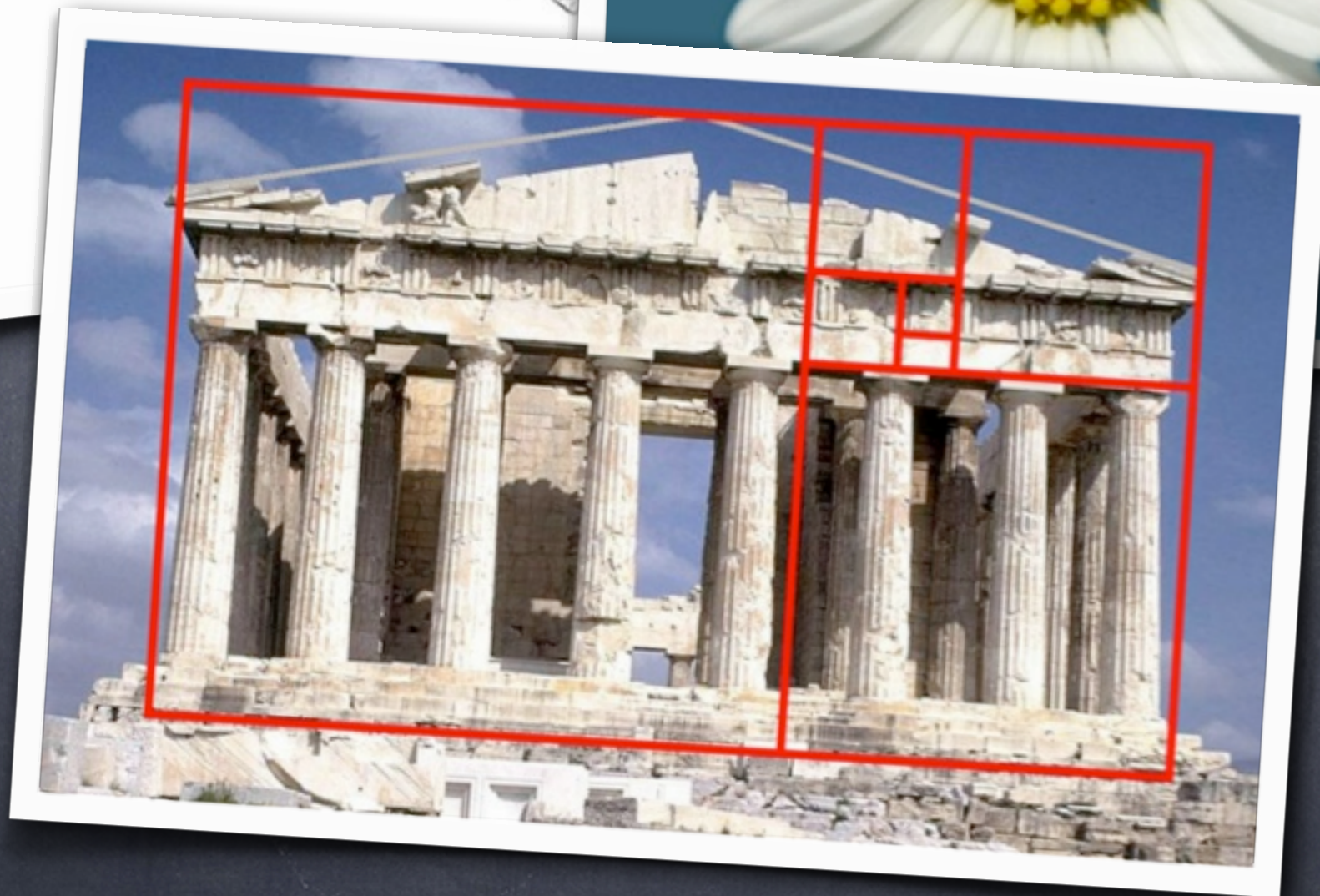
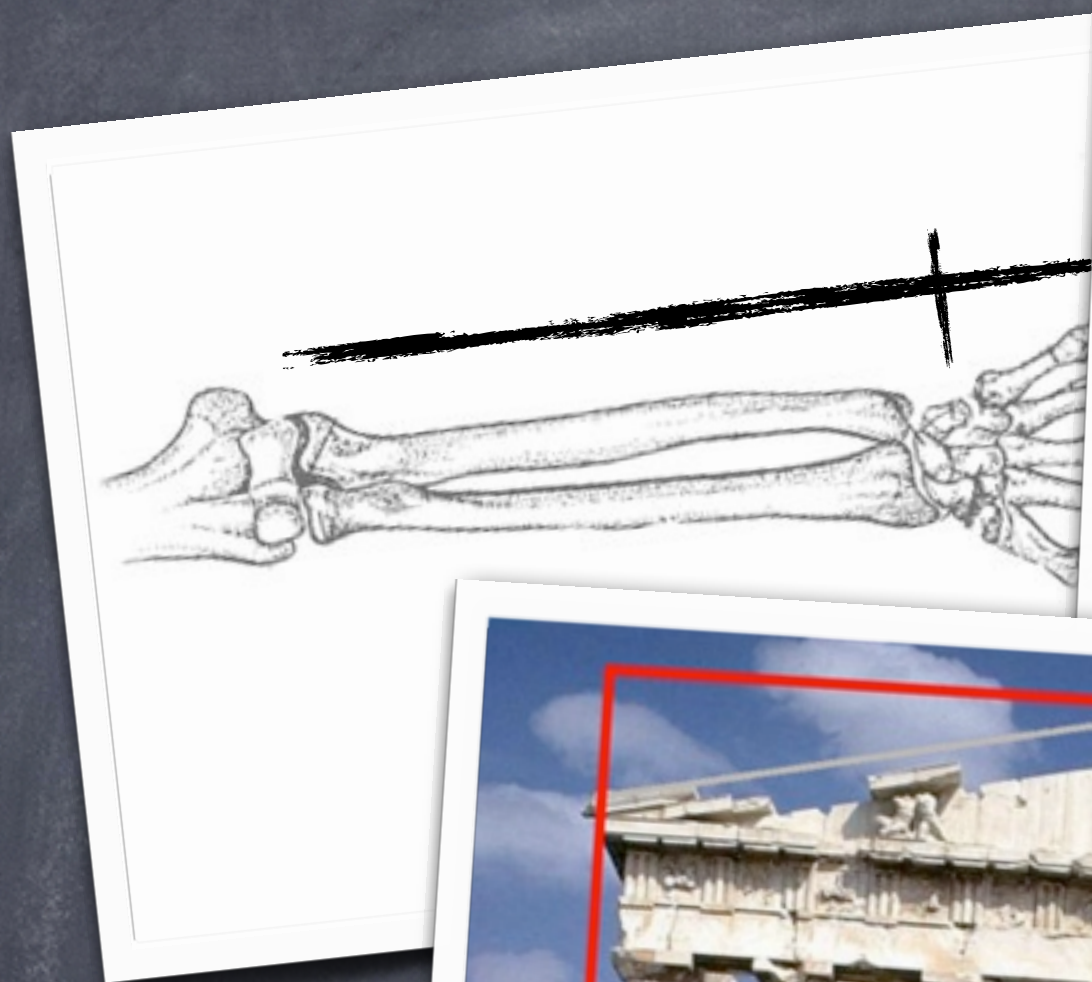
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sed posuere consectetur est at lobortis. Nullam quis risus eget urna mollis ornare vel eu leo. Maecenas sed diam eget risus varius blandit sit amet non magna. Aenean eu leo quam. Pellentesque ornare sem lacinia quam venenatis vestibulum. Etiam porta sem malesuada magna mollis euismod. Vivamus sagittis lacus vel augue laoreet rutrum faucibus dolor auctor.

