

Visual Storytelling I

Session Three

MVIS 5101 March–May 2023

The plan for today:

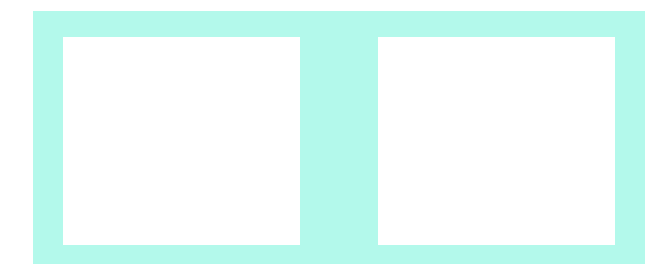
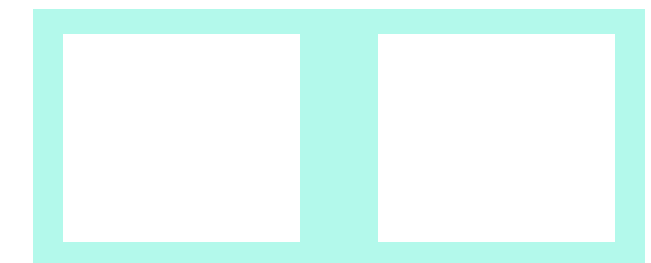
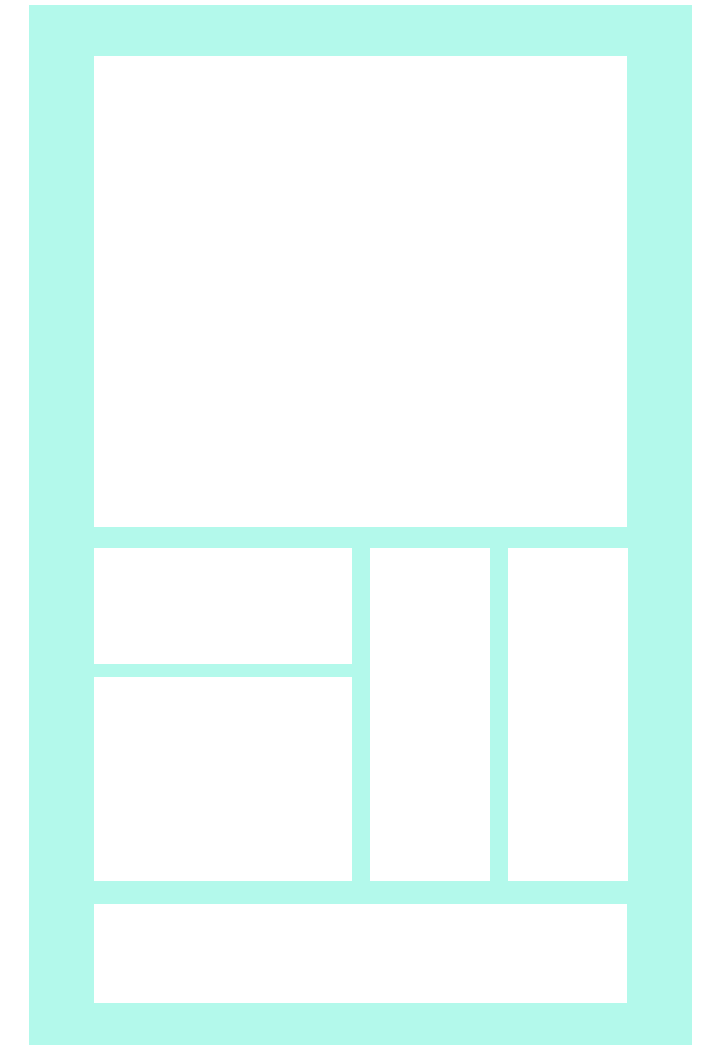
- Description of the Final Project
- Patterns and organizing text
- Description of the next assignment
- Share some assignments for feedback

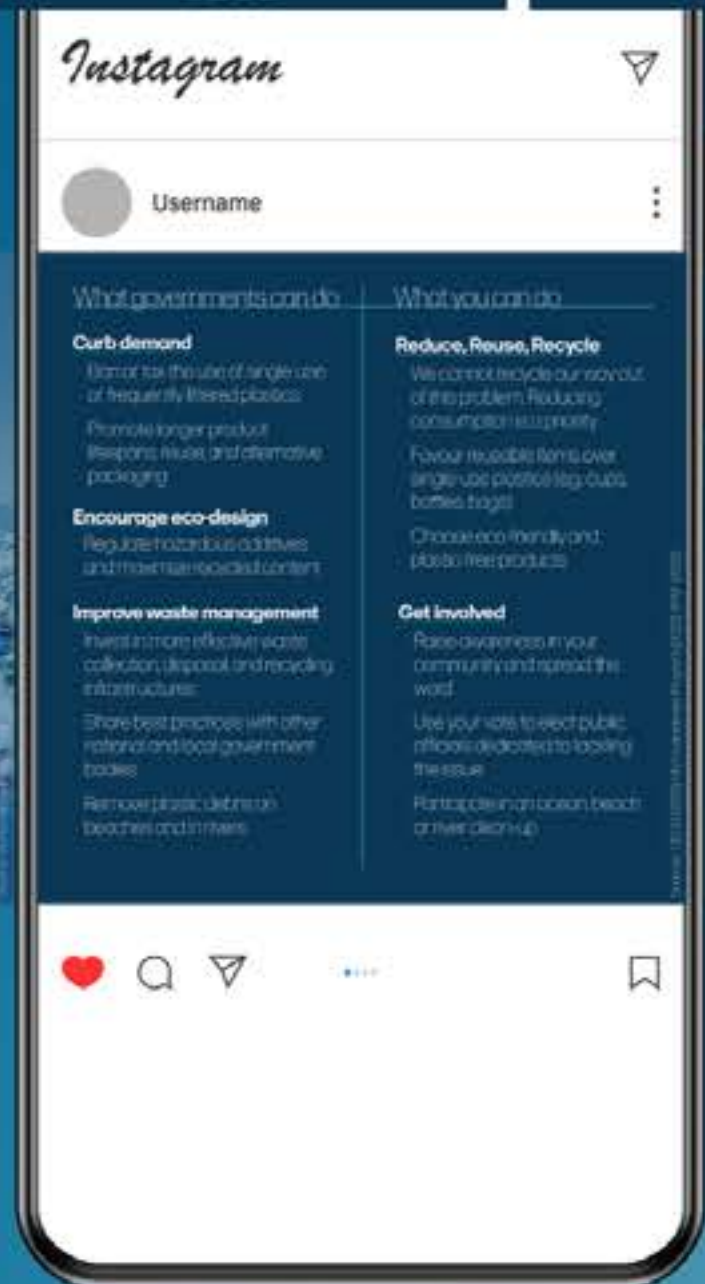
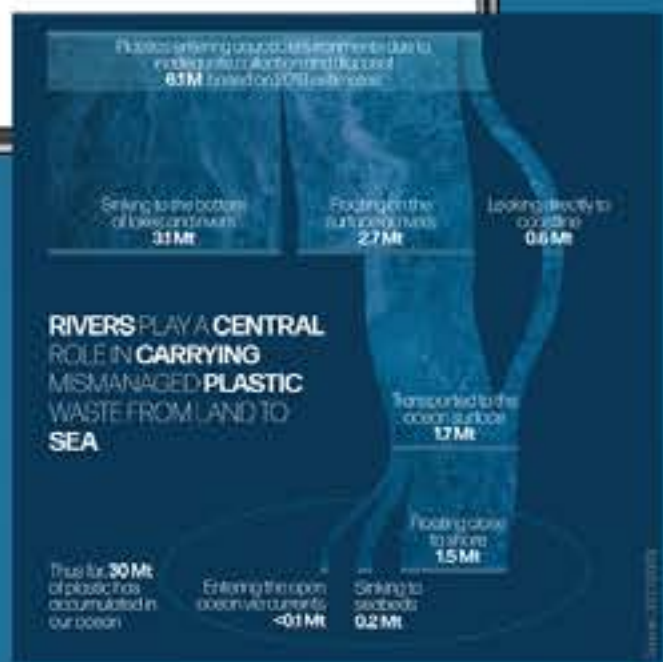
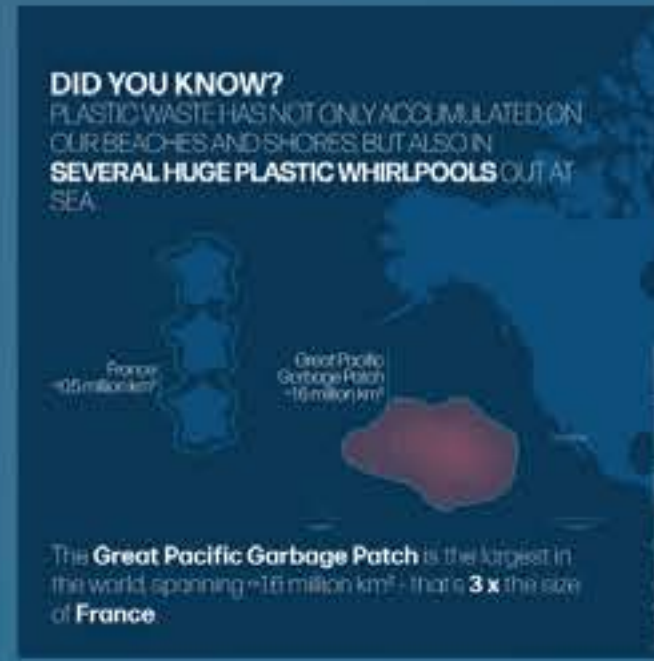
Final Project preview

The Final Project

Part 1 (due class 6)

- Find data that you're interested in and will allow you to meet the requirements.
- Choose an adult audience for your project.
- Choose a format (ie: smartphone, series of billboards, poster, booklet, collection of postcards, etc).
- Plan for at least 6 “sections” including at least 3 forms of data visualization.
- Submit a PDF containing sketches of your concept, sample of the type hierarchy, and a grid that will help structure your sketch





FACTS & FIGURES

SELF-ESTEEM

PRODUCTIVITY

TREATMENT

STRESS MANAGEMENT

FACTS & FIGURES

Who Has Adult ADHD?

Category	Prevalence
Overall	4.4%
Sex - Female	5.2%
Sex - Male	3.4%
Age - 18-24	4.1%
Age - 25-34	5.8%
Age - 35-44	4.6%
Race/Ethnicity - Hispanic	2.1%
Race/Ethnicity - White*	5.4%
Race/Ethnicity - Black*	1.9%
Race/Ethnicity - Other*	1.4%

Data from National Comorbidity Survey Replication (NCS-R). Prevalence of Current ADHD Among U.S. Adults (2001-2003).

SELF-ESTEEM

Build a Strengths Inventory

Research shows that people who focus on their strengths every day are 6 times more likely than others to be engaged in their jobs, and more than 3 times as likely to report having an excellent quality of life.

Take 30 minutes to respond to the following questions and record your responses.

- What do people say you are really good at?
- What activity gives you energy?
- What's working in your life?
- What do you think you're good at?
- What do you enjoy doing?
- What's important to you?
- What are you looking forward to in the next two to three weeks?
- What are you proud of?

PRODUCTIVITY

Prioritize with the Eisenhower Matrix

Having a hard time getting started and your to-do just keeps growing? This tool can help you get un-stuck by identifying what needs to get done first. Often our brains convince us that everything is urgent. **Breaking down your tasks into the categories below will help to prioritize.**

Urgent and Important	Urgent but Not Important
Important but Not Urgent	Neither Urgent nor Important

TREATMENT

Not All Stimulants are Created Equal

Of the 43 medications currently available that stimulate in the same way that amphetamine and methylphenidate do, **only three** make ADHD better. The other 40 actually make it worse. **Just being a stimulant is not enough to make a medication work in an ADHD brain.**

STRESS MANAGEMENT

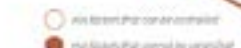
Take a Deep Breath

One of the most powerful tools for stress relief is our own breath.

Box Breathing
Imagine breathing around the box below following the instructions along each side. Repeat the cycle 7 or more times. As you get more comfortable explore extending the counts.

Check off your risk and risk reduction factors to help make a plan and understand your personal risk.

Check off your risk and risk reduction factors to help make a plan and understand your personal risk



1 Year Risk Calculation _____

Concerns/Symptoms _____

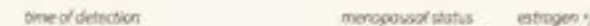


1 in 8 women will develop breast cancer

one in 29. In women ages 70 and older, one in 26 is at risk of developing the disease.



Some women with one or more breast cancer risk factors may decide to get



A variety of tree types are often used in combination. Talk to your team about the best plan for you.

understanding your breast density

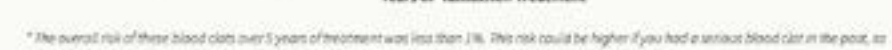
Female breasts contain different types of fatty tissues, and also

Women with dense breasts have a higher risk

Silicones (silicones) is often used when silicones are mentioned.

1

Only 30% of people



^{***}The risk of developing endometrial cancer from Tamoxifen is about 1 in 500—a small risk, but higher than that for women in the general population. Tamoxifen also slightly increases the risk of uterine sarcoma. The overall increase in the risk of uterine cancer with Tamoxifen use is low (less than 2%).

The Final Project

Where can I find data?

