

PINO TROGU – SAN FRANCISCO STATE UNIVERSITY, USA

THE DOUBLE CONSTRAINTS OF
CONVENTION AND COGNITION IN
SUCCESSFUL GRAPHIC DESIGN

CIDI2013 – RECIFE, BRAZIL

6TH INFORMATION DESIGN INTERNATIONAL CONFERENCE

5TH INFODESIGN

WEDNESDAY 11 SEPTEMBER 2013

[go to last slide](#)

There really is no such thing as Art.

There are only artists.

— Ernst Gombrich

CONVENTION

to, or resembling, a conventicle.

con-ven'tion (kŏn-vĕn'shŭn), *n.* [F. or L.; F. *convention*, fr. L. *conventio*. See **CONVENE**.] **1.** Act of convening; specif.: **a** *Obs.* A coming together or meeting. **b** A summoning or meeting of an assembly. **c** *Obs.* Act of summoning before a judge or other official. **d** Union or assemblage; — of things.

2. A body or assembly of persons met for some common purpose; esp., a formal and special or occasional assembly of delegates, representatives, members of an estate or party, or the like, met to accomplish some specific civil, social, political, ecclesiastical, or other important object; as, the *convention* of a political party.

3. Agreement or an agreement; specif., an agreement enforceable in law; a contract; covenant.

4. General agreement or concurrence, as the basis of any custom, opinion, or the like, or as embodied in any accepted standard, method, usage, or the like; hence, arbitrary or inflexible custom; fixed usage; conventionality; as, slaves to *convention*. "There are thousands now Such women, but *convention* beats them down." *Tennyson*.

5. A rule or usage based upon general agreement; a rule or practice generally adhered to; an arbitrary or inflexible rule, form, principle, etc., as in an art; a conventionalism; as, the *conventions* of morality or of everyday life.

A *convention* is essentially a theory of conduct. *W. Lippmann*.

6. Card Playing. A practice to which by general agreement a particular significance is attached.

7. Eng. Hist. An assembly of the Parliament (**Convention Parliament**) held without the king's writ, esp. the assembly of 1660 which restored Charles II to the throne, and that of 1688 which declared the throne to be abdicated by James II.

8. Fine Arts. A representation, or mode of representing, recognized by general practice as a substitute for an imitation of nature, as in arabesques or in the dramatic aside.

9. [*cap.*, with *the*] *F. Hist.* = NATIONAL CONVENTION.

10. Law. **a** *Eng.* Conventional tenure. **b** *Internat. Law.* An agreement between states or sovereigns; as a treaty, or, more usually, an agreement less formal or more specific than a treaty, by which several states arrange for the regulation of matters affecting all of them, as postage, copyright, the conduct of war, etc.

11. Mil. A compact between commanders of armies in respect to military operations.

12. U. S. Hist. & Govt. Any one of various special assemblies either self-convened or met under statutory or other authority. For specific conventions see ALBANY CONVENTION; CONSTITUTION, 6; etc.

Syn. — Assembly, meeting, gathering; usage, custom.

con-ven'tion-al (-ăl; -'l), *adj.* [LL. *conventionalis*.] **1.**

COGNITION

of cognates. See **COGNATE**, *n.*; cf. **MATRIARCHY**.

2. Kindred or blood relations; cognates. *Obs.*

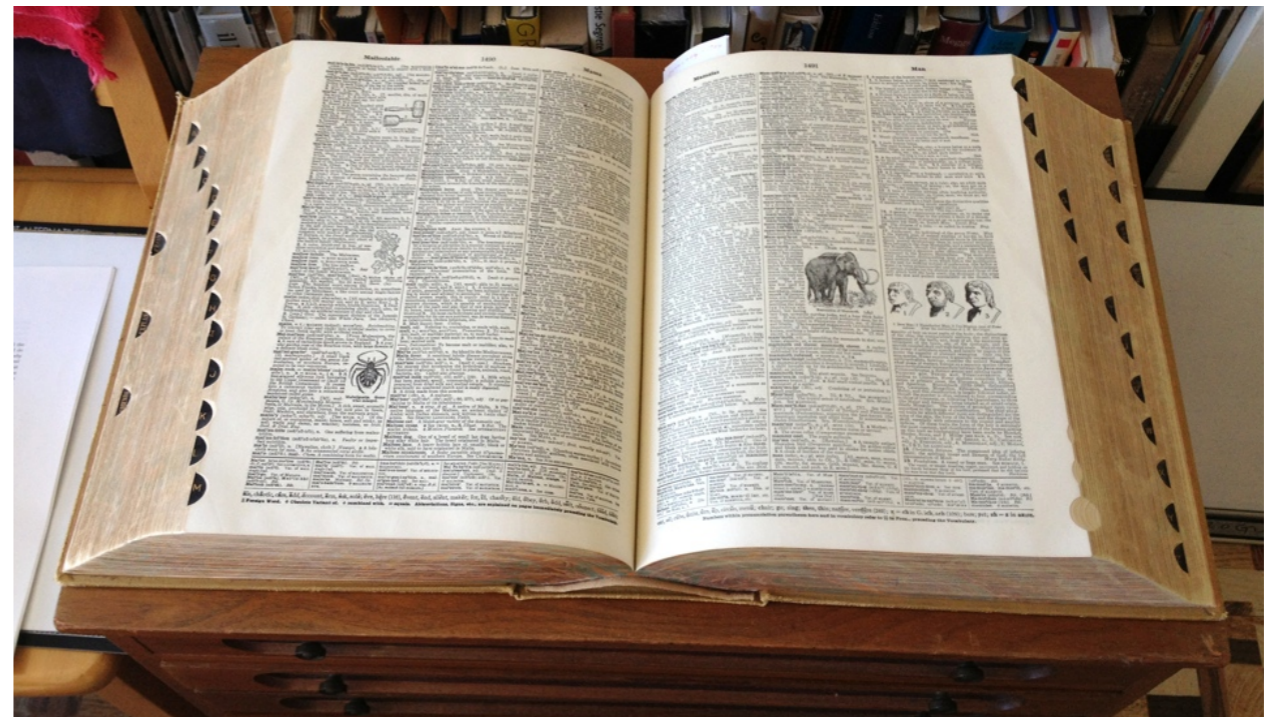
cog-ni'tion (-nĭsh'ŭn), *n.* [L. *cognitio*, fr. *cognoscere*, *cognitum*, to become acquainted with, to know, fr. *co-* + *noscere*, *gnoscere*, to get a knowledge of. See **KNOW**.] **1.** Act or faculty of knowing; knowledge; perception. *Obs.*