In Music (perfect fifth)

WHY?

NATURE





BRAIN



Screens proportions

👁️ HDTV, iMac - 16:9 [0.56]

👁️ Google Nexus One, Nexus S - 3:5 [0.6]

👁️ MacBook Pro - 5:8 [0.625]

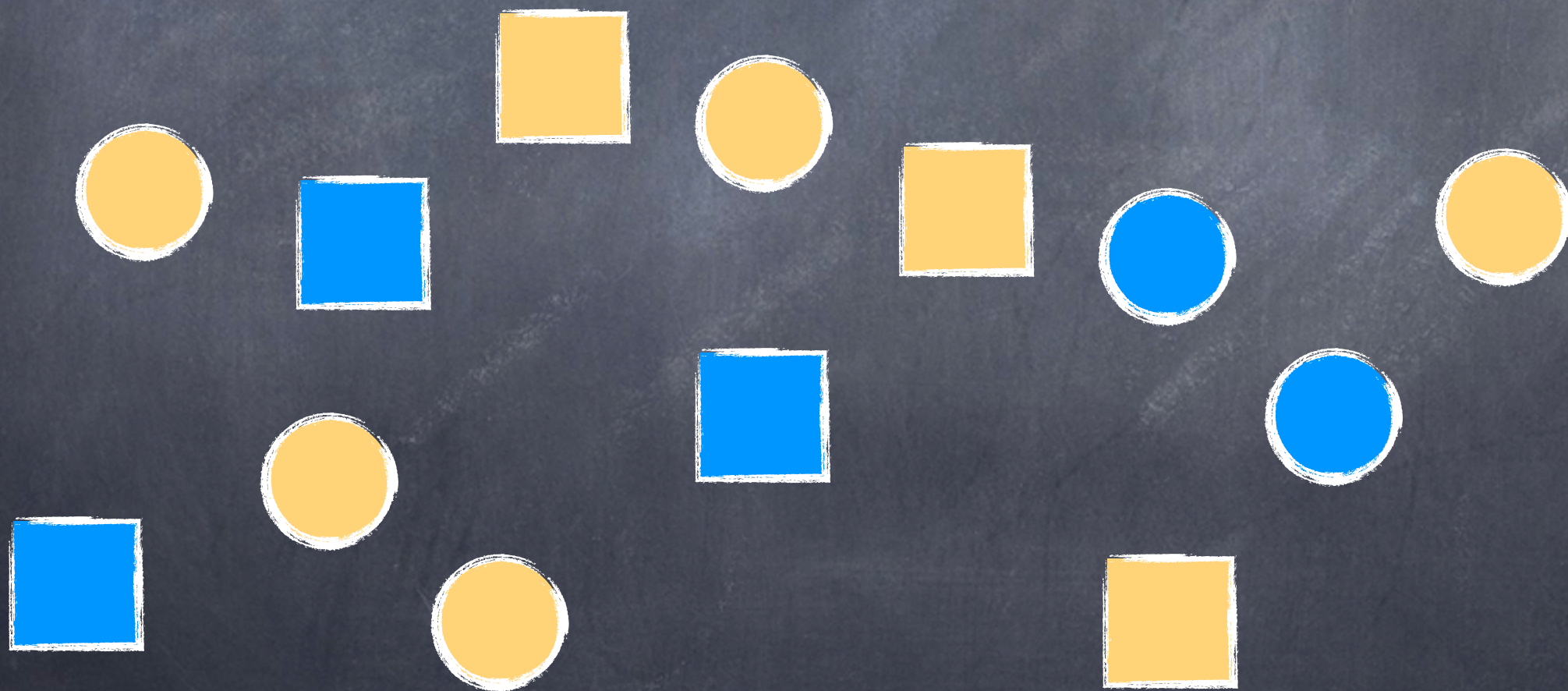
👁️ iPhone - 2:3 [0.66]