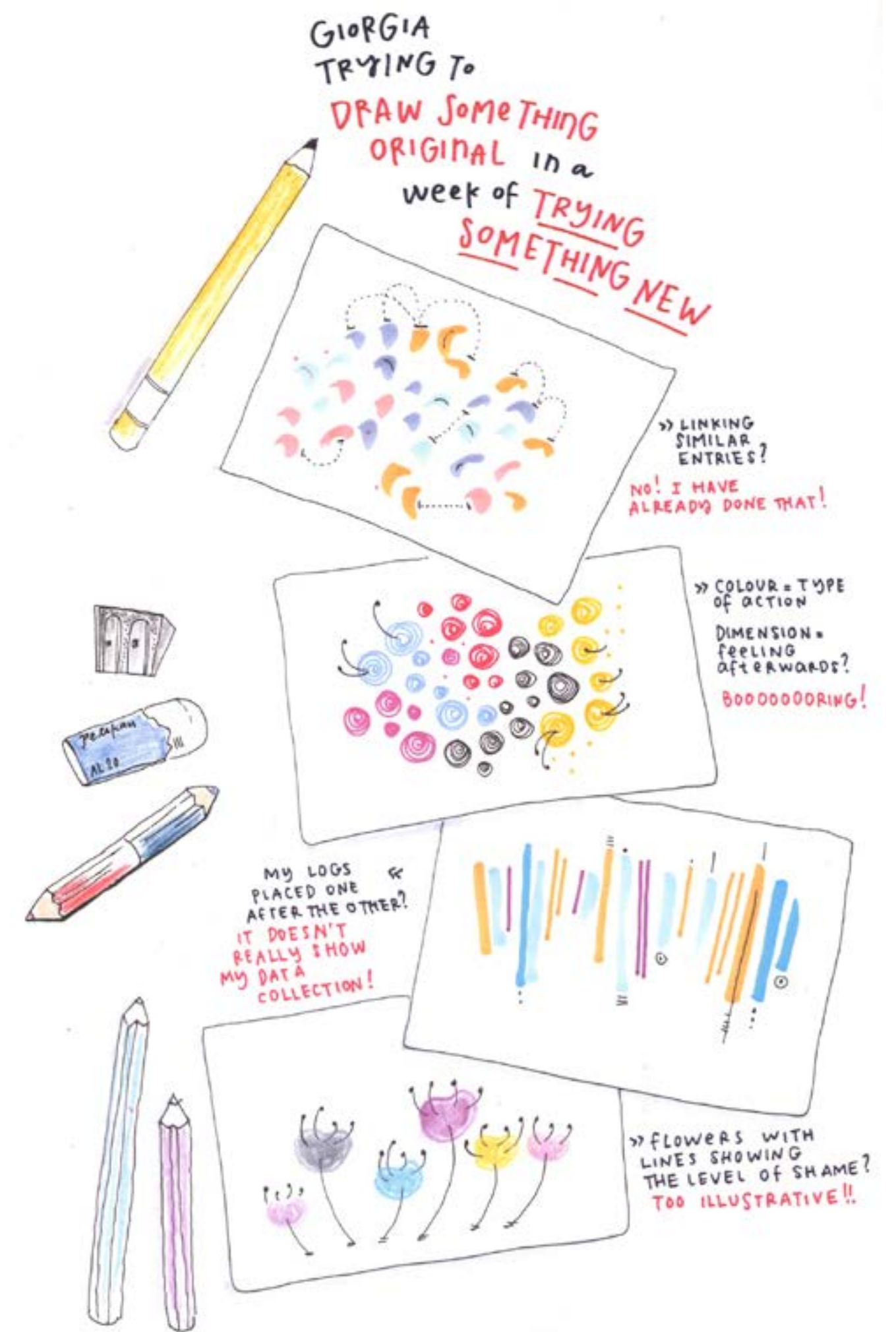
Use any data you'd like that allow you to meet the requirements, but if you're not sure where to look, you can try these resources:

- [And Data archive](#)
- [American Community Survey Data](#)
- [Data.gov](#)
- [Our World in Data](#)

The Final Project

What should the sketches include?

- Rough layout of your visual narrative.
- Concepts for your visualizations that will be in your narrative.
- Use a writing implement if you can. B/W or color is fine.



Patterns & Organizing text

“Finding the boundaries of objects is an important function of the pattern processing systems. In order for the brain to find an object, it must somehow be distinguished from other objects in the environment...”

- Colin Ware

Natural semantics

We use spatial metaphors in natural language (*connected to, built on, etc*). Similarly, in data visualization, we use a big graphical shape to represent a large quantity in a bar chart.

These spatial metaphors help us create order within disorder.

Nicholas Felton



Gestalt Principles

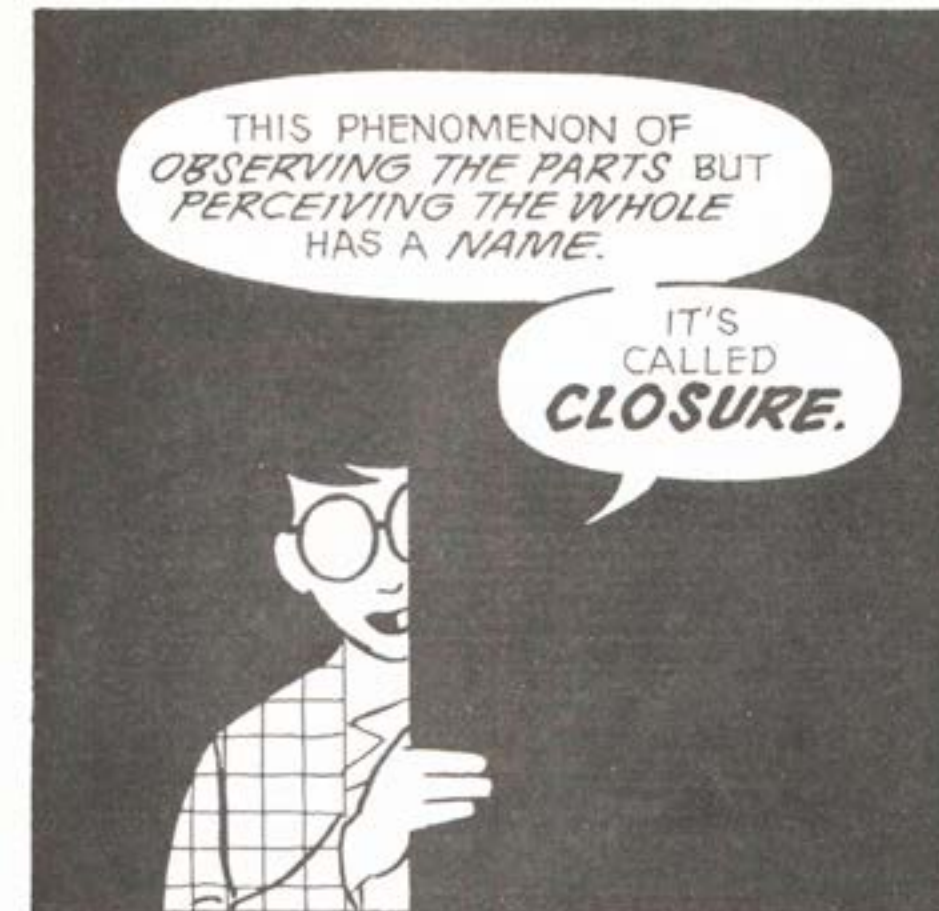
“Gestalt” means “unified whole” in German.

- Devised in the 1920s by German psychologists Max Wertheimer, Kurt Koffka and Wolfgang Kohler. They aimed to understand how humans typically gain meaningful perceptions from the chaotic stimuli around them.
- In design, the main idea is that the mind “informs” what the eye sees by perceiving a series of individual elements as a whole.
- They identified a set of principles which address the natural compulsion to find order in disorder.

Closure

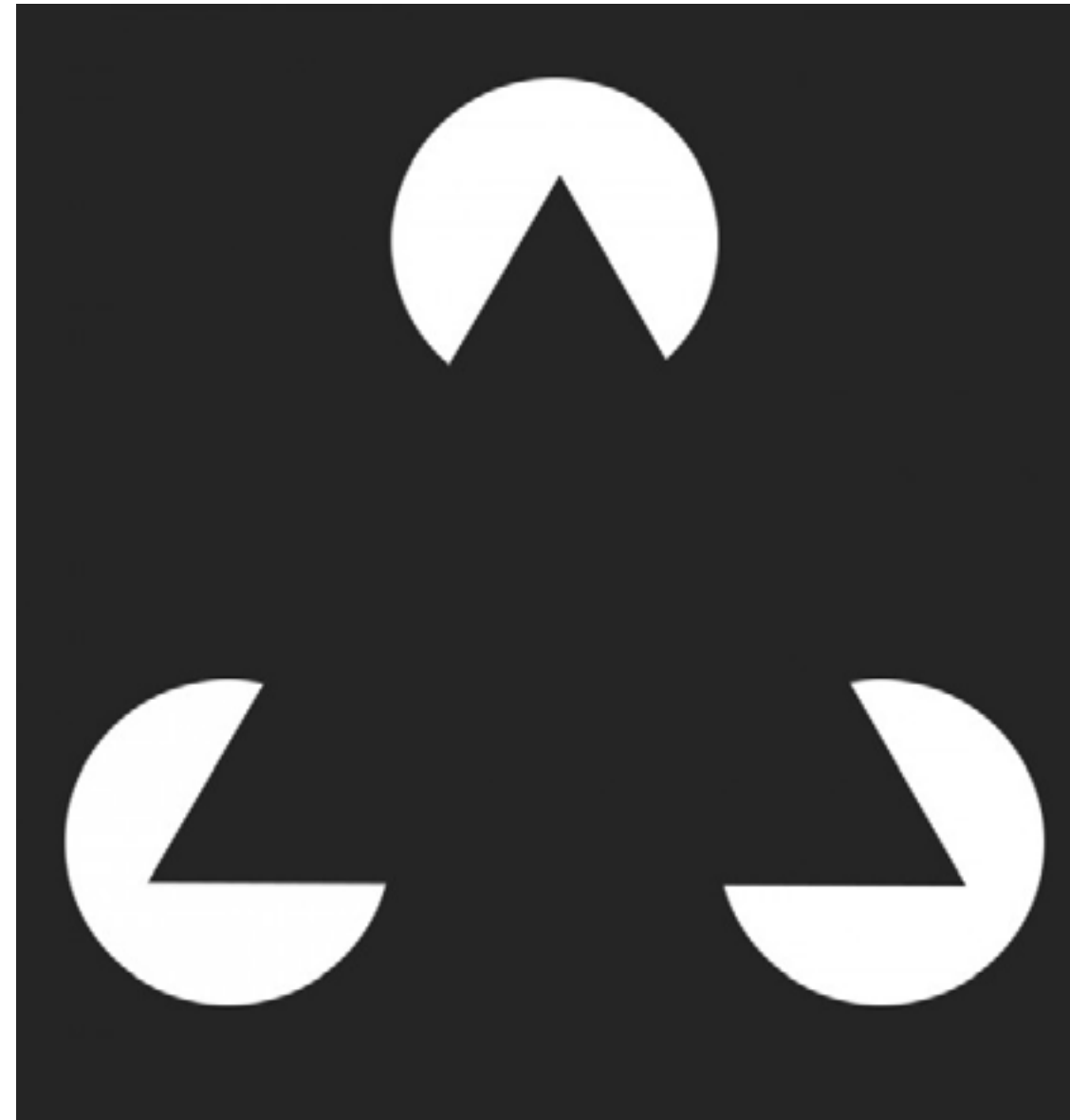
Scott McCloud

All of us perceive the world as a whole through our senses. But even the most widely traveled person senses just a fragment of it.



Closure

Our ability to perceive patterns under distortions and when partially hidden is fundamental to visual intelligence.



World Wildlife Fund



Closure

Ability to perceive patterns under distortions and when partially hidden is fundamental to visual intelligence.