2. a The process of knowing; any mental operation by which we become aware of objects of thought or perception; knowledge or the capacity for it. **b** A product of this process, as a perception or notion; as, a priori *cognitions*.

3. Law. **a** *Chiefly Scots Law.* Cognizance or jurisdiction. **b** *Scots Law.* Act or process of cognoscing; judicial examination or trial; adjudication of rights.

cog'ni-tive (kŏg'nĭ-tĭv), *adj.* **1.** Of or pert. to cognition. **2.** Possessing or characterized by cognition.

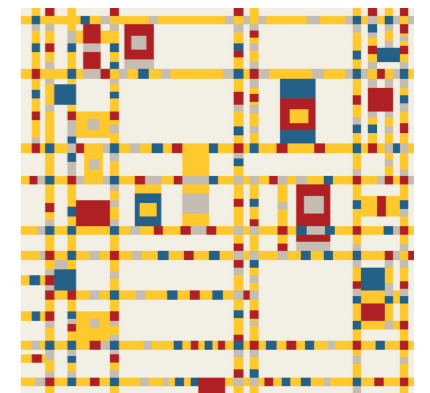
— **cog'ni-tive-ly**, *adv.*



I. A BEAUTIFUL DESIGN THAT DID NOT WORK



New York Subway Map 1972 (1978)