👁️ iPad, Kindle - 3:4 [0.75]

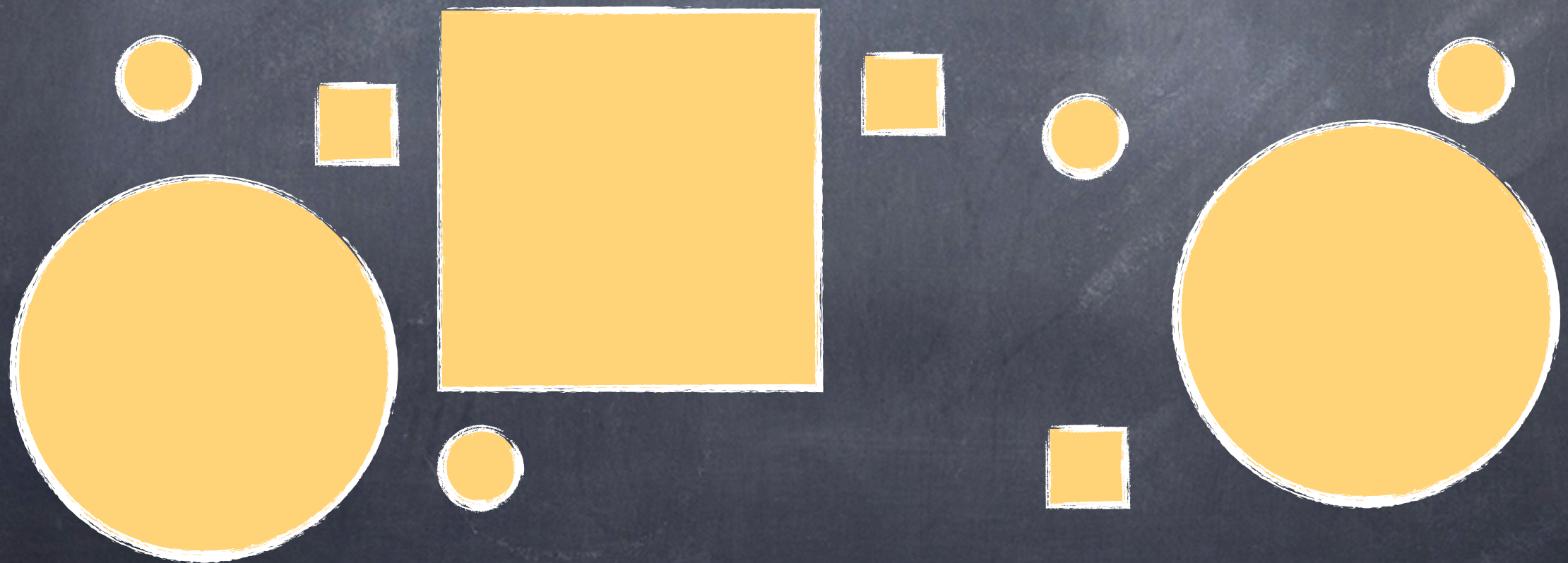
SIMILARITY



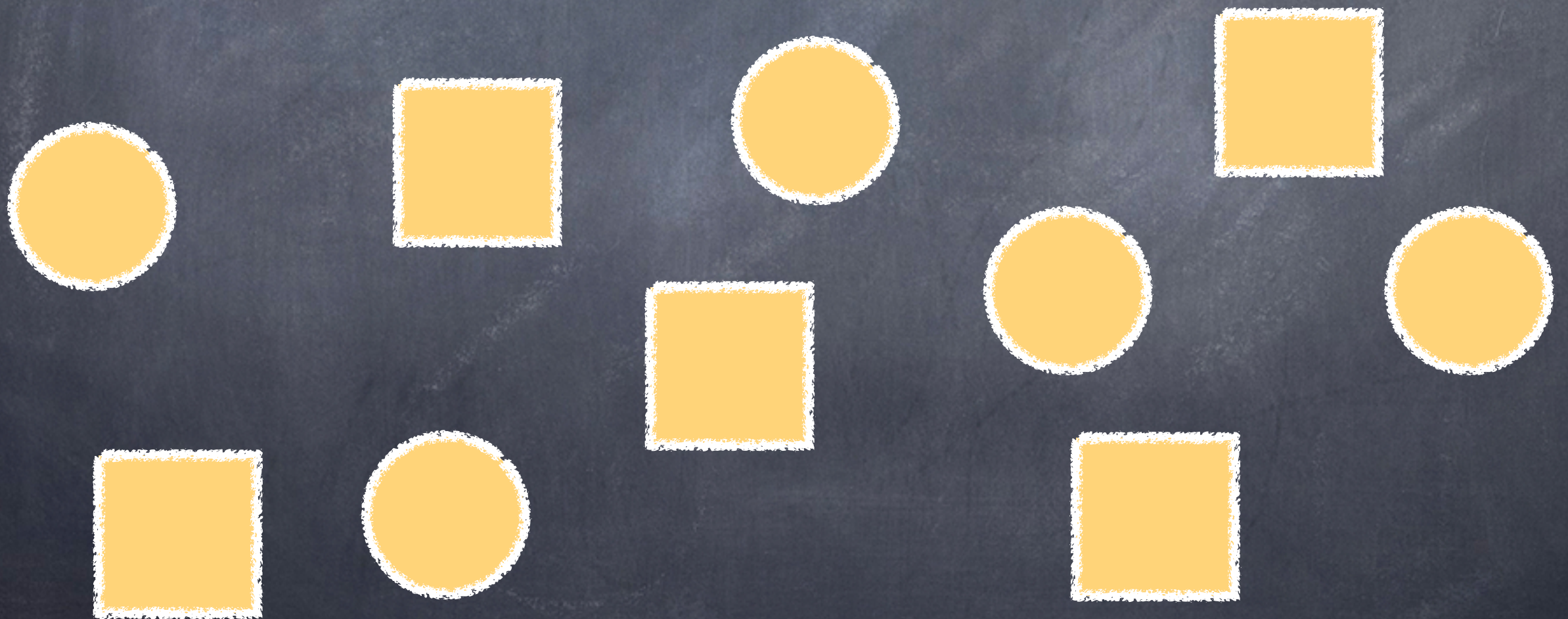
COLOR



SIZE



SHAPE









WHY?

GESTALT psychology

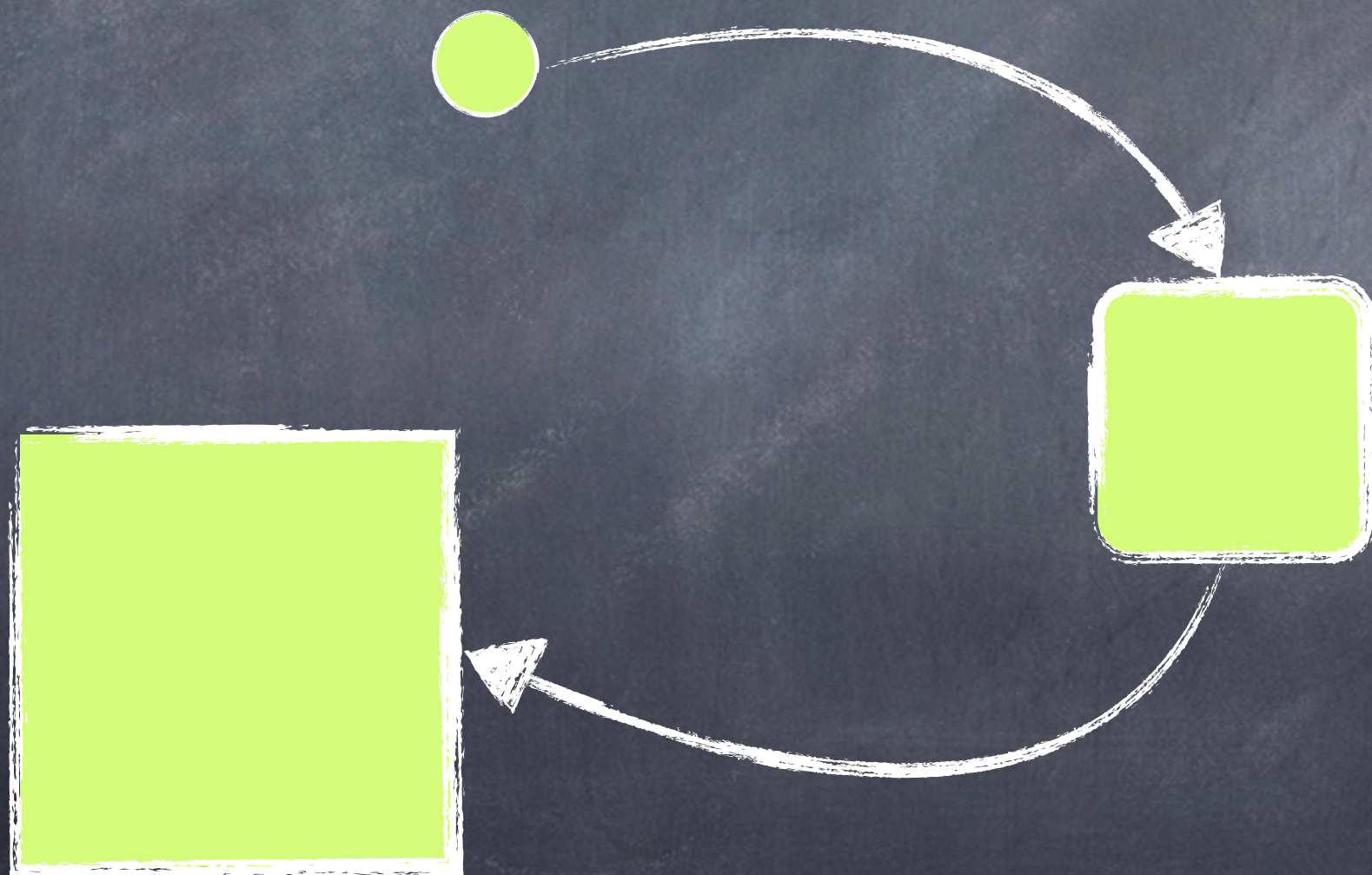
"The good thing about science is that
it's true whether or not you believe
in it."

Neil deGrasse Tyson

"Physics is like Sex: sure it may
have some practical results. But
that's not why we do it."

Richard P. Feynman

DIRECTION









DENYS
MISHUNOV
front-end developer

Pure CSS carousels

February 15th, 2012

Neat carousels using only CSS without
demo and explanations. Different trans
snippets.