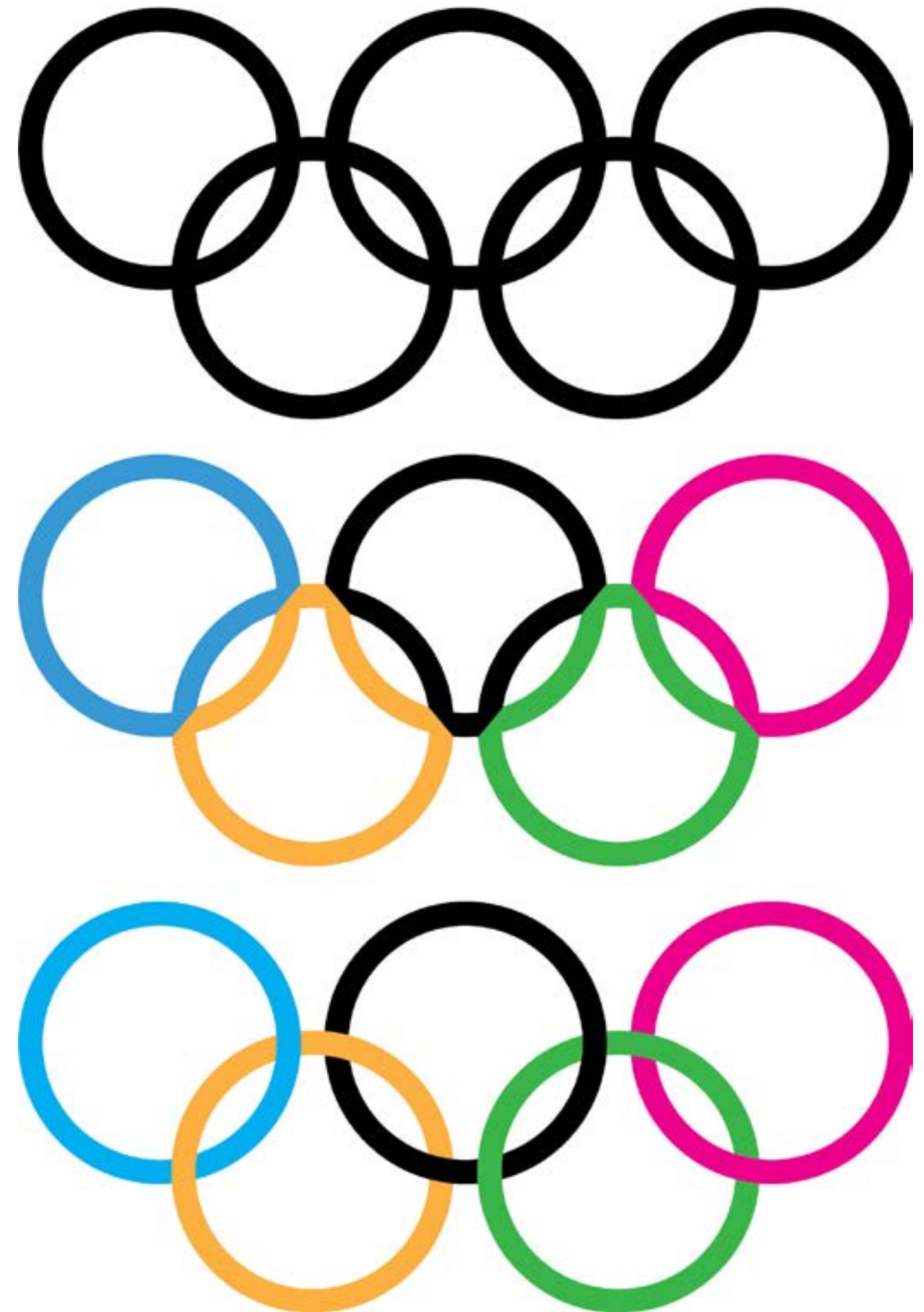
Tobias Frere-Jones

Sum of the parts

Continuity

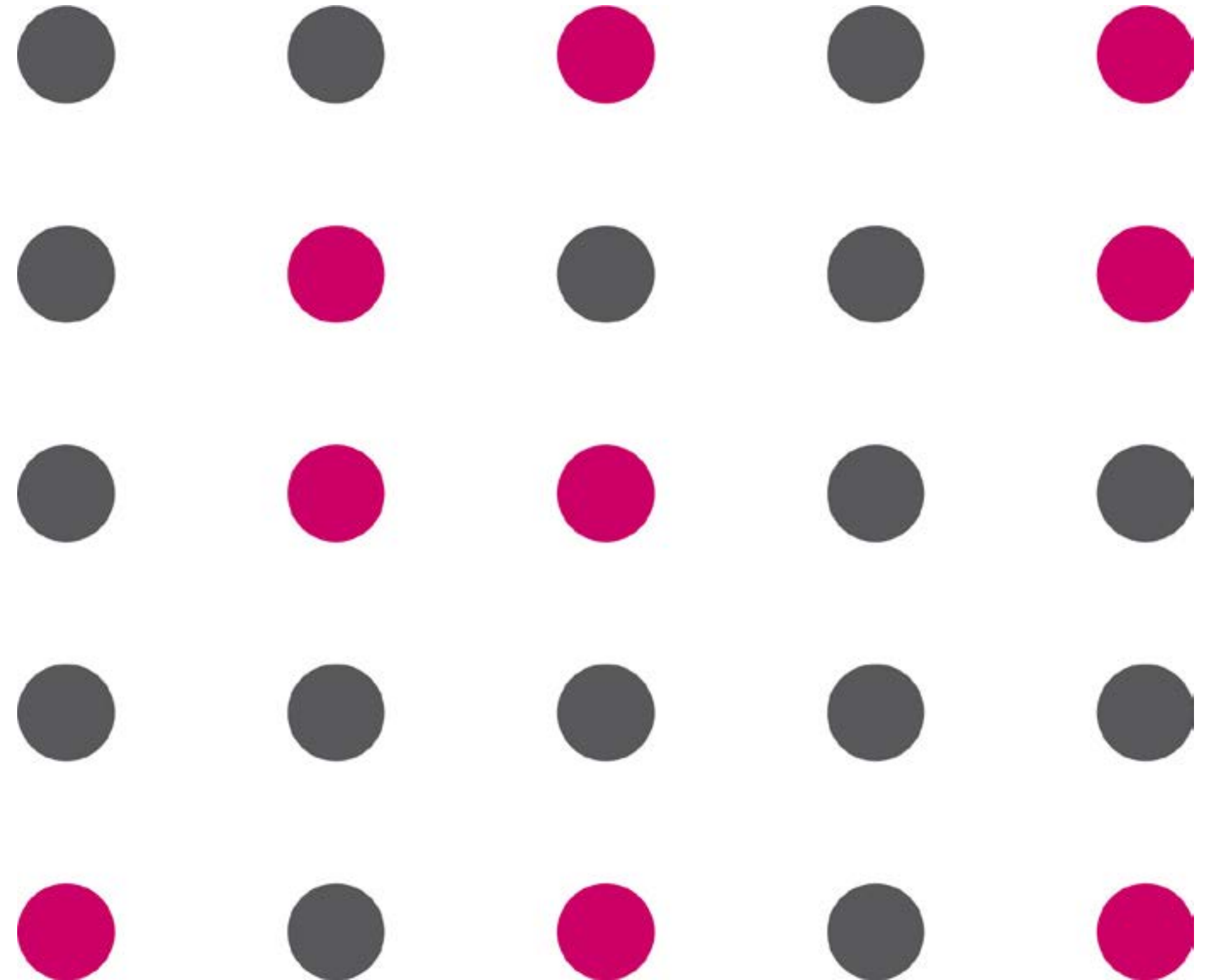
We're always looking for the simplest possible way to understand a thing. We can try to see the more complex arrangement, but it takes more effort—our eyes just want to return to the simpler pattern.

Our brains tend to prefer a consistent, uninterrupted line. We see separate dots as part of a line, and we assume it continues in the same direction at where it intersects.



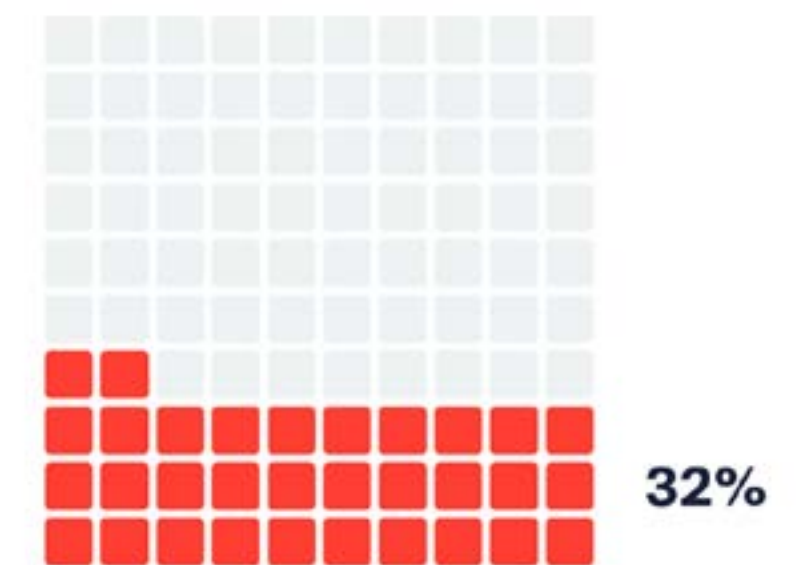
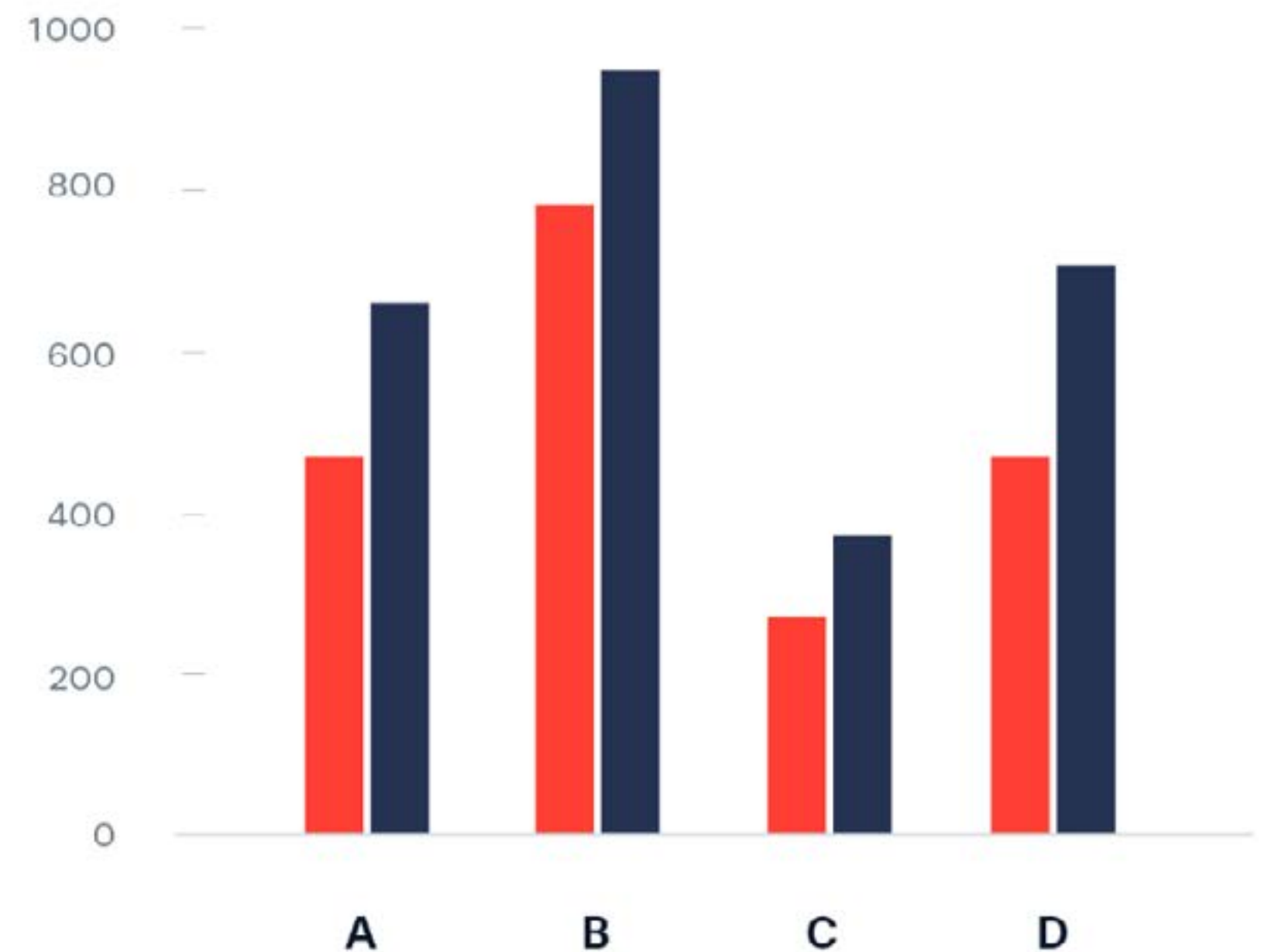
Similarity

When we see elements that share characteristics as more related than those that don't. This occurs in feature channels like size and shape.



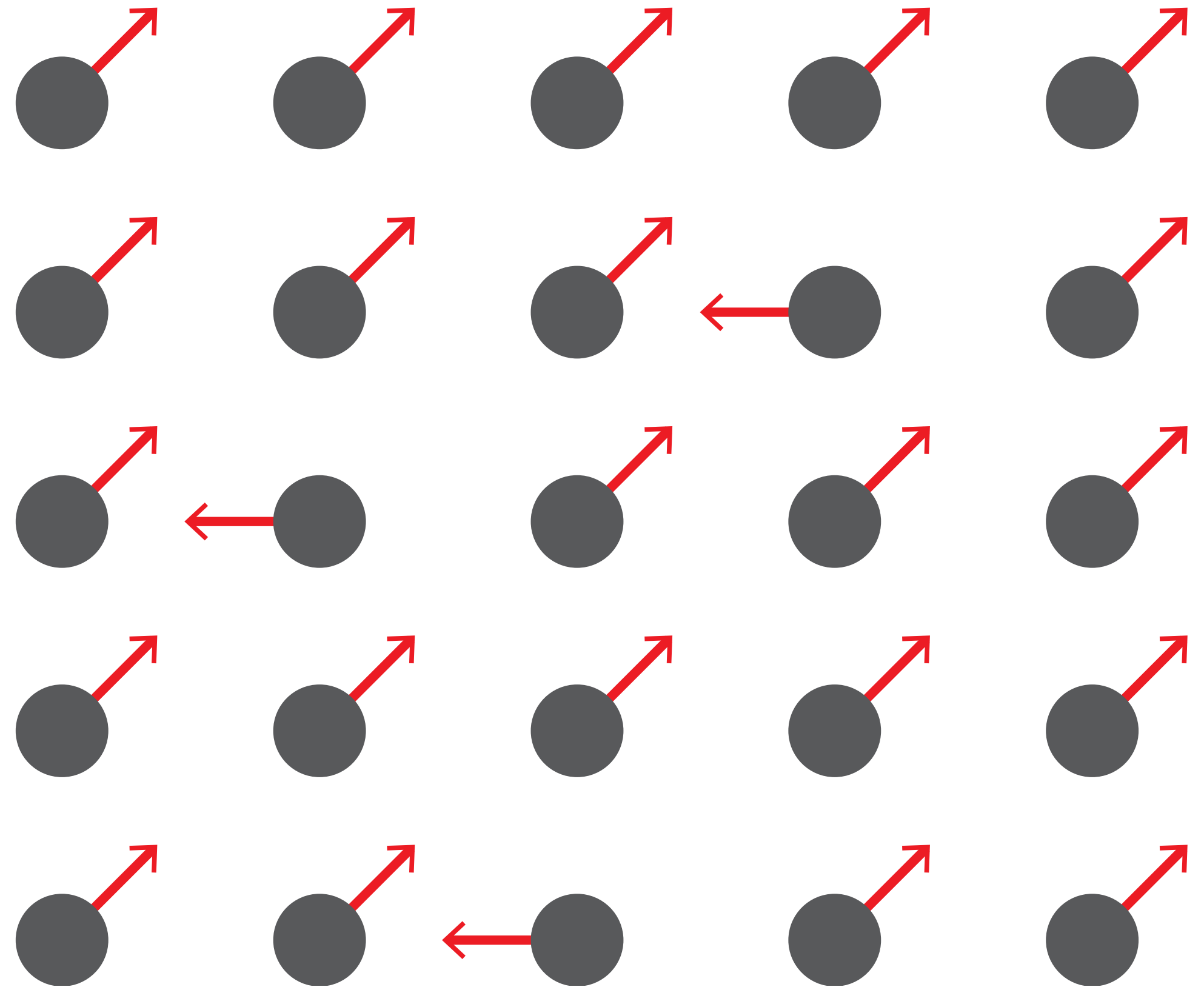
Similarity

When we see elements that share characteristics as more related than those that don't. This occurs in feature channels like size, color, and shape.



Synchrony

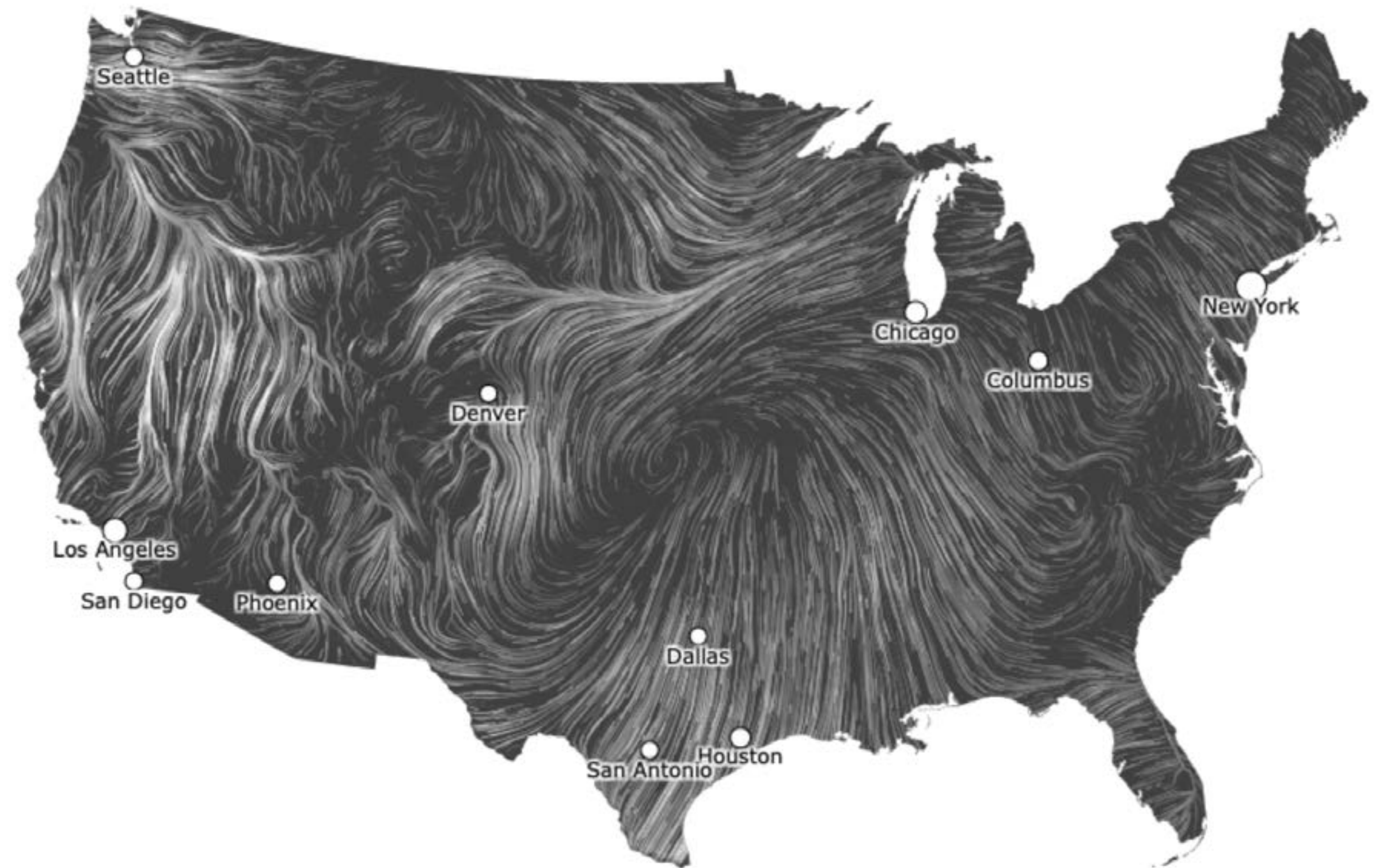
We tend to group objects that are facing or moving in a similar direction.