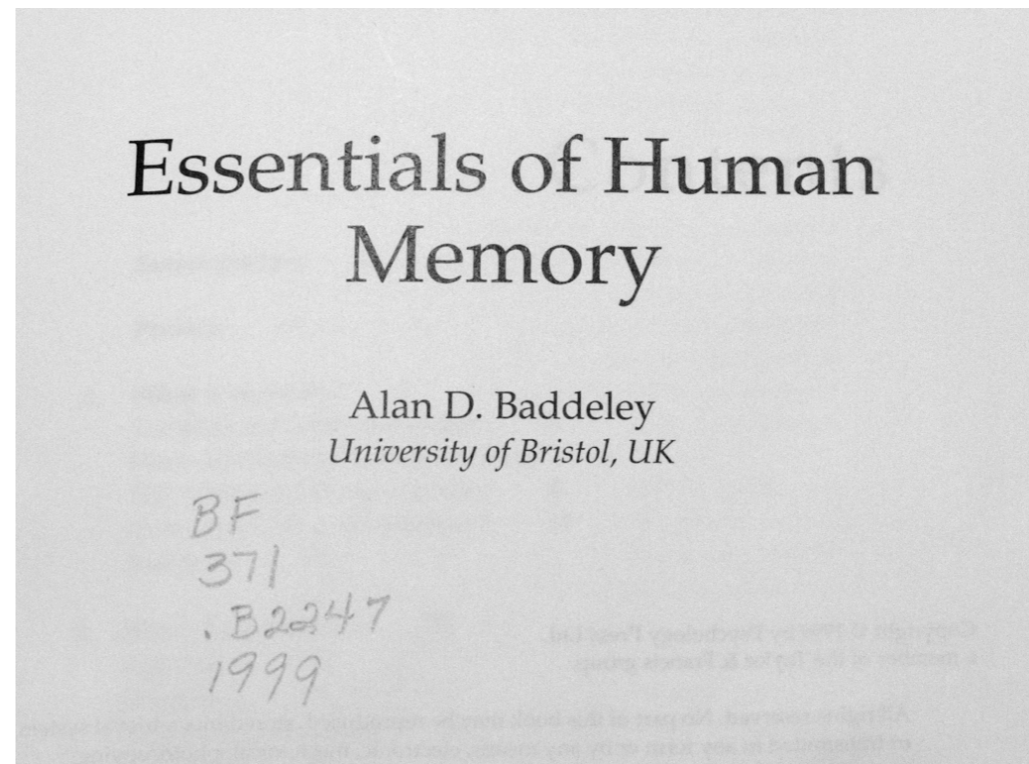
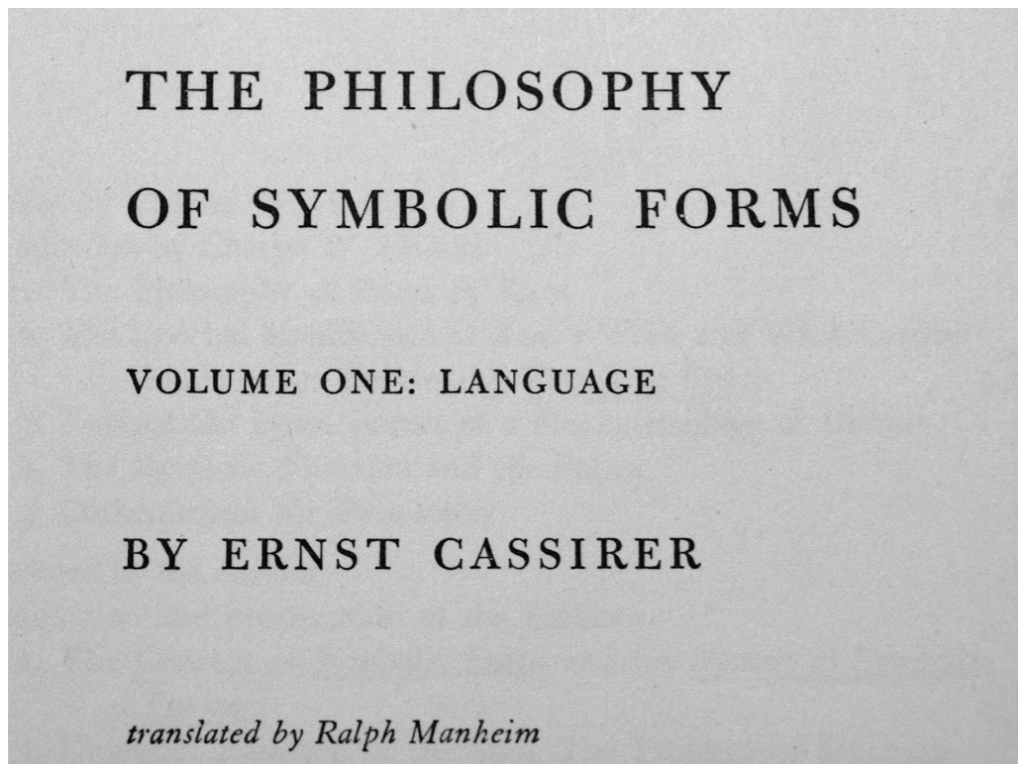
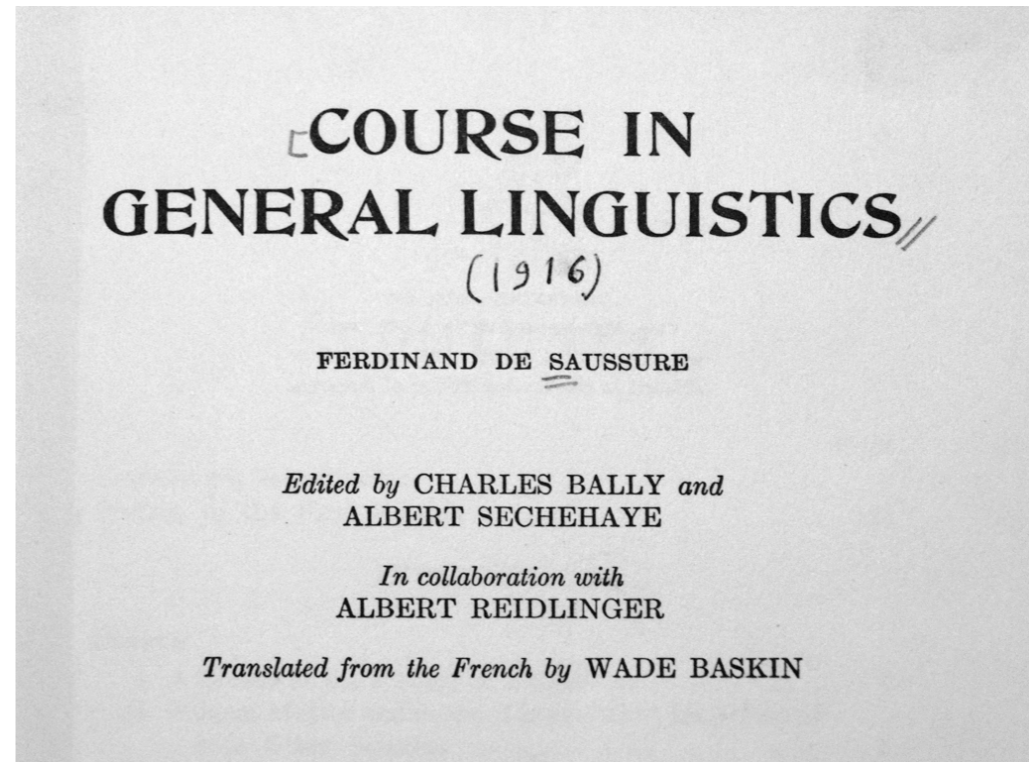
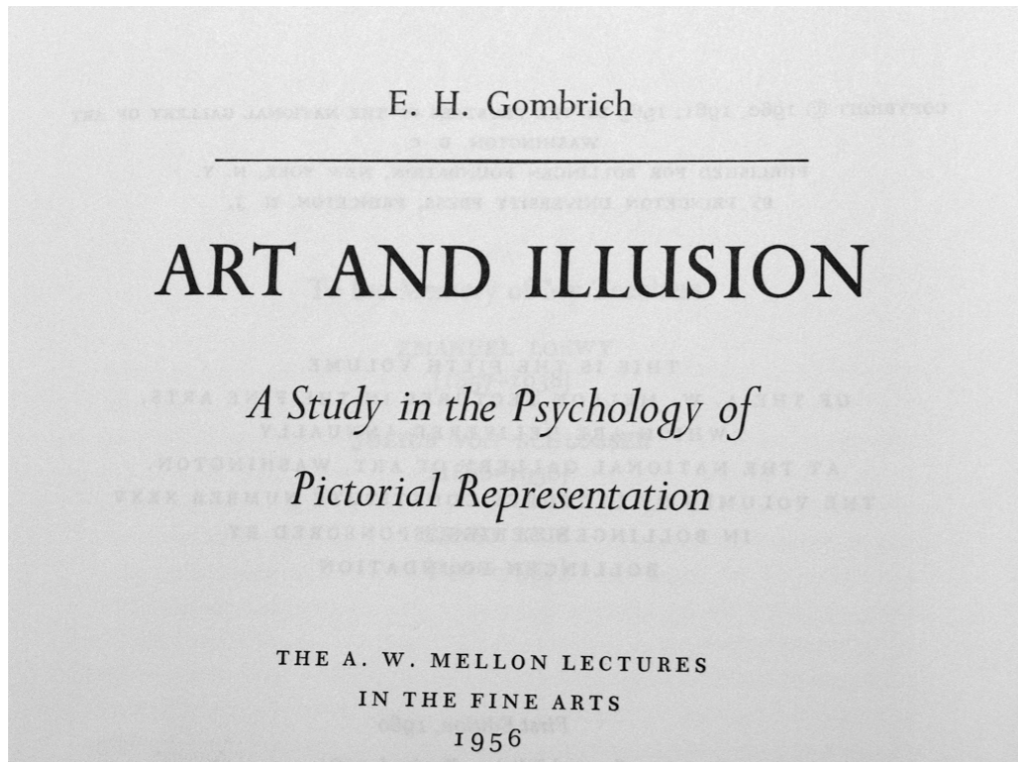
Piet Mondrian:
Broadway Boogie-
Woogie, 1943