PURE CSS CAROUSEL

Important! No javascript has been harmed in these demos. Nowhere.

Choose a style to preview:

CSS

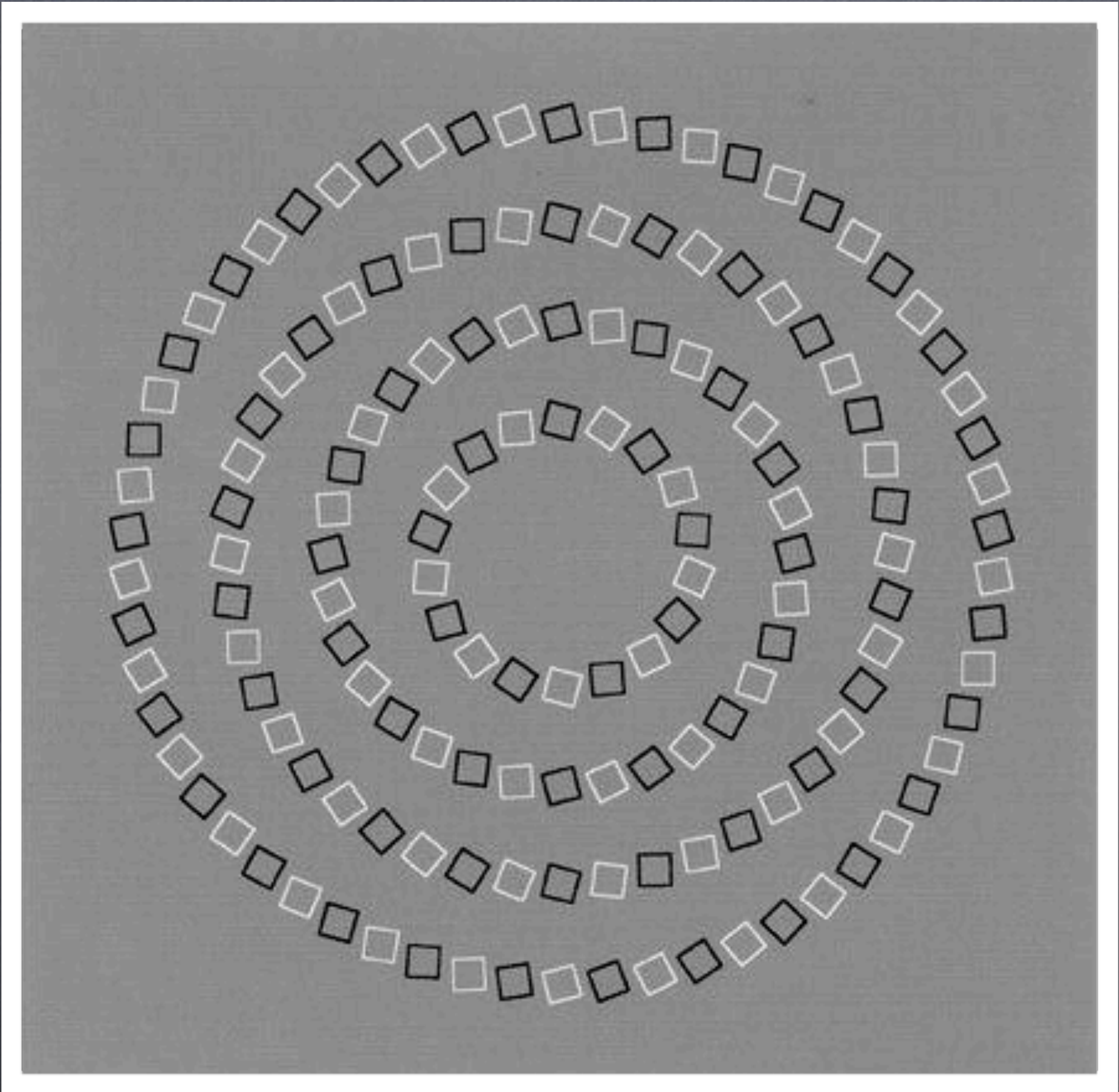
```
/* vertical */
.vertical {
  width: 287px;
  height: 430px;
  position: relative;
  overflow: hidden;
}
.vertical .items {
  -webkit-animation: vscroll 20s infinite;
  -ms-animation: vscroll 20s infinite;
  -ms-animation: vscroll 20s infinite;
  animation: vscroll 20s infinite;
}
/*
/* The keyframes calculations are based on assumption of 4 i
/* You should notice the pattern for your own calculations.
*/
@-ms-keyframes vscroll {
  0% {top: 0px;}
  25% {top: 100px;}
  50% {top: 200px;}
  75% {top: 300px;}
  100% {top: 400px;}
```