Synchrony

We tend to group objects that are facing or moving in a similar direction.

Fernanda Viégas and Martin Wattenberg



Synchrony

Filippo Marinetti

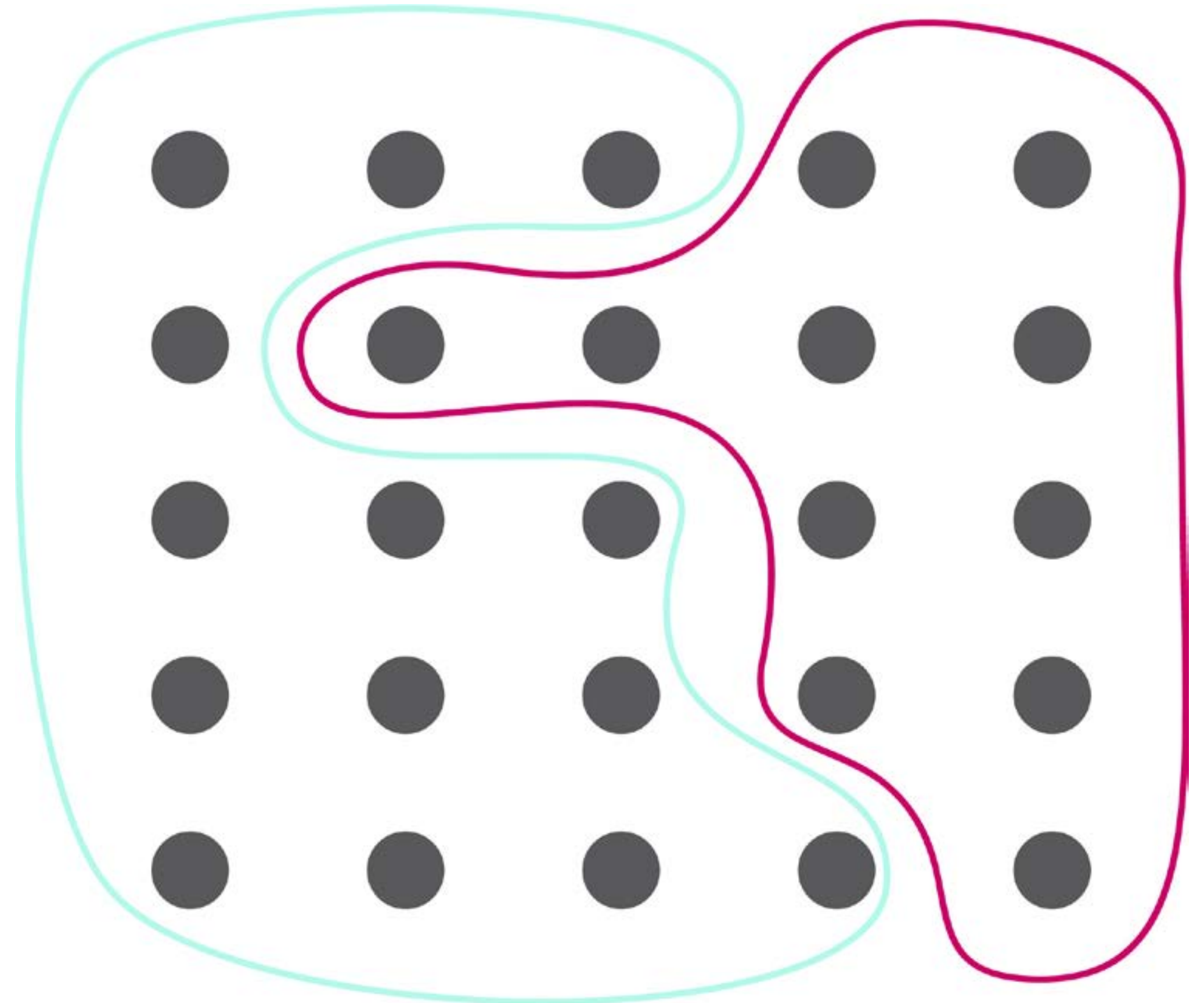
We tend to group objects that are facing or moving in a similar direction.

This is seen with images as well as text.



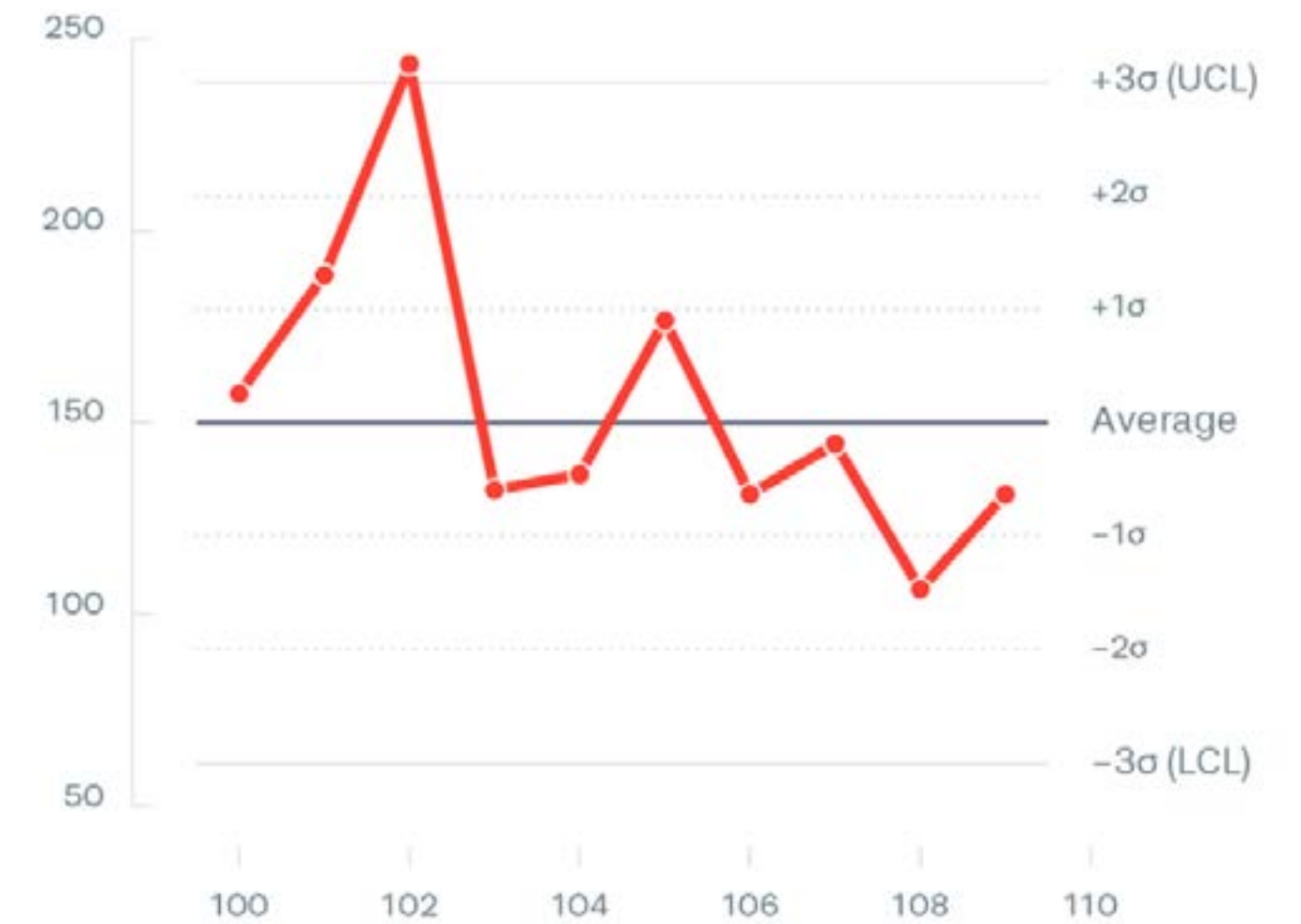
Common regions

You see elements as part of a group if they're enclosed within the same region

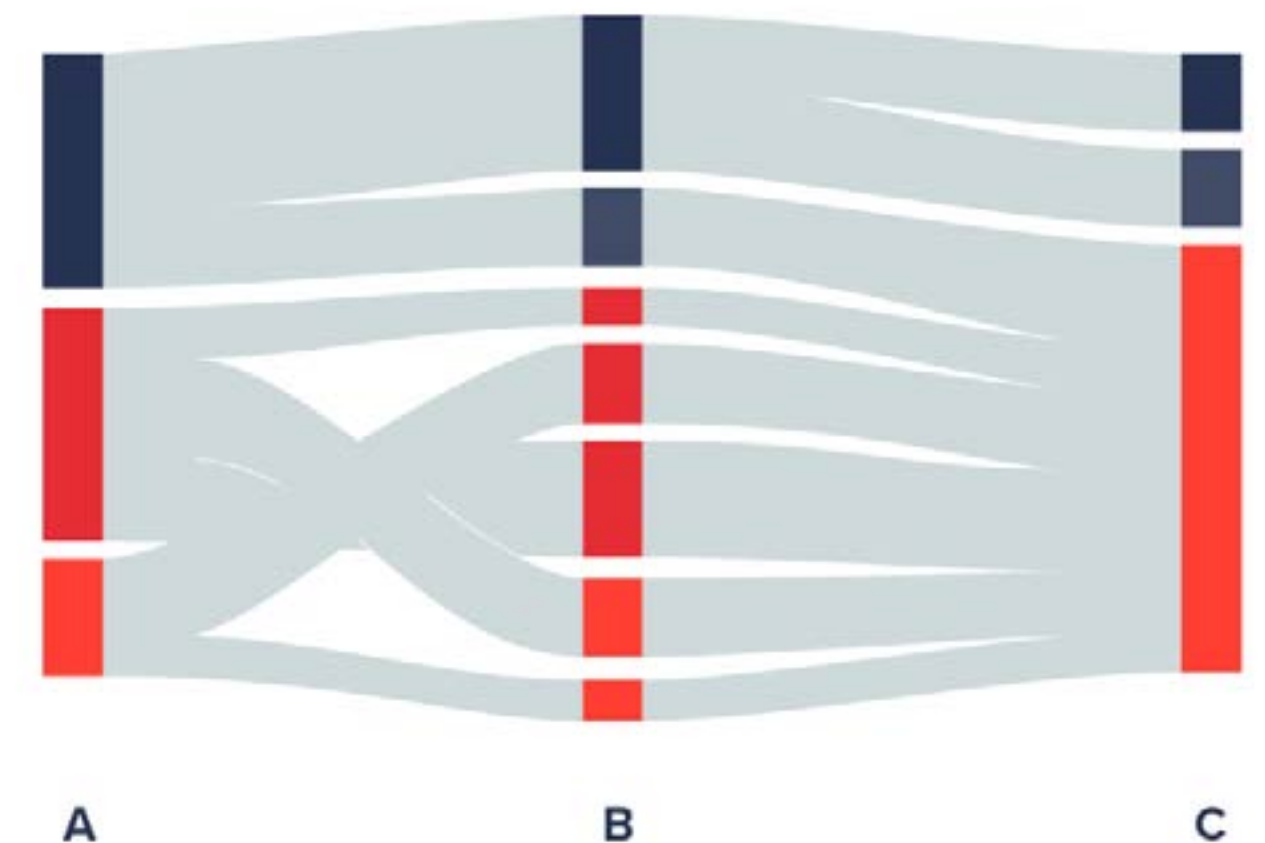


Connectedness

Relationships between entities can be strengthened if they are visually linked together by lines. Linking between objects make them related.