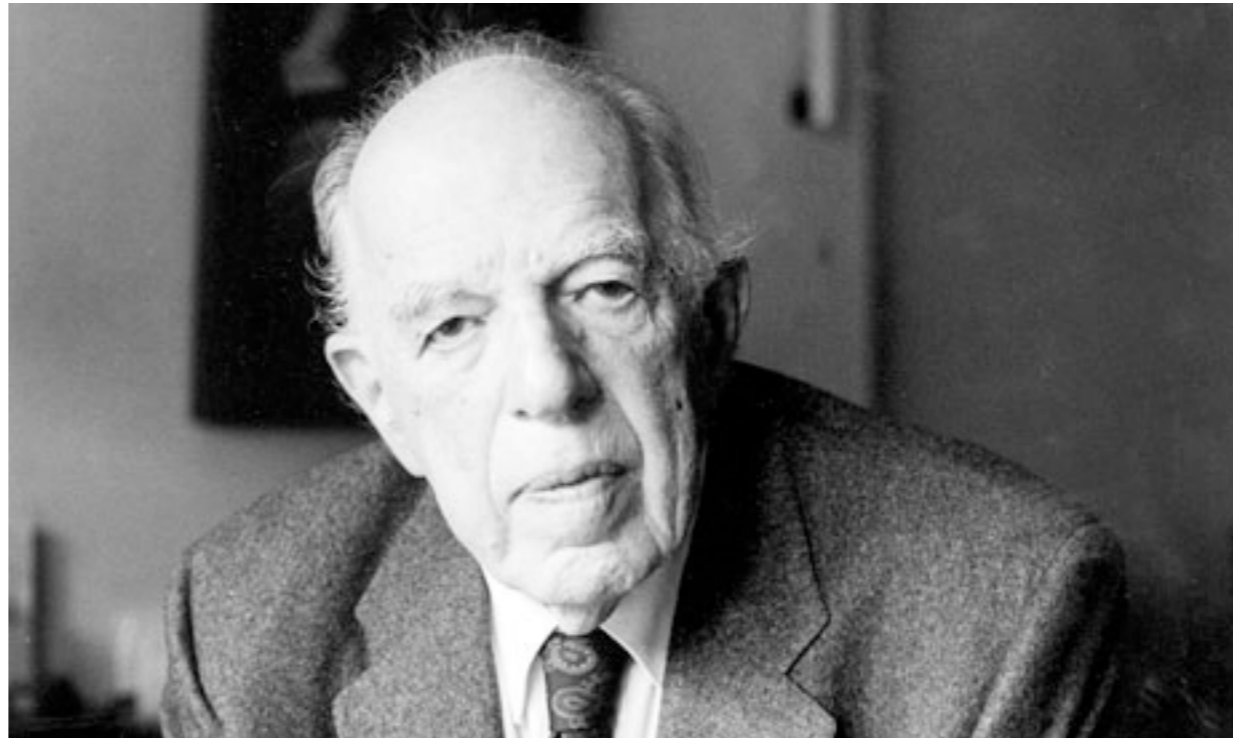
Massimo Vignelli

New York Subway Map 1979 (2013)