As you might have already seen, recently I had adde

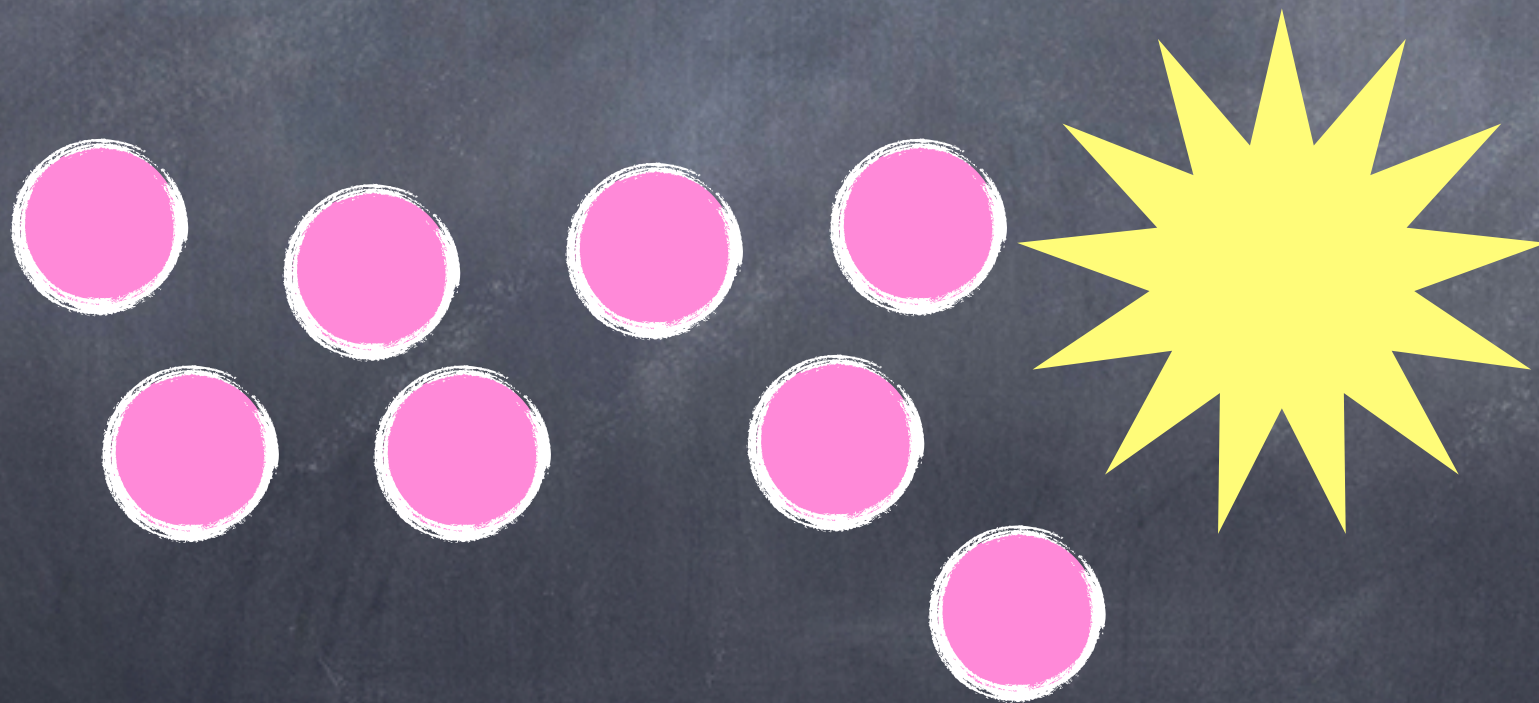
WHY?

BRAIN





CONTRAST



CONTRAST

• Similarity

• Direction

• Color

• more





MailChimp

Log In

Sign Up Free

ricing

Features

Resources

Support

Blog

Search



Easy Email Newsletters

MailChimp helps you design email newsletters, share them on social networks, integrate with services you already use, and track your results. It's like your own personal publishing platform.

2 million people use MailChimp. Join them today.

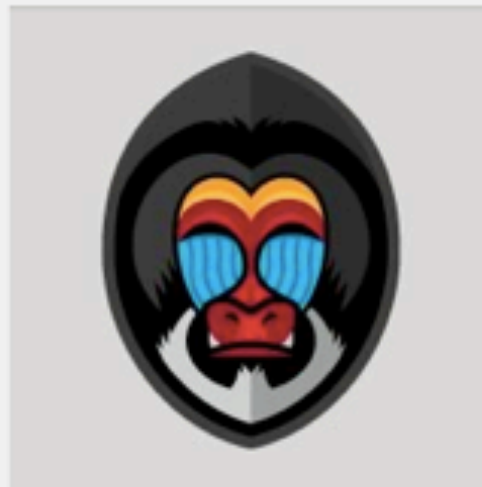
Sign Up Free

Still missing?

What's New



New Features:
Mobile Friendly Campaigns



New from MailChimp:
Transactional



Stories:
Michael D. Harris



Integration Spotlight:
InstaChimp

WHY?

"In everything, building the impartial
palace, but the unity is a vendor's plate

unfinished."
"Leaving something incomplete makes
it interesting, and gives one the feeling
that there is room for growth"