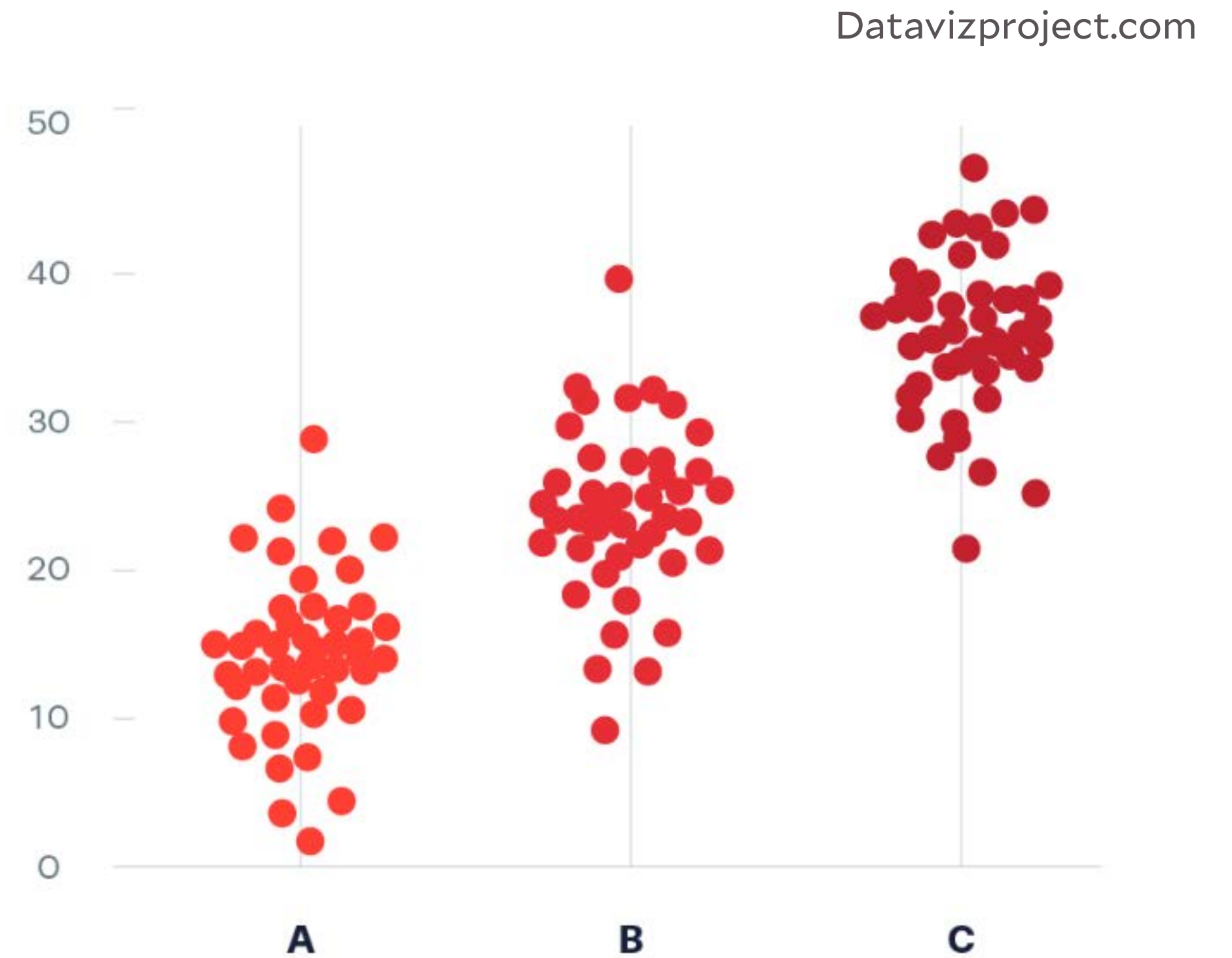


Datavizproject.com



Proximity

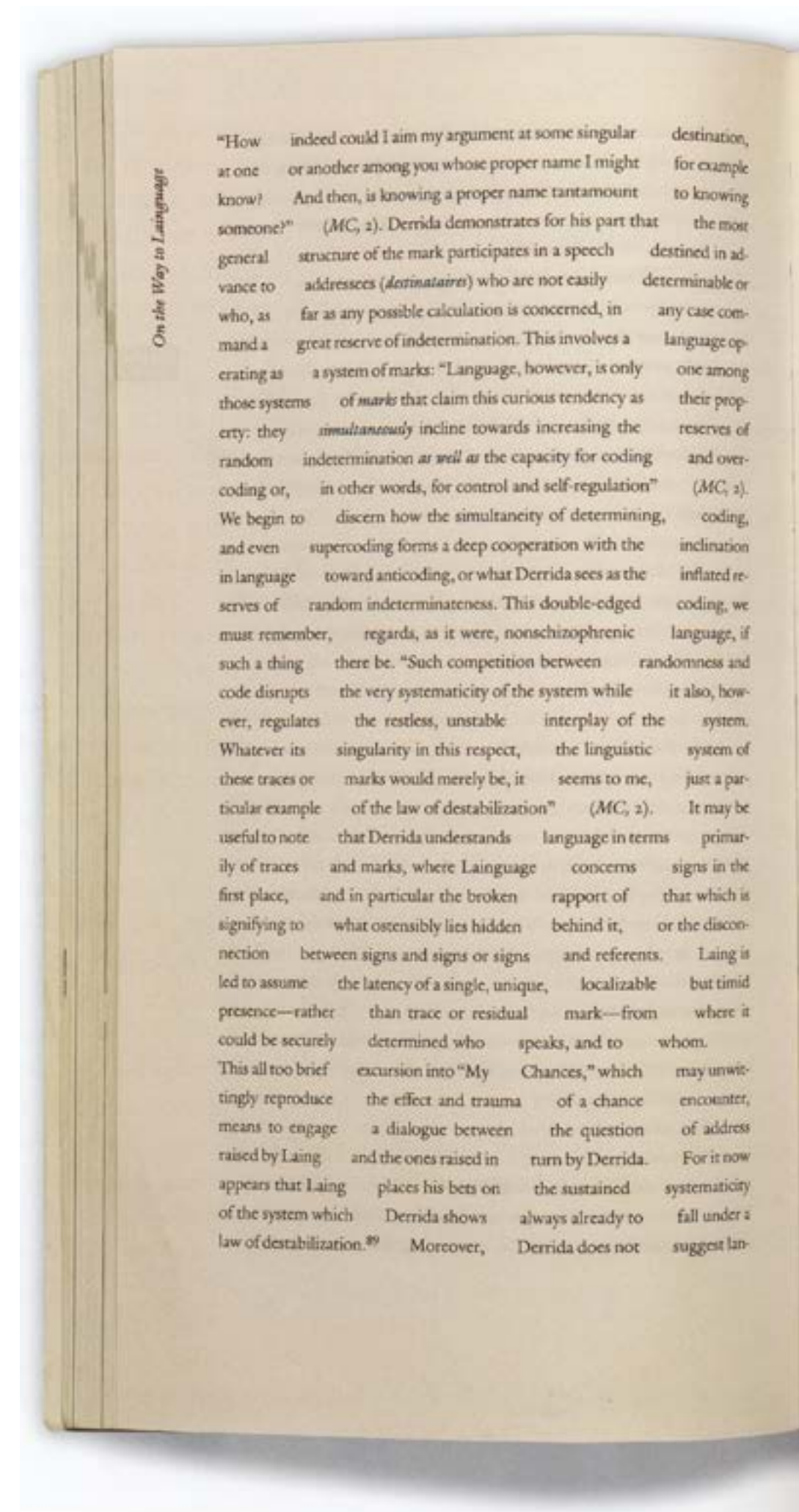
Groups of objects can form patterns based on their spatial layout.



Proximity

Groups of objects can form patterns based on their spatial layout.

This also applies to text.



Richard Eckersley

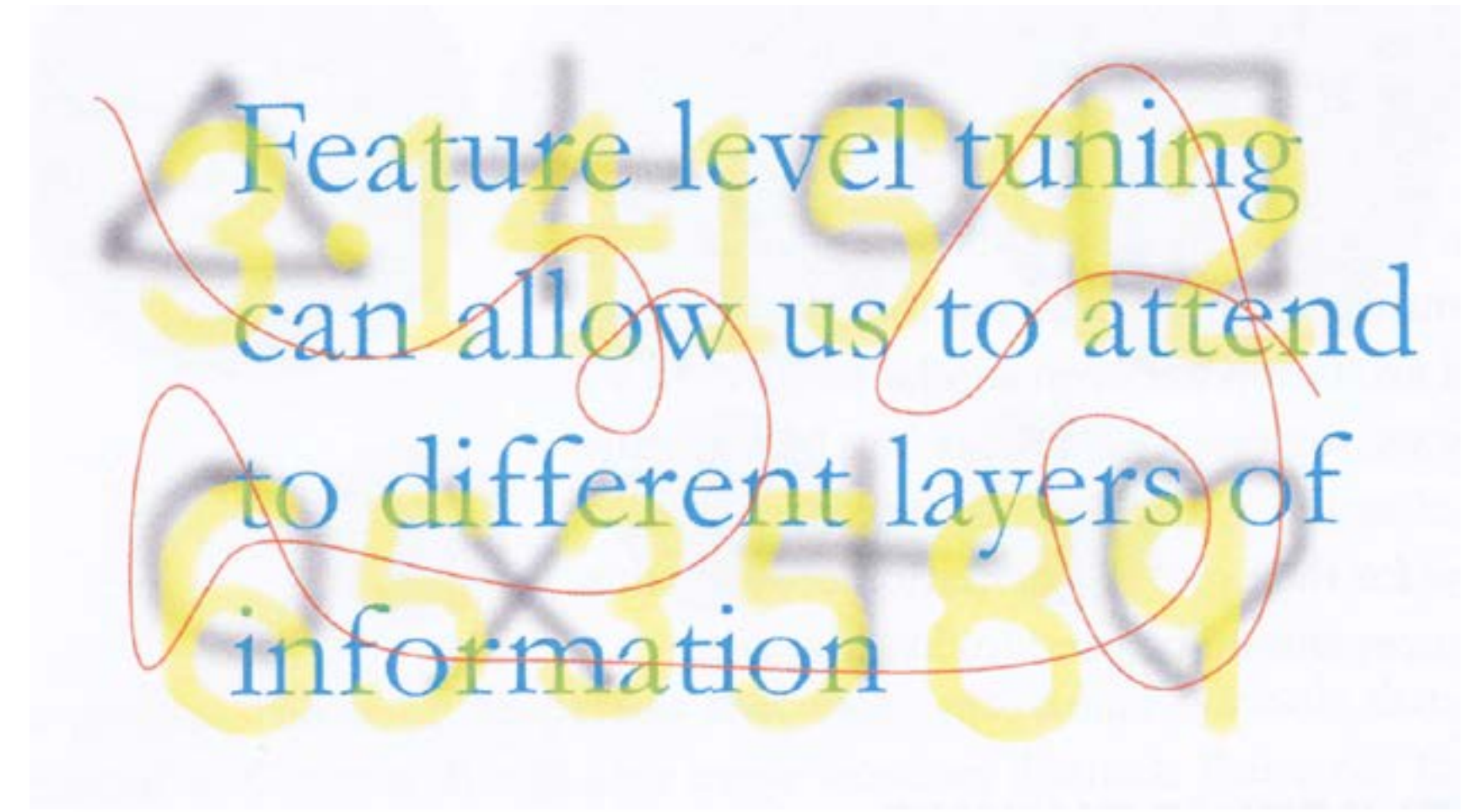
Figure/ground

Colin Ware

Naturally create a spatial relationship between two juxtaposed objects by taking advantage of the way the brain processes negative space.

We distinguish between objects we consider to be in the foreground and the background.

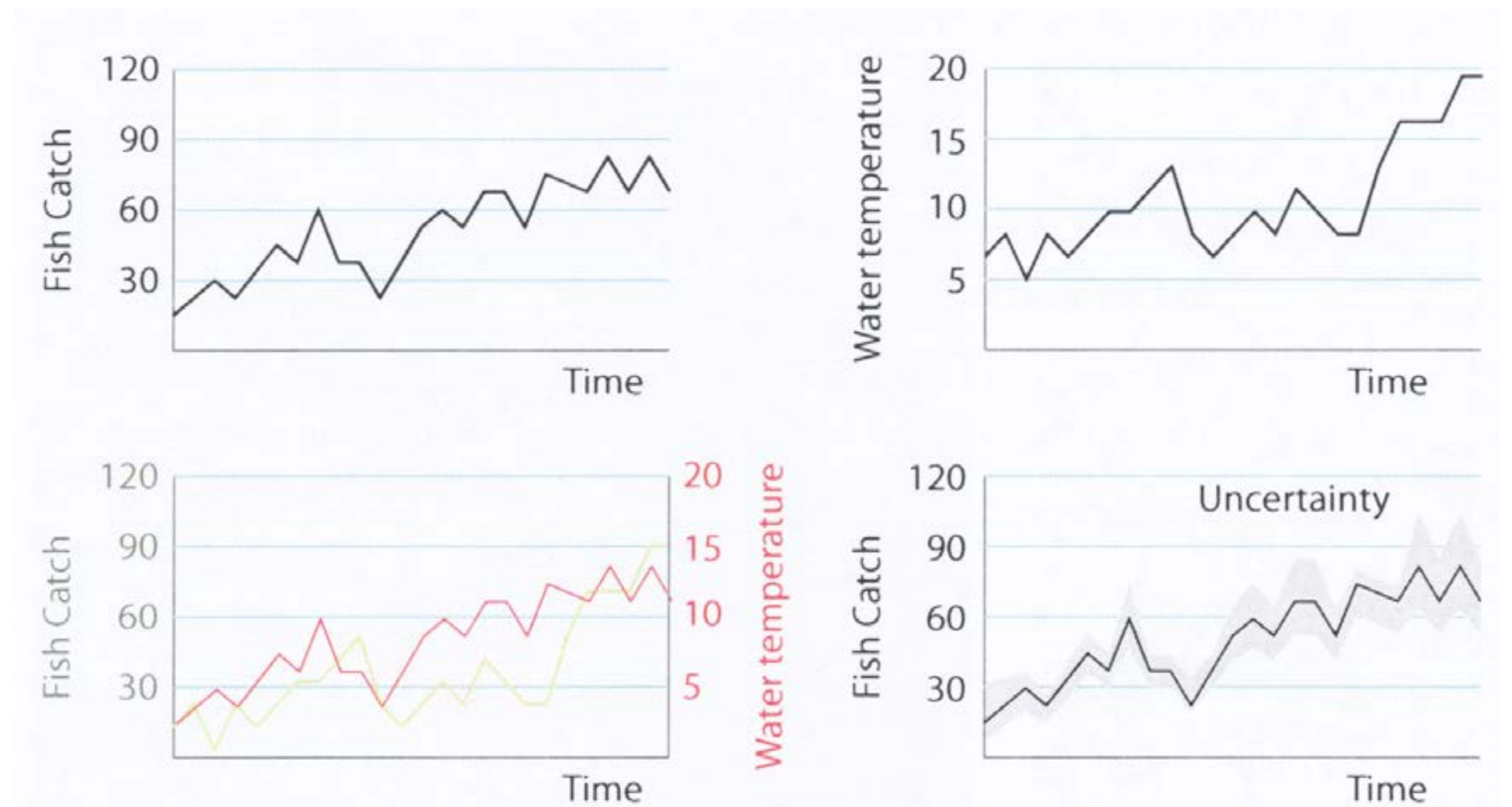
Attentional tuning happens at feature level, but because patterns are made up of features, we can choose to attend to particular patterns if their features are different to switch foreground and background.



Figure/ground

Visual queries to find corresponding patterns are much easier to make if two visualizations can be combined.

Colin Ware



Simplicity · Continuity · Similarity · Connectedness · Synchrony · Common regions · Proximity · Figure/ground

For thousands of years, humans have looked up at the stars in the night sky for navigation, direction, and storytelling. Before the invention of telescopes, ancient Egyptians used the bright star Sirius to predict the annual flooding of the Nile river. Ancient Vikings navigated by the stars through the open ocean for hundreds of winters.

The moon shows every star that might be visible to the human eye in the current night, so it includes many deeply sky-oriented facts: its phases, nebulae, and its clusters like our primary one, from Orion.

Because the Earth rotates slightly around its axis, the position of the stars appears to change over time when seen from Earth. The moon shows the position of each star on each year's day of the year 2000. These star positions are the largest clue to use to figure out human history in the present, duration, location of ecology, a person's past, signs, because where the Sun was located when they were born. But because of the shifting stars, the sun signs of people born today are off by about one cosmic sign when using the traditional date calculations from 2000 years in the past.