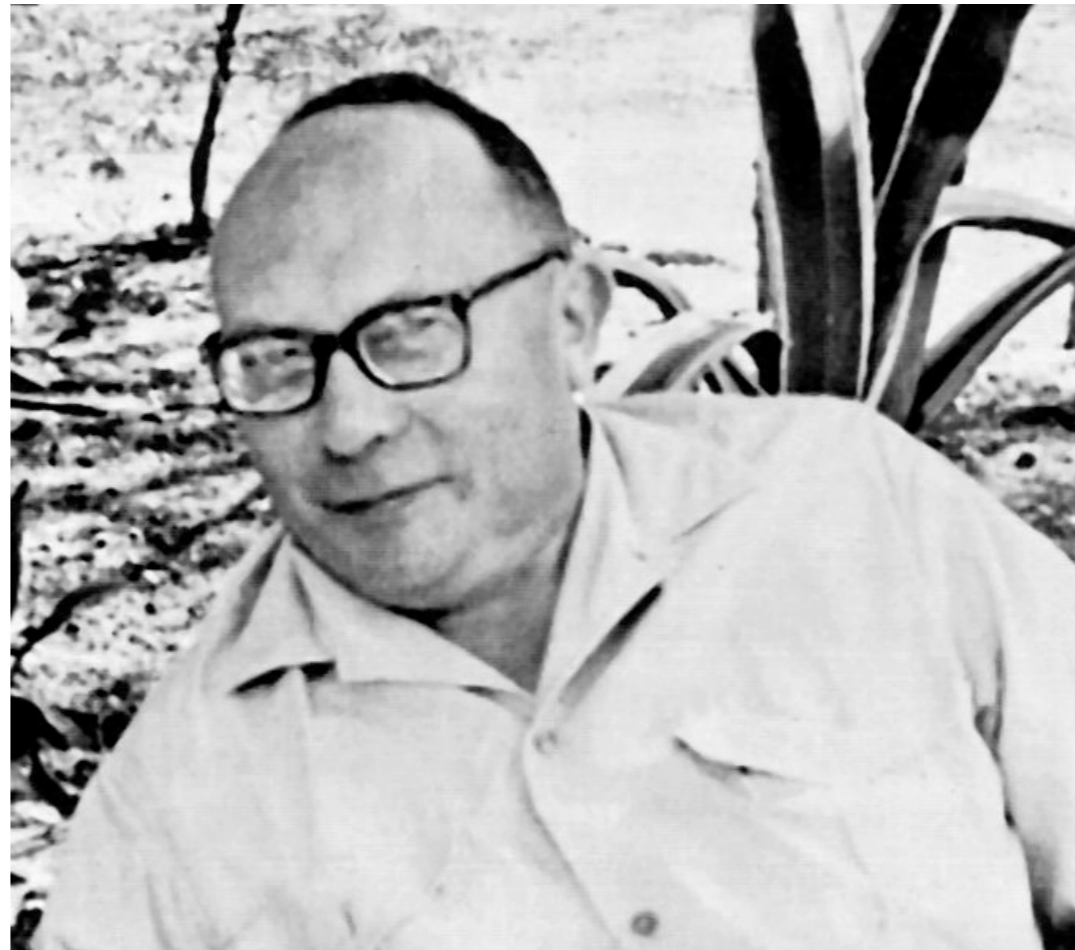
Michael Hertz







ERNST GOMBRICH

ART AND ILLUSION, 1960



JACQUES BERTIN

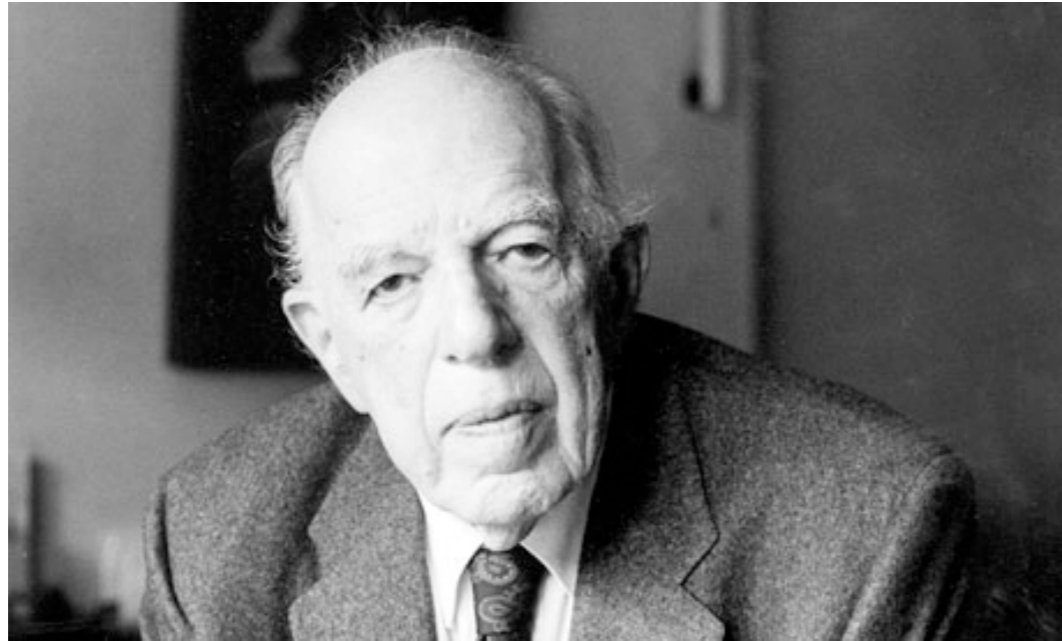
SEMIOLOGY OF GRAPHICS, 1967

*		PERCEPTUAL SYSTEMS	
			
MEANING attributed to perceptions	The system is open to any meaning; it is PANSEMIC	Music	Nonfigurative image
	The system tends towards the definition of a concept; it is POLYSEMIC	Verbal language	Figurative image
	Transcription of relationships between previously defined concepts; the system is MONOSEMIC	Mathematics	Graphics