Yoshida Kenko

1330 - 1332

BRAIN

yes, again,
again
and again



• Proportion

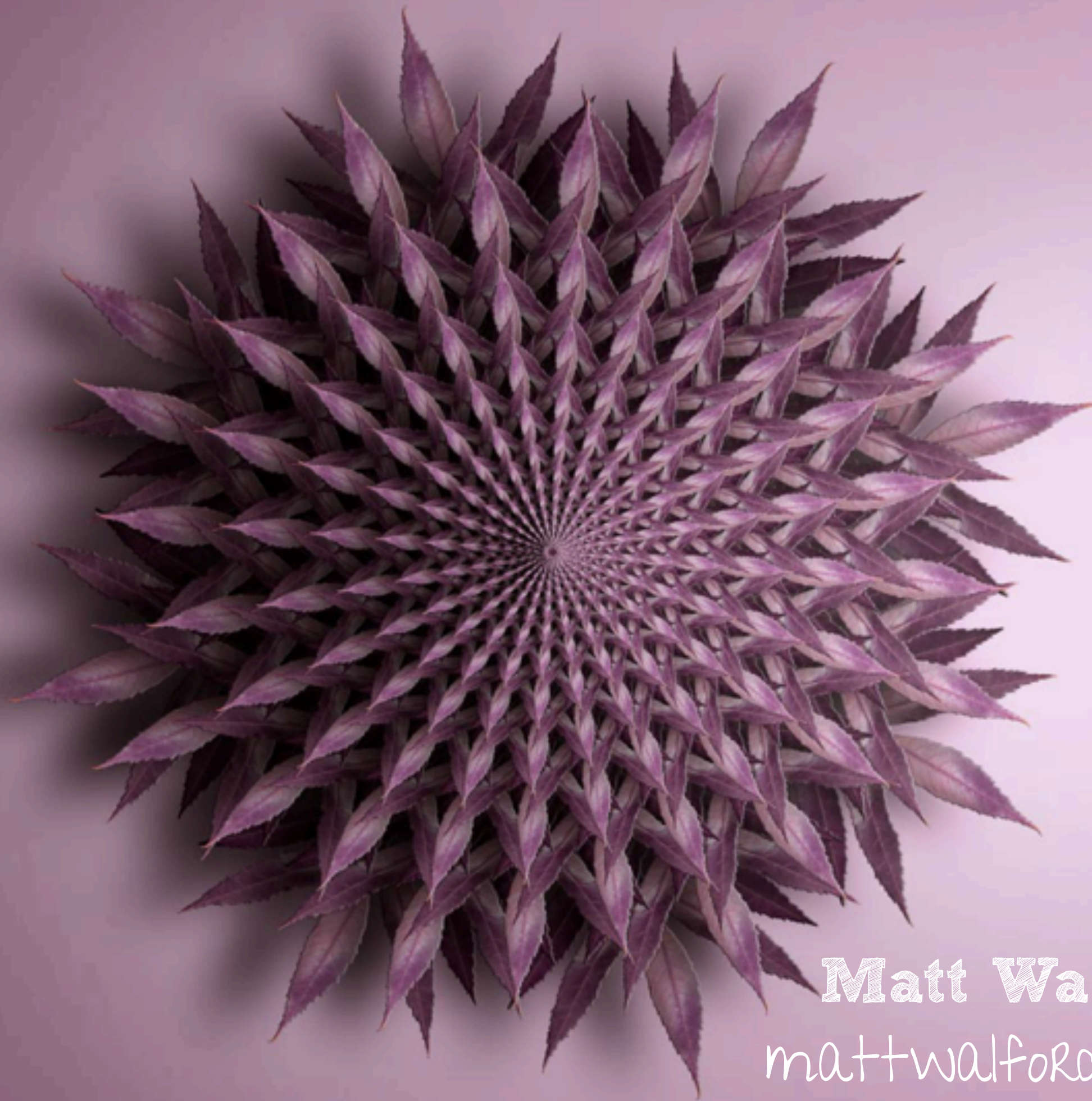
• Similarity

• Direction

• Contrast

RHYTHM

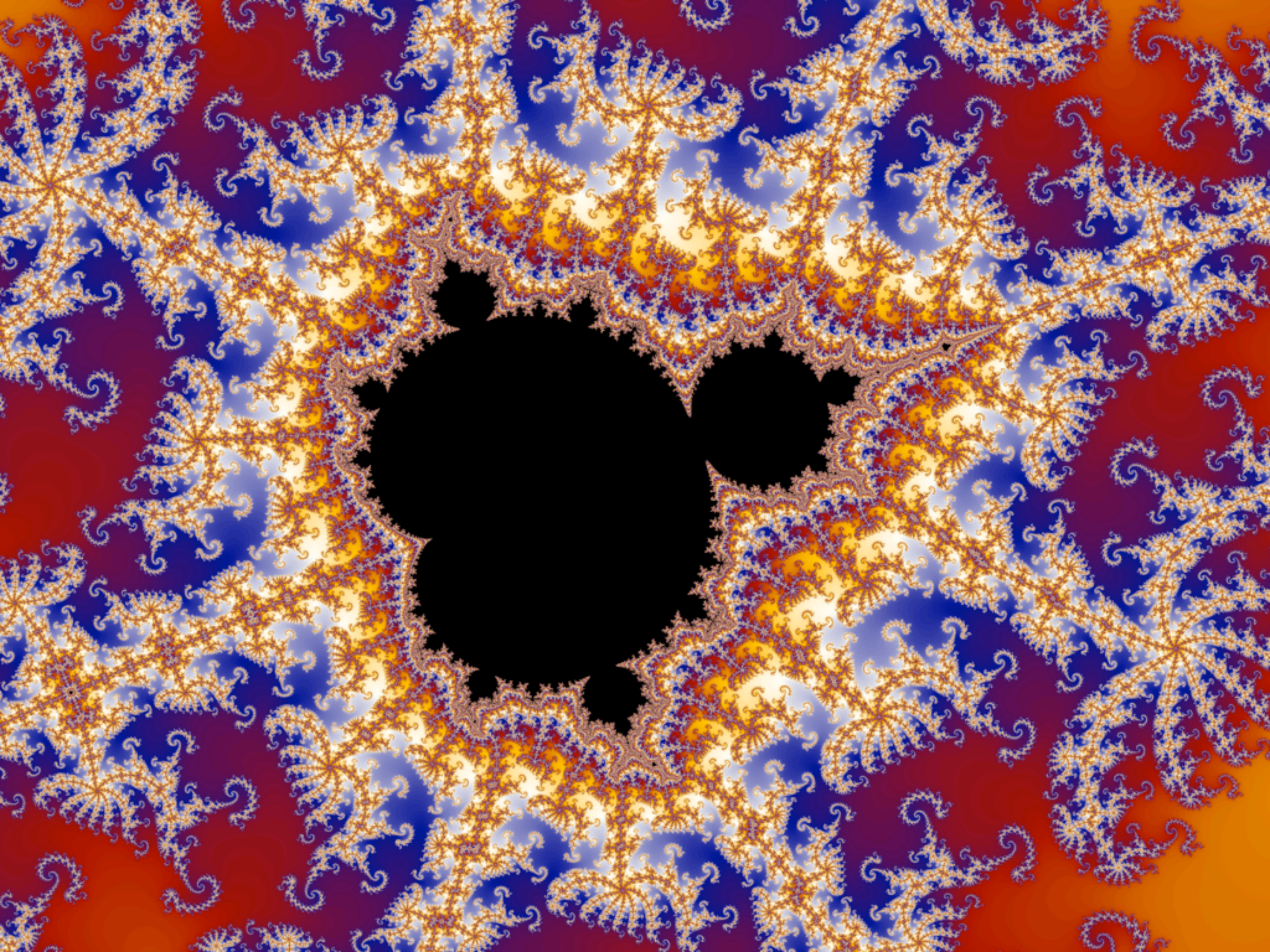
COLOR



Matt Walford
mattwalford.co.uk

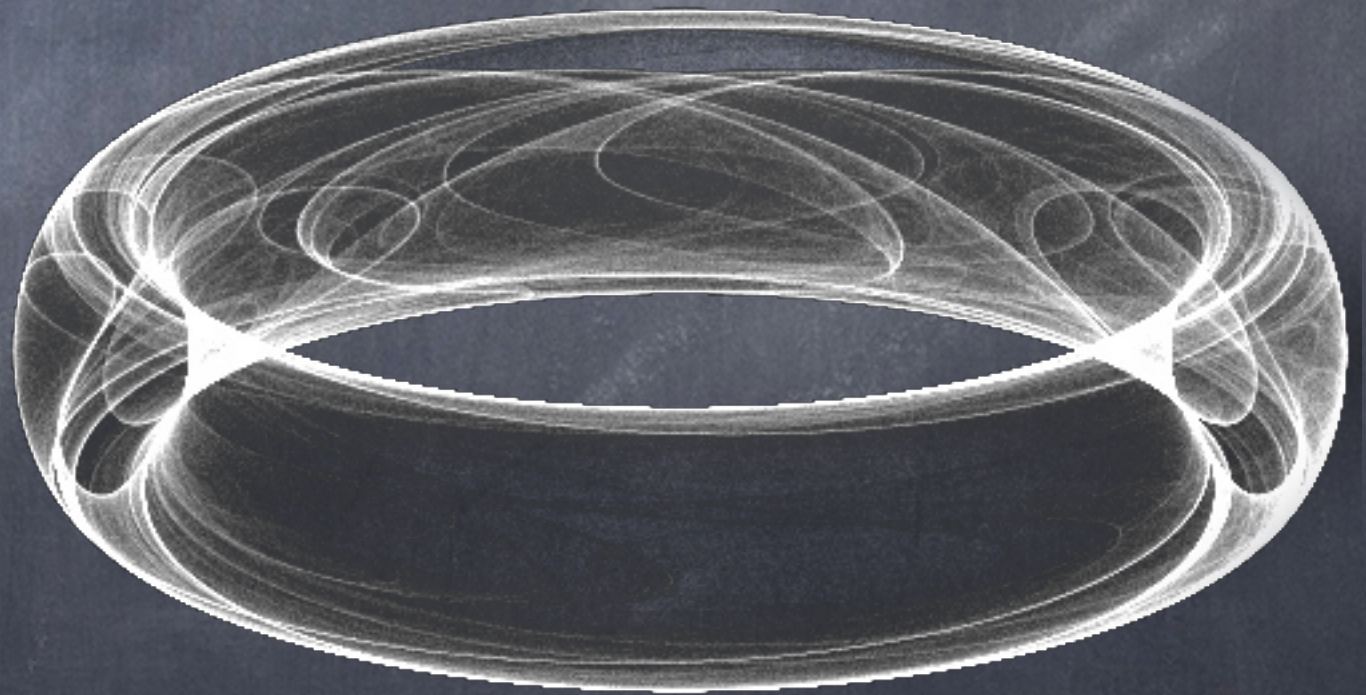


Matt Walford
mattwalford.co.uk



De Jong Attractor

$$\begin{aligned}x_{N+1} &= \sin(a y_N) - \cos(b x_N) \\y_{N+1} &= \sin(c x_N) - \cos(d y_N)\end{aligned}$$



Show me more!

Lorenz Attractor

$$\begin{aligned}d_x/d_t &= \sigma(y-x), \\d_y/d_t &= x(\rho-z) - y, \\d_z/d_t &= xy - \beta z\end{aligned}$$

Show me more!

**Don't be afraid of
new challenges**

"If we want better sites,
better work, and better-
informed clients, the need to
educate begins with us."

Jeffery Zeldman

THANK YOU

Typefaces

👁 "Give Me Glory"
by Kimberly Geswein

👁 "Sketch Rockwell"
by Lukas Bischoff

Music

👁 "A Necessary End" by Saltillo

👁 "Star Wars: A New Hope (Main Theme)" by
"City of Prague Philharmonic" (comp. John Williams)

👁 "The way You Look Tonight" by Frank Sinatra

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