[illegible]

- **Q** Blue stars with an approximate temperature of 30,000K (main)
- **B** Blue-white stars between 10,000K and 30,000K. Examples include Rigel and Spica
- **A** White stars between 7,500K and 10,000K. Examples include Sirius and Vega
- **F** Yellow-white stars 6,000-7,500K. Examples include Altair and Procyon
- **G** Yellow stars 5,200-6,000K. Examples include Rigel Kentaurus and our own Sun
- **K** Orange stars 3,700-5,200K. Examples include Arcturus and Aldebaran
- **M** Red stars between 2,400K and 3,700K. Examples are Betelgeuse and Antares
- **OTHER** Cool red and brown stars and other rare stars (C, R, W, N, D, S, P)
- Unknown spectral class or missing data

- SPIRAL GALAXY**
A rotating galaxy with spiral arms contained within a disk shape. Made of young stars and interstellar matter.
- EMISSION NEBULA**
Iridescent (light clouds of ionized hydrogen) Emission nebulae emit light from ionized interstellar gas.
- GLOBULAR CLUSTER**
Globe-shaped star clusters with hundreds of thousands of stars. One of the oldest parts of our galaxy.
- OPEN CLUSTER**
A loose grouping and smaller than globular clusters, with only clusters to hundreds of stars.
- OPEN CLUSTER WITH EMISSION NEBULA**
An open cluster associated with an emission nebula. Examples on the map: Swan Nebula & Hercules Cluster.
- STAR CLOUD**
A bright group of stars that heavily looks like a cluster. The only one on the map is the Sagittarius star cluster.

THE SHAPES WE SEE IN THE STARS

BAU CORRELATION BOUNDARIES

The red lines on the map show the official correlation boundaries recognized by the International Astronomical Union. Taken together, these 88 constellations cover the entire celestial sphere, with 30 constellations having more than 50 objects and 22 mythological or real characters.

TRADITIONAL WESTERN ASTRONOMY

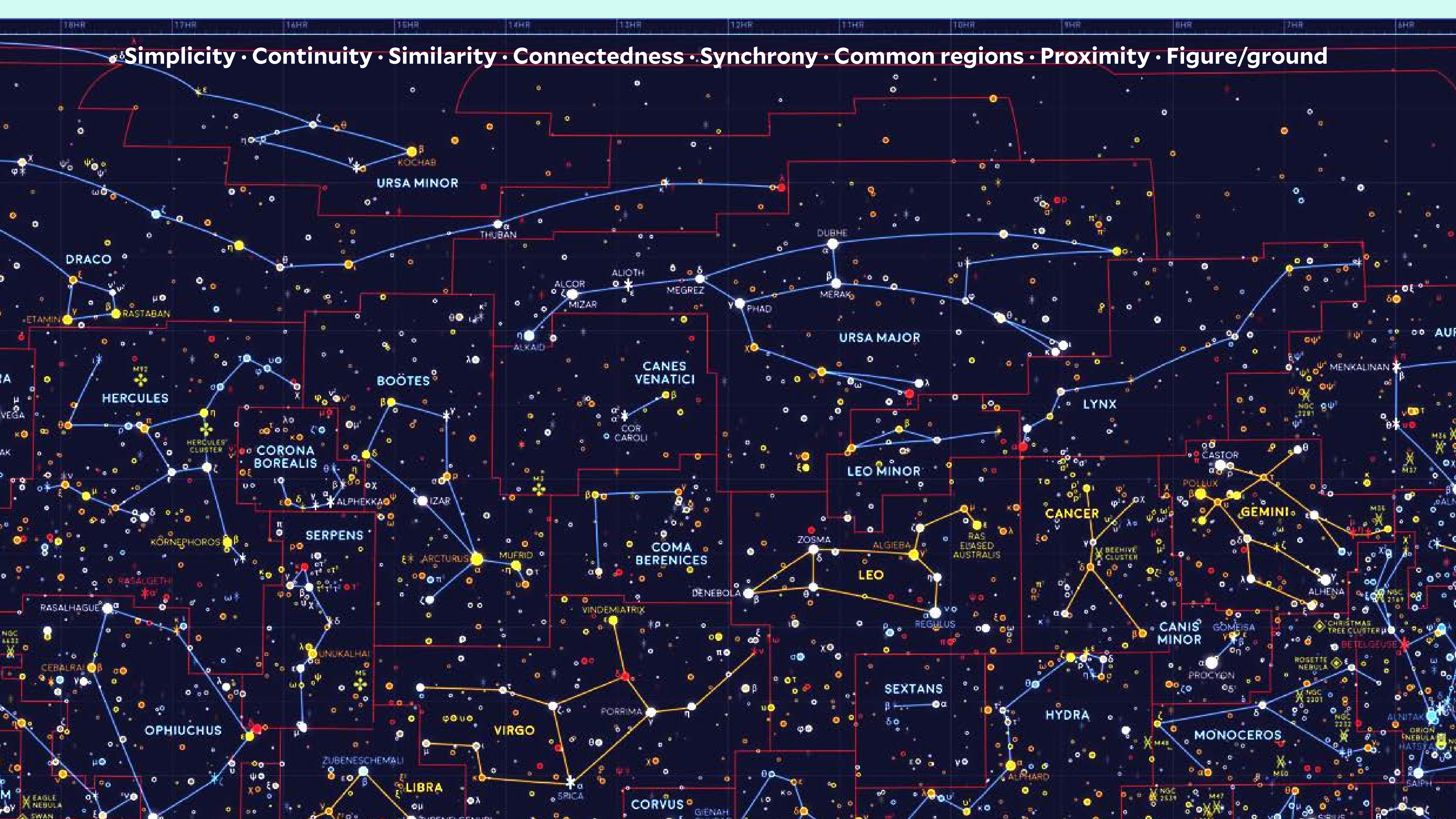
Many ancient cultures created geometric patterns or stars to describe their sky. These shapes, called star patterns, are the basis for the modern IAU constellations. Some, like the ancient Greeks, assigned them their constellation names.

ANCIENT GREEK ZODIAC ASTRONOMY

Major objects in the sky such as the planets, Sun, and Moon are all considered to be known by the same names in the IAU system. The zodiac signs of Aries through Pisces, which are stations of the Sun, have no scientific validity, a focus on planetary motion through the zodiac.



Simplicity · Continuity · Similarity · Connectedness · Synchrony · Common regions · Proximity · Figure/ground



Like interferes with like

To reduce visual interference, maximize feature-level differences between patterns of information. Also keep differences within a pattern of information minimal.



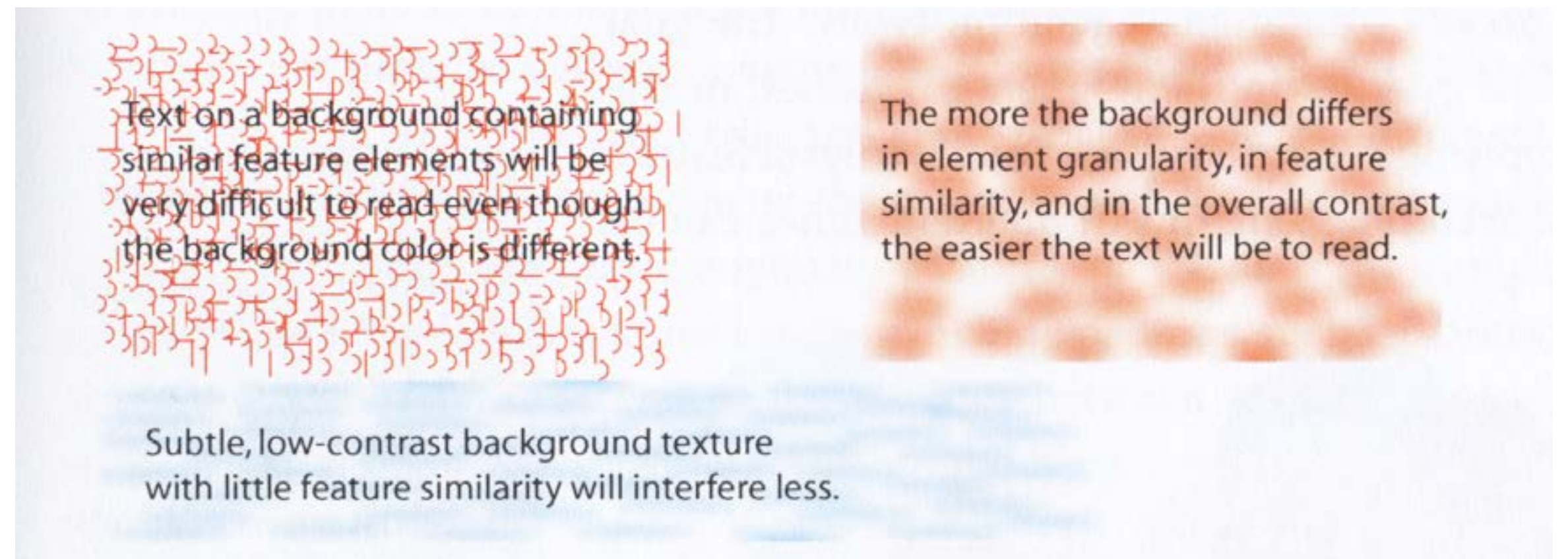
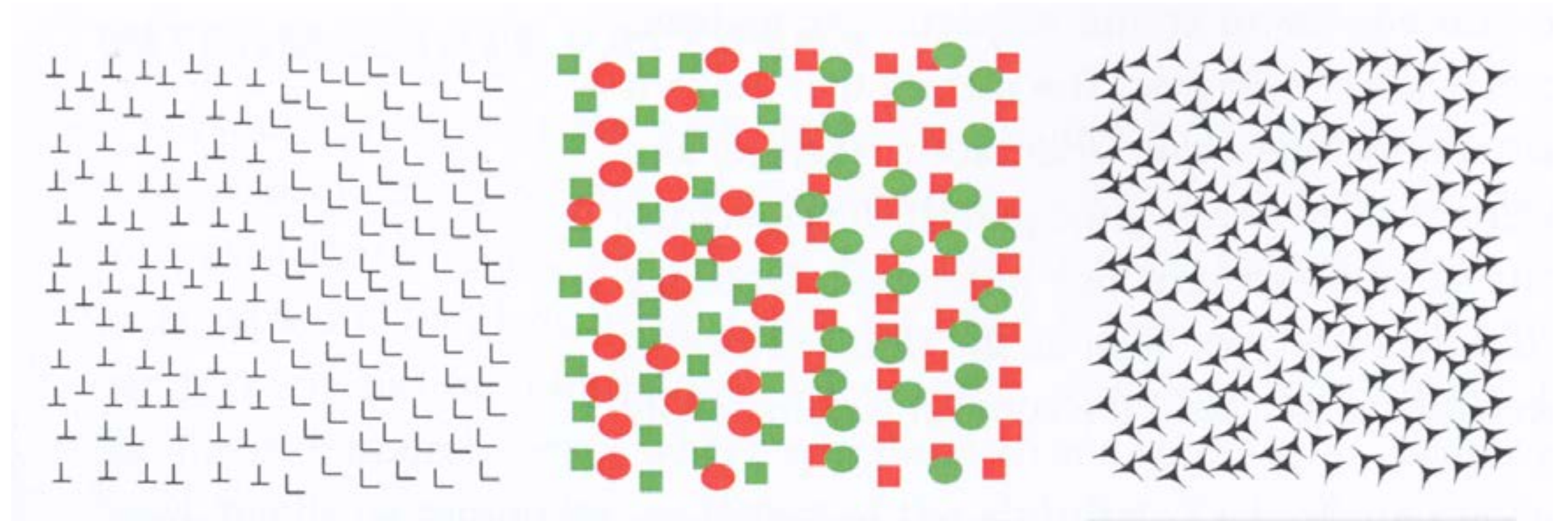
Eleanor Lutz



Like interferes with like

Colin Ware

When low-level feature differences are not present in adjacent regions, they are more difficult to distinguish.



“A designer must critically analyze which combinations of patterns will provide the best support for the set of cognitive tasks a visualization aims to provide.”

- Colin Ware

Text & Hierarchy

Text is non-linear. It provides ways into and out of a flood of words. It's a means of entrance and escape from the one-way stream of discourse. Break up pieces & offer shortcuts/ alternate paths through masses of information.

George Kokkinidis

ANNUAL FUND DONORS BY GIVING SOCIETIES

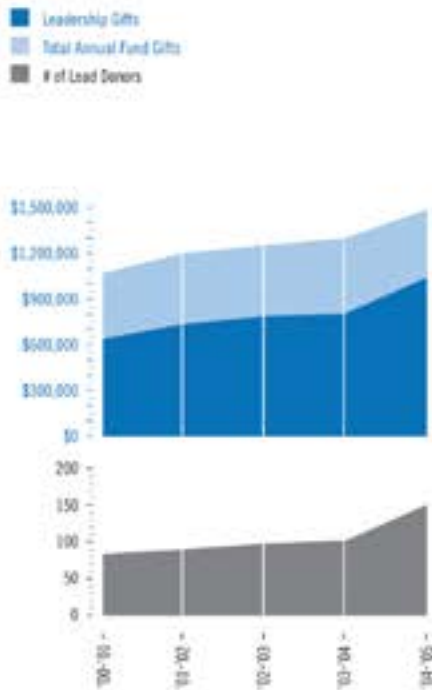
P = Parent GP = Grandparents * = deceased	Thomas B. Peddie Society (\$10,000+) Anonymous (3) Mr. & Mrs. Leonard L. Abew, Jr. P '04 Mr. Christopher J. Actis '85 & Ms. Julie Annouregat '85 Mr. David Altsman Mr. Michael R. Armellino '57 Barrow, Hanley, Mewhinney & Strain, Inc. Mr. James Barrow Mr. H. Lawrence Bourland '50 Mr. W. Dale Brougher '40 Mr. & Mrs. Joo-Hyon Choi P '05	Henry Christensen III, Esq. '62 Mr. & Mrs. Walter M. Craig, Jr. '72 P '07 Mr. Peter J. Dunne '76 Mr. Jon N. Eckert '84 Mr. Roy D. Grossman '70 Mr. & Mrs. Mary L. Johnson P '06 '08 Mr. Robert M. Kape '54 Mr. Michael J. Nadrach '88 Mr. & Mrs. Fred D. Price P '99 '01 Mr. C. Graydon Rogers '47 P '74 Mr. Hal Robinis '57 Mr. Chee Sin Tin & Mrs. Yuet Ping Lam P '06	W.P. Stewart & Company Mr. James S. Wong '62 Founders' Society (\$5,000+) Mr. Stanley Abensur '03 Mr. Paul M. Albert, Jr. '69 Angelo, Gordon & Co. Dr. & Mrs. Jerry Bagel P '04 '07 Mr. John M. Barrett '52 Mr. & Mrs. Frederick A. Blum P '05 '08 Mr. Samuel B. Boynton, Jr. '53 Brencourt Advisors LLC
---	--	--	--