JACQUES BERTIN

SEMIOLOGY OF GRAPHICS, 1967, 2004 p.419





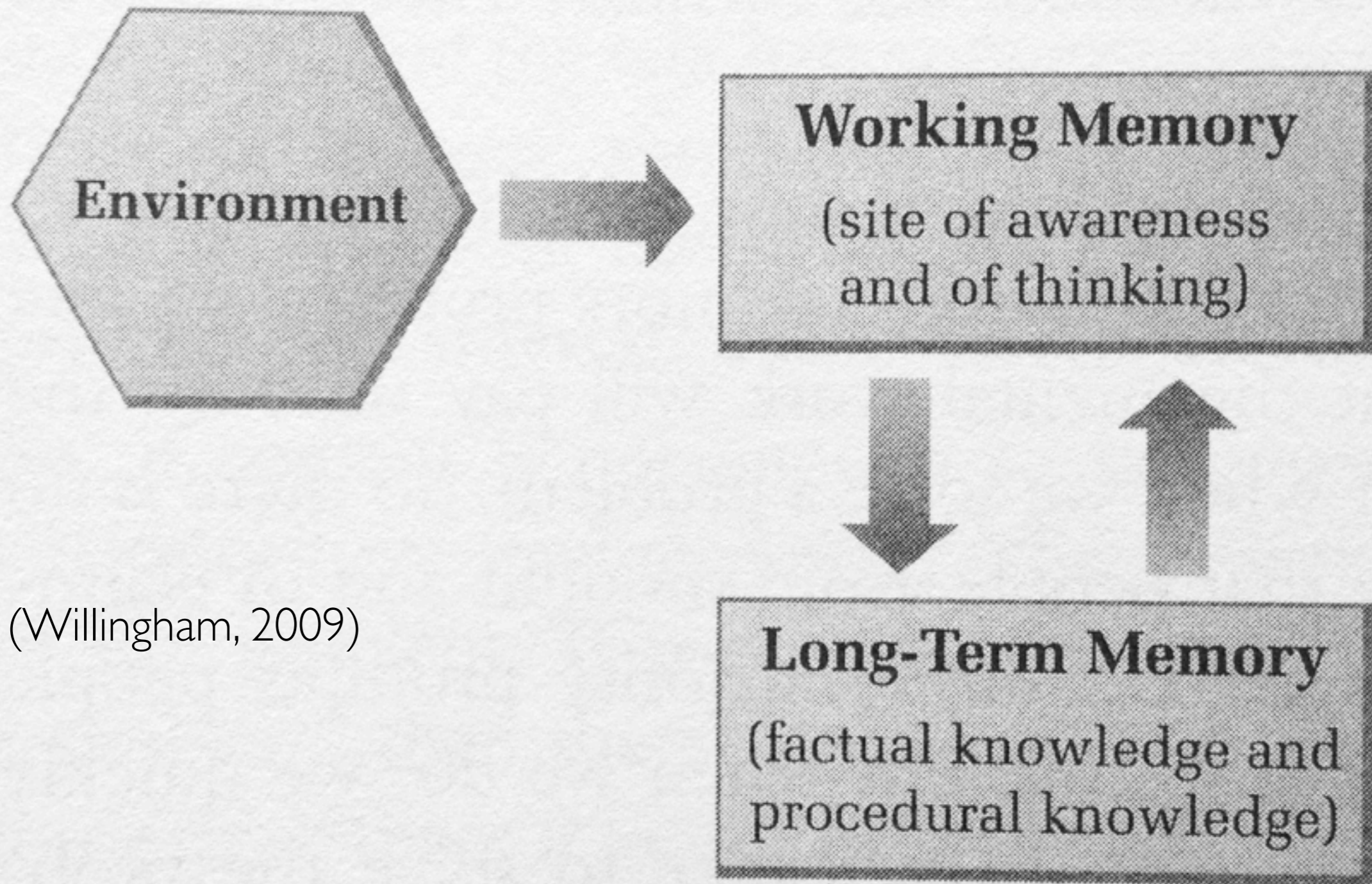
ERNST GOMBRICH
ART AND ILLUSION, 1960

immediate memory
short-term memory
working memory



ALAN D. BADDELEY
WORKING MEMORY, 1974

2. THE PEEPHOLE OF WORKING MEMORY



(Willingham, 2009)

FIGURE 6: Just about the simplest model of the mind possible.



Kagemusha, Akira Kurosawa, 1980

WORKING MEMORY



1 A beautiful design that did not work

In 1972 the New York City Transit Authority introduced a beautiful map of its subway system that was radically different from previous ones (Fig. 1). It was introduced in 1972, but just seven years later, after many complaints from confused subway riders, it was discontinued and a new map issued, with a more traditional design that has survived to the present day basically unchanged (Lloyd & Ovenden, 2012).

The discontinued map was by the Italian designer Massimo Vignelli, and is regarded as a monument to modernism, a graphic nod to abstract art, and a model of simplicity, with its clean, bright-colored lines admitting only verticals, horizontals, and forty-five degree angles. The map is indeed a beauty to behold (Lloyd & Ovenden, 2012). *as Broadway Boogie-Woogie* (Fig. 2).

Figure 1: New York subway map,



78. Pino Trogu collection.

Anais do
6º Congresso Internacional de Design da Informação
5º InfoDesign Brasil
6º Congic
Pino Trogu
San Francisco State University, USA
Recife | Brasil | 2013
ISBN

Proceedings of the
6th Information Design International Conference
5th InfoDesign Brazil
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CIDI2013

6TH CIDI
6th Information Design
International Conference

5TH InfoDesign
5th Brazilian Conference
of Information Design

6TH CONGIC
6th Information Design
Student Conference



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Welcome to CIDI2013! To register is easy!

Your registration will be approved automatically following the confirmation of your payment.