18 - Peddie School

Arthur E. Brown, M.D. '63 Mr. Stephen L. Brown '57 P '95 Mr. & Mrs. Gene M. Buckley P '06 '09 Mr. Roger J. Burns '63 Dr. & Mrs. Thomas J. Burns, Jr. P '08 Mr. & Mrs. Thomas W. Burocy P '07 Mr. & Mrs. Henry Y. L. Cheung P '05 Mr. & Mrs. John E. Coddick P '93 '01 Mr. John M. Delaney '78 Mr. Edward C. Dippold III '81 Mr. John W. Dockett, Jr. '45 Mr. & Mrs. Bruce Fishare P '01 Mr. & Mrs. Jeffrey M. Finn '80 P '07 Mr. John F. Green & Mr. Alston Zander Mr. & Mrs. Roger B. Hansen '61 P '91 Terry Hinkle, M.D. '60 P '92 Mr. Robert E. Hicks '55 Mr. Douglas A. Hirsch David E. Hunt, Esq. '71 Mr. Donald P. Kahn '42 Mr. Lawrence S. Kahl '60 Mr. & Mrs. Young-Tae Kim P '06 Mrs. Richard T. Leonard Mr. & Mrs. Fred S. Leslie P '07 Mr. B. Lam & Mrs. G. Kim P '06 '07 Mr. Chi Kin Ling & Mrs. Pik Sim Chan P '01 '04 Mr. & Mrs. Duncan MacMillan P '91 '93 Mr. Edward K. Maland '49 P '74 GP '03 Mr. C. Oscar Mooring, Jr. '53 Mr. & Mrs. Craig W. Mudge '67 P '99	Mr. Harold S. Neiderhoffer '53 Mr. & Mrs. William B. Petersen P '08 Seneca Capital Investments, LLC Ms. Jacqueline Shoback '84 Mr. Edward J. Toohy '48 Mr. Joseph Valvano & Ms. Therese Militara P '05 Mr. William T. Wolf '39 Mr. Charles L. Wolmann '68 Mr. & Mrs. William C. Wyrick P '09 Mr. Harry Zason '57 Wilson Hall Society (\$2,500+) Mr. Joseph Abensur '46 Mr. & Mrs. William F. Aldridge P '06 Mr. James O. Alexander '47 Mr. & Mrs. A. Wayne Anderson P '90 '94 David S. Aniak, M.D. '73 Mrs. Virginia Bauer P '03 '05 Mr. David P. Bensie '66 Mr. Bruce W. Benedict '55 Mr. L. Frank Blandell '60 P '02 Mr. Peter D. Blanchard '60 Mr. Dean L. Britton '82 Cardinal Capital Management LLC Ms. Taira Cardota & Mr. John McCann P '08 Mr. & Mrs. Finn M. Caspersen, Jr. Mr. George Chen '84 Mr. & Mrs. Patrick J. Clemens P '03 Mr. & Mrs. Michael A. Corvino P '04 Mr. & Mrs. George Cross P '05 Douglas E. Davidson, Esq. '64
--	--

19 - Annual Report 2004-2005

LEADERSHIP GIVING LAST FIVE YEARS



Text & Hierarchy

Hierarchy allows ways into and out of the content. Titles, subtitles, body text, and captions are some structures that can be used.

This tool can help walk you through the rationale of hierarchy.

George Kokkinidis

ANNUAL FUND DONORS BY GIVING SOCIETIES

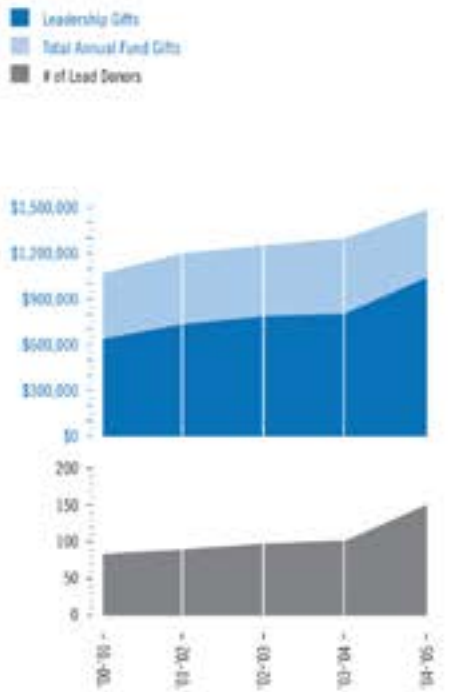
P = Parent GP = Grandparents * = deceased	Thomas B. Peddie Society (\$10,000+) Anonymous (5) Mr. & Mrs. Leonard L. Abew, Jr. P '04 Mr. Christopher J. Actis '85 & Mrs. Julie Annouregat '85 Mr. David Altsman Mr. Michael R. Armellino '57 Barrow, Hanley, Mewhinney & Straum, Inc. Mr. James Barrow Mr. H. Lawrence Bourland '50 Mr. W. Dale Brougher '40 Mr. & Mrs. Joo-Hyon Choi P '05	Henry Christensen III, Esq. '62 Mr. & Mrs. Walter M. Craig, Jr. '72 P '07 Mr. Peter J. Dunne '76 Mr. Jon N. Eckert '84 Mr. Roy D. Grozman '70 Mr. & Mrs. Mary L. Johnson P '06 '08 Mr. Robert M. Kape '54 Mr. Michael J. Nadrach '88 Mr. & Mrs. Fred D. Price P '99 '01 Mr. C. Graydon Rogers '47 P '74 Mr. Hal Robinis '57 Mr. Chee Sin Tin & Mrs. Yuet Ping Lam P '06	W.P. Stewart & Company Mr. James S. Wong '62 Founders' Society (\$5,000+) Mr. Stanley Abensur '03 Mr. Paul M. Albert, Jr. '69 Angelo, Gordon & Co. Dr. & Mrs. Jerry Bagel P '04 '07 Mr. John M. Barrett '52 Mr. & Mrs. Frederick A. Blum P '05 '08 Mr. Samuel B. Boynton, Jr. '53 Brencourt Advisors LLC
---	---	---	--

18 - Peddie School

Arthur E. Brown, M.D. '63 Mr. Stephen L. Brown '57 P '95 Mr. & Mrs. Gene M. Buckley P '06 '09 Mr. Roger J. Burns '63 Dr. & Mrs. Thomas J. Burns, Jr. P '08 Mr. & Mrs. Thomas W. Burocy P '07 Mr. & Mrs. Henry Y. L. Cheung P '05 Mr. & Mrs. John E. Coddick P '93 '01 Mr. John M. Delaney '78 Mr. Edward C. Dippold III '81 Mr. John W. Dockett, Jr. '45 Mr. & Mrs. Bruno Fubare P '01 Mr. & Mrs. Jeffrey M. Finn '80 P '07 Mr. John F. Green & Mrs. Alison Zander Mr. & Mrs. Roger B. Hansen '61 P '91 Terry Hinkle, M.D. '60 P '92 Mr. Robert E. Hicks '55 Mr. Douglas A. Hirsch David E. Hunt, Esq. '71 Mr. Donald P. Kahn '42 Mr. Lawrence S. Kahl '60 Mr. & Mrs. Young-Tae Kim P '06 Mrs. Richard T. Leonard Mr. & Mrs. Fred S. Leslie P '07 Mr. B. Lam & Mrs. G. Kim P '06 '07 Mr. Chi Kin Ling & Mrs. Pik Sin Chan P '01 '04 Mr. & Mrs. Duncan MacMillan P '91 '93 Mr. Edward K. Maland '49 P '74 GP '03 Mr. C. Oscar Mooring, Jr. '53 Mr. & Mrs. Craig W. Mudge '67 P '99	Mr. Harold S. Neiderhoffer '53 Mr. & Mrs. William B. Petersen P '08 Seneca Capital Investments, LLC Ms. Jacqueline Shoback '84 Mr. Edward J. Toohy '48 Mr. Joseph Valvano & Ms. Therese Militara P '05 Mr. William T. Wolf '39 Mr. Charles L. Wolmann '68 Mr. & Mrs. William C. Wyrick P '09 Mr. Harry Zason '57 Wilson Hall Society (\$2,500+) Mr. Joseph Abensur '46 Mr. & Mrs. William F. Aldridge P '06 Mr. James O. Alexander '47 Mr. & Mrs. A. Wayne Anderson P '90 '94 David S. Aniak, M.D. '73 Mrs. Virginia Bauer P '03 '05 Mr. David P. Benscioi '66 Mr. Bruce W. Benedict '55 Mr. L. Frank Blandell '60 P '02 Mr. Peter D. Blanchard '60 Mr. Dean L. Britton '82 Cardinal Capital Management LLC Ms. Taira Cardona & Mr. John McCann P '08 Mr. & Mrs. Finn M. Caspersen, Jr. Mr. George Chen '84 Mr. & Mrs. Patrick J. Clemens P '03 Mr. & Mrs. Michael A. Corvino P '04 Mr. & Mrs. George Cross P '05 Douglas E. Davidson, Esq. '64
--	--

19 - Annual Report 2004-2005

LEADERSHIP GIVING LAST FIVE YEARS



Use of spacing

Design is as much an act of spacing as an act of marking. Open space can have as much physical presence as filled content areas.

Example from the New York Times

New York Times

See How the World's Most Polluted Air Compares With Your City's

By [Nadja Popovich](#), [Blacki Migliozi](#), [Karthik Patanjali](#), [Anjali Singhvi](#) and [Jon Huang](#)
Dec. 2, 2019

We visualized the damaging, tiny particles that wreak havoc on human health. From the Bay Area to New Delhi, see how the world's worst pollution compares with your local air.

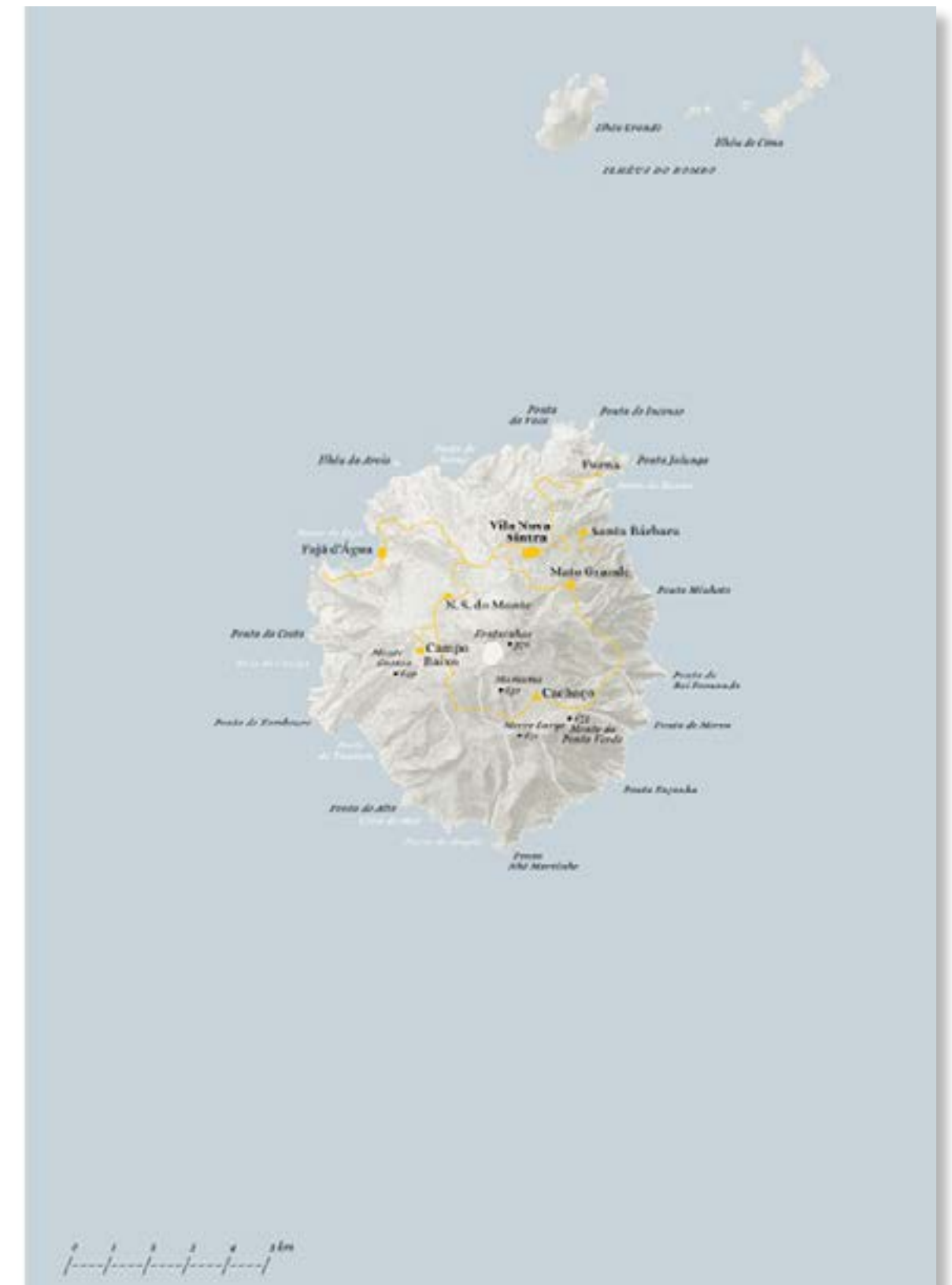
Use of spacing

Judith Schalansky

Design is as much an act of spacing as an act of marking. Open space can have as much physical presence as filled content areas.



This clenched heart lies unnameable, protected from the wind by the great volcano of the neighbouring island. Here, at the outermost edge of the archipelago, the clouds hang low and it rains more than on the other islands, which are continually battered by desert winds. Dew forms on the leaves of the almond trees and the date and coconut palms, on the petals of the fringing lobelia, oleander, hibiscus, jasmine and bougainvillea. This island has veins of rivers and strong muscels in its mountain range. The faint beat of the melancholy morna sounds, and the old song pulses relentlessly in a minor key, a lament about the inescapability of fate. It is the longing for an unnameable moment in the past, for a distant land, for a long-lost home. A feeling, scattered like these islands, the yearning for a place that is at once everywhere and nowhere. This is the song of a land without original inhabitants. Everyone who lives here is descended from the planters who stayed behind and from their slaves, from those who chose to move here and those who were forced to, a people with blue eyes and black skin. The melody starts hesitantly, following the wide arc of a legato. The guitar adds a bass line in four-four time, accompanied by the plucking syncopations of the cavaquinho, sometimes backed up by a violin. These songs live in the bars and dance halls of the harbour: *Who goes with you / on this long journey? / Who goes with you / on this long journey? // This journey / to São Tomé // Homestick, homestick / homestick / For my country São Nicolau // When you write to me / I will write to you / When you forget me / I will forget you // Homestick, homestick / homestick / For my country São Nicolau // Until the day / that you return.* Two-thirds of Cape Verdeans do not live on the islands any more.



Kerning

This is the spacing between letters. Good letter spacing is an example of the Gestalt principle of proximity. The more inconsistent spacing there is in a word or between words, the more our brains look for meaning.