[Register now!](#)

*My problem is that
I have been persecuted
by an integer.*



GEORGE A. MILLER
MAGICAL NUMBER SEVEN, 1956

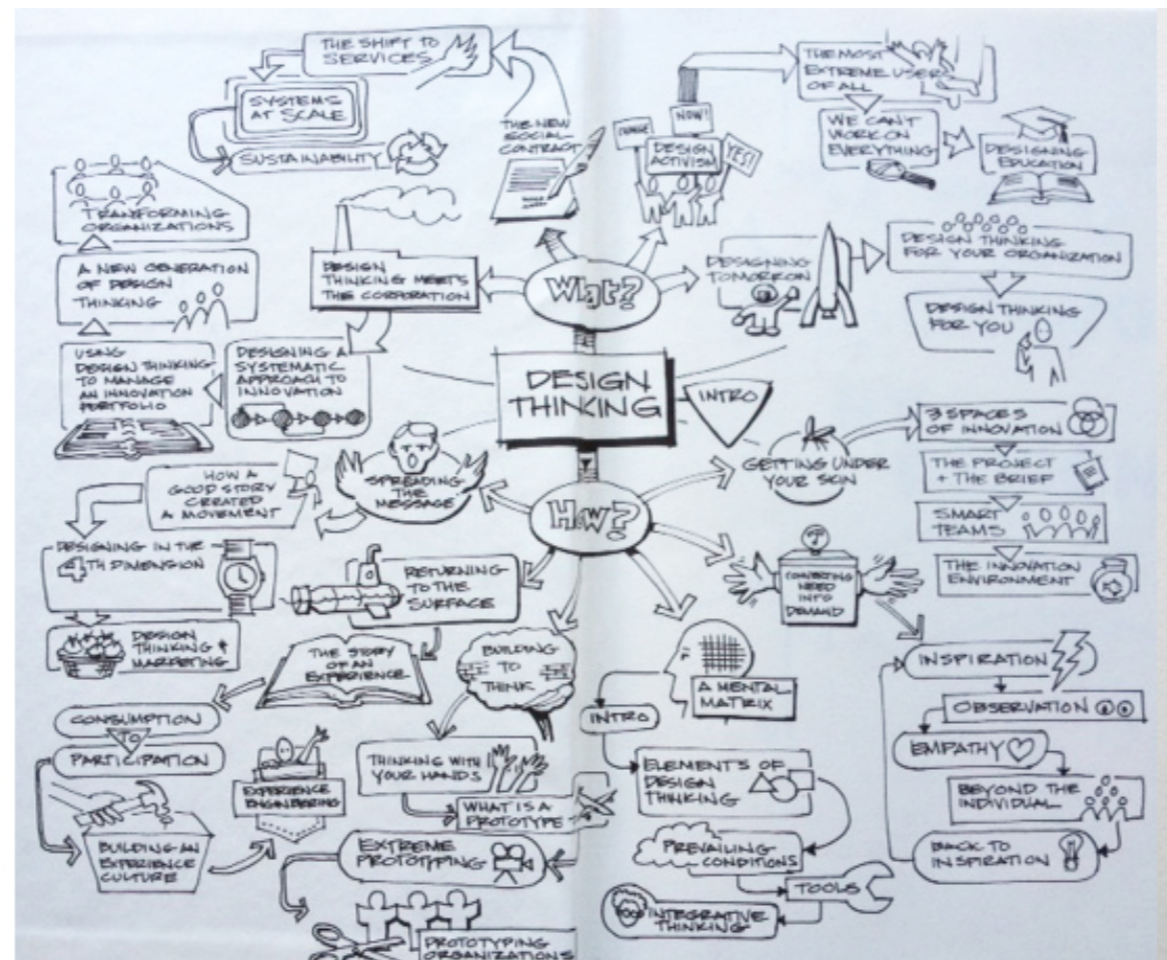
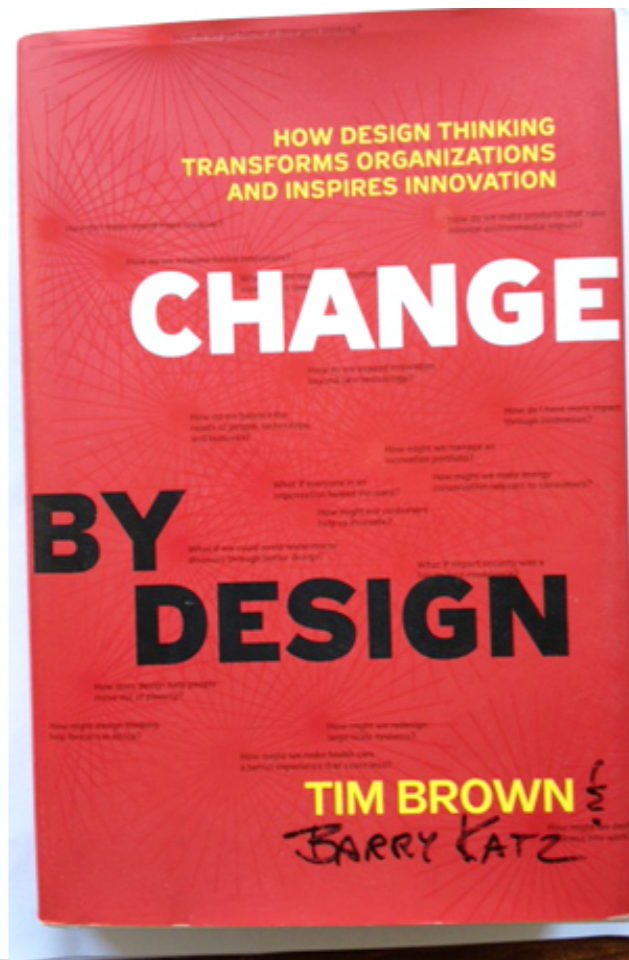
4-3-4-6-5-9-6-2-3