Avoiding signal to brain that something is part of a different group when it's meant to be the same. Modern typefaces do a good job of assuring good kerning, but you can practice by [trying this game.](#)



Leading

Leading is the spacing between lines. Avoid signaling to the brain that something is part of a different group when it's meant to be the same. This example makes the adjacent column look more connected to each line than the next line in the same column (which is not a good thing). Fugitaspienti offictotatia doloresti quaepreicati nus alianim porerunt quunt qui non pel mos re des conesequamet voluptatur? Qui aut parum cus corporp orisquam iur sinus alibus quis am eaturio. Cimet ipit officiis sus inullupiet molorum as qui ulluptae

lanis in pro quodign magnate eos dolorecus quos aut remolum recto bea cus, volor mi, quo cullamus. Eliquo te laceat laccum qui blaccati voluptat omnis volor abo. Fic to erume ne vent mos volupta num reic tesed ea ium quid errum dolori dolorer ovidige nitatur, utemporem quodita tusdaepelit veliquame si utatius, consediate volupta tiatio et que nam ipsus magnihit rae omnis ipsum arior ario. Aditi iunto es doluptu recatio totate nit evelia nienda volenec tatiis et is voleseq uundera tisque pra quam hillatus. **X**

Line length

This is a quote from the *Typographic Elements of Style*: “Anything from 45 to 75 characters is widely regarded as a satisfactory length of line for a single-column page set in a serified text face in a text size. The 66-character line (counting both letters and spaces) is widely regarded as ideal. For multiple column work, a better average is 40 to 50 characters.” When you get much longer lines of text, it can become difficult for a reader to find the beginning of the next line, especially when there is a significant number of lines in a row. In this example, there are about 115 characters per line. “Anything from 45 to 75 characters is widely regarded as a satisfactory length of line for a single-column page set in a serified text face in a text size. The 66-character line (counting both letters and spaces) is widely regarded as ideal. For multiple column work, a better average is 40 to 50 characters.” That’s a quote from the *Typographic Elements of Style*. When you get much longer lines of text, it can become difficult for a reader to find the beginning of the next line, especially when there is a significant number of lines in a row.

X

Line length

Likewise,
many fewer
characters per
line have too
many stops
and starts for
a reader to
make meaning
easily if used
for more than
a phrase.

X

Paragraphs

There are various ways to visually separate paragraphs. One method is to add a line break between two paragraphs, like this. What are some other ways?

Regardless which method you choose, you don't want to use multiple methods, like using a line break *and* an indent as is shown here. It can waste space, and make your text look a bit less defined.

It's also important not to end your paragraphs with a single word on a line. The exception would be if a paragraph has a very short line length. Leaving a single word on the last line leaves the overall paragraph with an awkward shape, and it makes the reader start and stop too **quickly**.

One must also not end a paragraph at the beginning of page or a column. Similar to ending a line with a single word, starting a page or column with the last line of a paragraph from the preceding page or column it creates an awkward shape for the text and it makes the reader

start and stop too quickly.

Alignment

Centered: Has a more amorphous shape. Use alternating long and short lines to create a pleasing shape that doesn't appear arbitrary/staid.

Justified: Must have a long enough line of text to avoid gaps and rivers in the text.

Centered text is symmetrical, like the facade of a classical building.

Centered type often appears on invitations, title pages, certificates, and tomb stones.

The edges of a centered column are often dramatically uneven.

Centered lines should be broken to emphasize a key phrase (such as the name of the bride or the date of her wedding) or to allow a new thought to begin on its own line.

Breaking lines in this manner is called *breaking for sense*.

CENTERED

Lines of uneven length on a central axis

Centered text is formal and classical. It invites the designer to break a text for sense and create elegant, organic shapes. Centering is often the simplest and most intuitive way to place a typographic element. Used without care, centered text can look staid and mournful, like a tombstone.

THIS DREARY SHAPE
HAS RANDOM LINE
BREAKS THAT DON'T
RESPOND TO THE
RHYTHM OF THE
WRITTEN TEXT.

TYPE CRIME

**POORLY SHAPED
TEXT BLOCK** *In most
uses, centered text
should be broken into
phrases with a variety
of long and short lines.*

Justified text, which has even edges on both the left and right sides of the column, has been the norm since the invention of printing with movable type, which enabled the creation of page after page of straight-edged columns. In metal type setting, the printer justifies each line by hand, using small metal spacers to alter the spaces between words and letters and thus make all the lines the same length. Digital typesetting performs the same labor automatically. Justified type makes efficient use of space. It also creates a clean, compact shape on the page. Ugly gaps can occur, however, when the line length is too short in relation to the size of type used. Hyphenation breaks up long words and helps keep the lines of text tightly packed. Designers often use negative tracking to fit additional characters on a line, or positive tracking to even out a line of type that looks too loose.

JUSTIFIED

Left and right edges are both even

Justified text makes a clean shape on the page. Its efficient use of space makes it the norm for newspapers and books. Ugly gaps can occur, however, as text is forced into lines of even measure. Avoid this by using a line length that is long enough in relation to the size of type. As type gets smaller, more words will fit on each line.

Ugly gaps appear when the designer has made the line length too short, or the author has selected words that are too long.

TYPE CRIME

FULL OF HOLES *A column that is too
narrow is full of gaps.*

Alignment

Flush left: Designers must try to create a rag (uneven edge of text) that isn't distracting. One guideline is to alternate long and short lines.

Flush right: Better for shorter extraneous content. Can be used to differentiate from flush-left.

In *flush left/ragged right* text, the left edge is hard and the right edge soft. Word spaces do not fluctuate, so there are never big holes inside the lines of text. This format, which was used primarily for setting poetry before the twentieth century, respects the flow of language rather than submitting to the law of the box. Despite its advantages, however, the flush left format is fraught with danger. Above all, the designer must work hard to control the appearance of the *rag* that forms along the right edge. A good rag looks pleasantly uneven, with no lines that are excessively long or short, and with hyphenation kept to a minimum. A rag is considered "bad" when it looks too even (or too uneven), or when it begins to form regular shapes, like wedges, moons, or diving boards.

FLUSH LEFT/RAGGED RIGHT

Left edge is hard; right edge is soft

Flush left text respects the organic flow of language and avoids the uneven spacing that plagues justified type. A bad rag can ruin the relaxed, organic appearance of a flush left column. Designers must strive vigilantly to create the illusion of a random, natural edge without resorting to excessive hyphenation.

A bad rag will fall into weird shapes along the right edge, instead of looking random.

TYPE CRIME

BAD RAG

An ugly wedge shape spoils the ragged edge.

Flush right/ragged left is a variant of the more familiar flush left setting. It is common wisdom among typographers that flush right text is hard to read, because it forces the reader's eye to find a new position at the start of each line. This could be true, or it could be an urban legend.

That being said, the flush right setting is rarely employed for long bodies of text. Used in smaller blocks, however, flush right text forms effective marginal notes, sidebars, pull quotes, or other passages that comment on a main body or image.

A flush or ragged edge can suggest attraction (or repulsion) between chunks of information.

FLUSH RIGHT/RAGGED LEFT

Right edge is hard; left edge is soft

Flush right text can be a welcome departure from the familiar. Used for captions, side bars, and other marginalia, it can suggest affinities among elements. Because flush right text is unusual, it can annoy cautious readers. Bad rags threaten flush right text just as they afflict flush left, and punctuation can weaken the hard right edge.

Lots of punctuation (at the ends of lines) will attack, threaten, and generally weaken the flush right edge.

TYPE CRIME

PUNCTUATION EATS THE EDGE

Excessive punctuation weakens the right edge.

Break

For next week

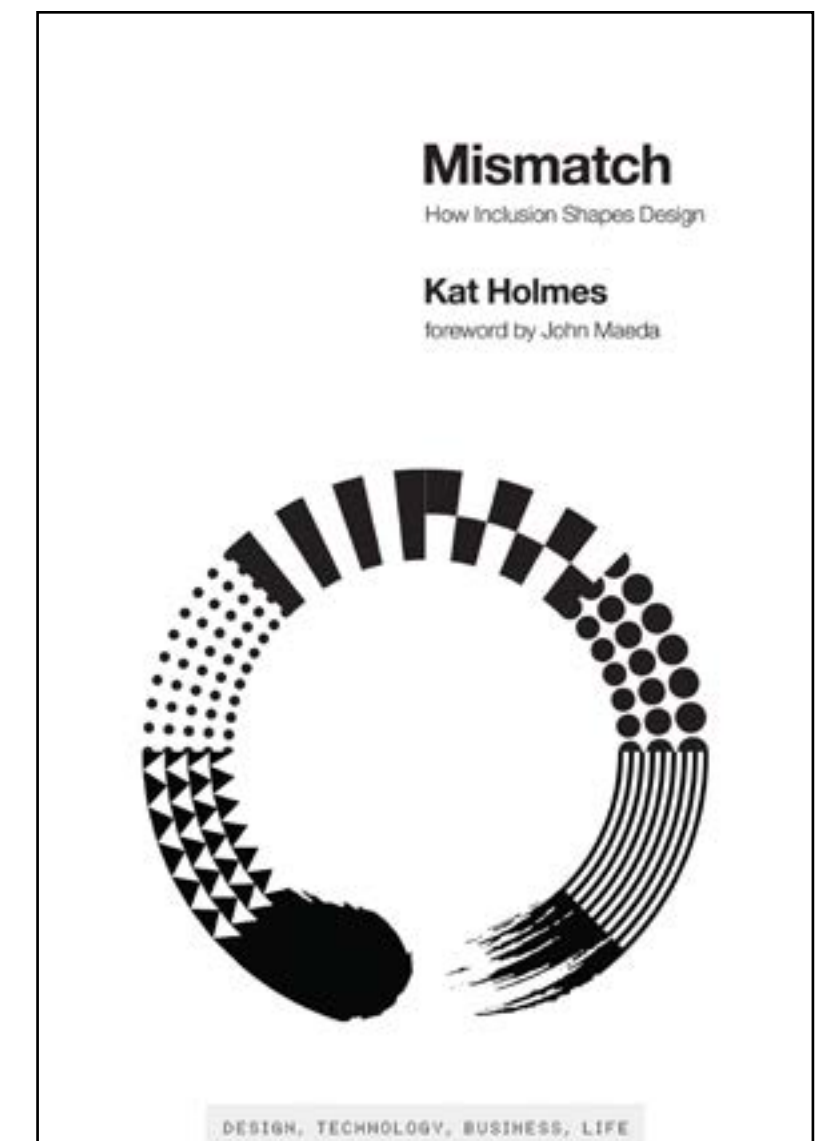
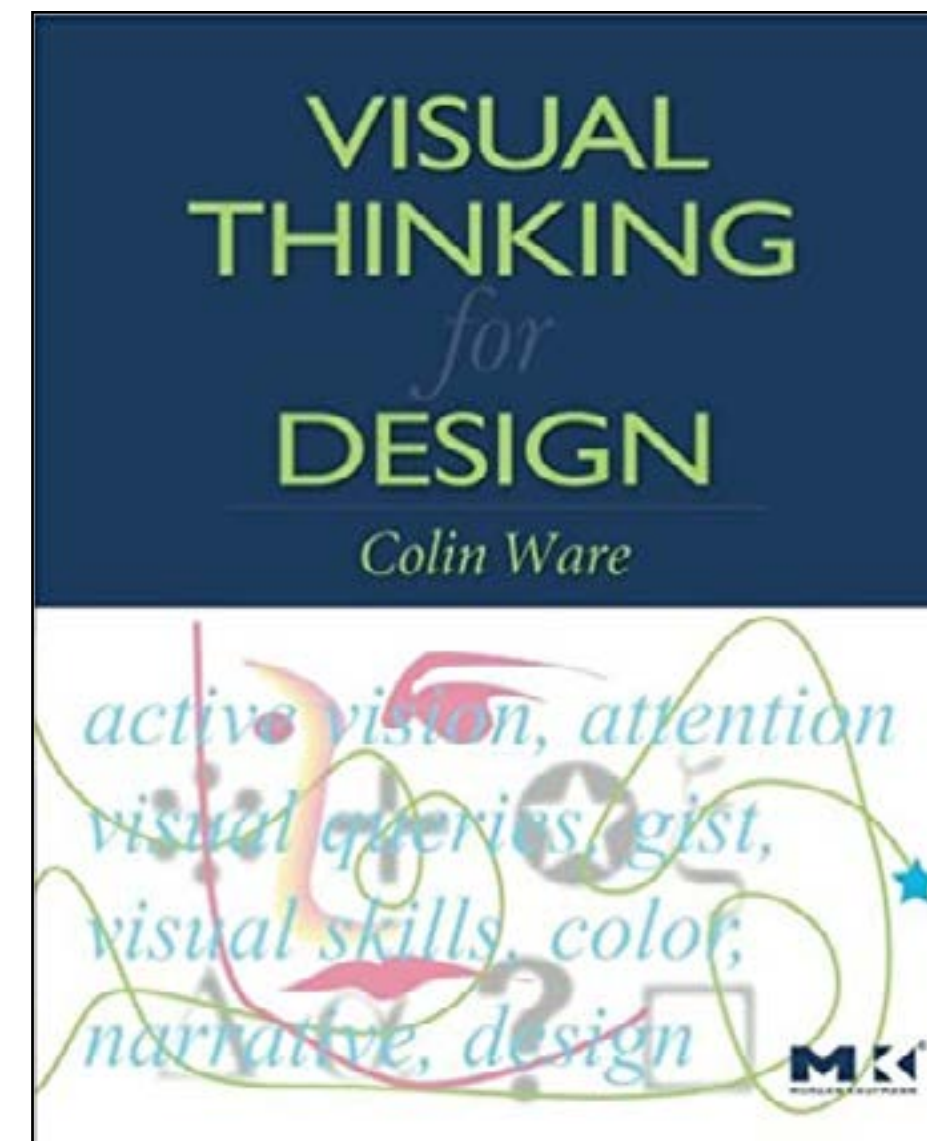
Format constraints

People don't have short attention spans they have short consideration spans. They must be hooked quickly.

What are some constraints and considerations for different types of media?

Reading

- Ware chapter 4
- Holmes chapters 1, 2



Assignment

Universal Design Principles Presentation

Pick one design principle from the provided PDF. After you have read about it, prepare a short presentation on your chosen principle for Week 4. Plan to take no more than three minutes to present.

Format: Slide deck. You may use up to three slides. Please submit your assignment/presentation in PDF format.

Content: You must describe the principle in your slides, and how it might relate to information visualization (you may include an example of an existing visualization that incorporates the principle). You must also create a visualization (modified in Adobe Illustrator) that demonstrates the chosen principle for inclusion in the slides. Create a clear hierarchy for the slides.

Feedback

Two approaches using feature channels

Feedback: Post your assignment for feedback. Think about how we approach critique (from 2nd session) when you're leaving feedback. Peer feedback for this assignment will be graded for participation. Leaving a comment for at least two other people meets the requirement.

Questions?

Critique