“chunks”

434-65-9623

CONCEPT MAP

ABSTRACT REFERS TO ABSTRACT



CONTENTS

INTRODUCTION: THE POWER OF DESIGN THINKING	1
PART I: WHAT IS DESIGN THINKING?	
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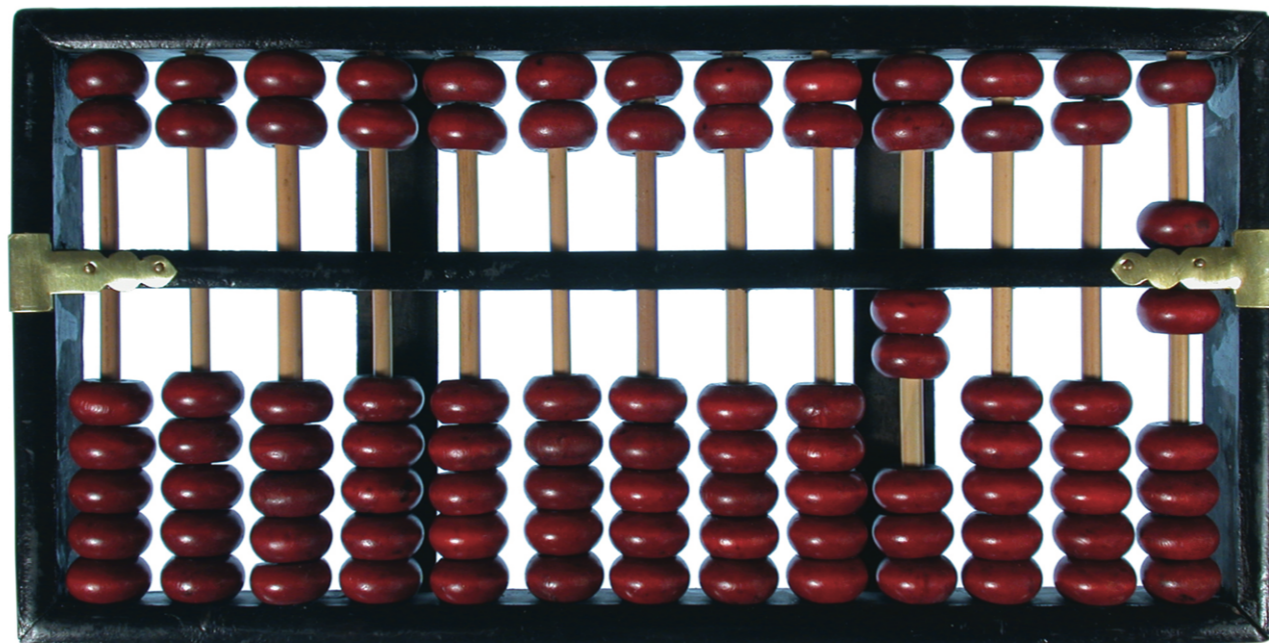
ROAD MAP ANALOGY

ABSTRACT REFERS TO CONCRETE



SECONDS – NOT ITEMS

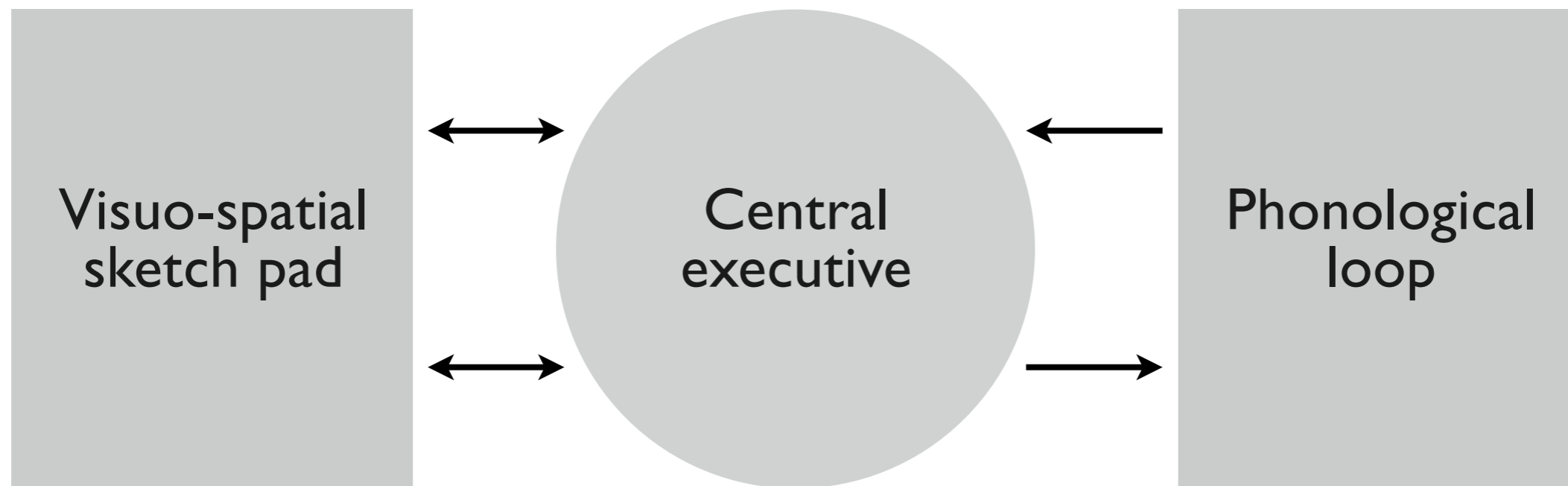
Chinese students' mental math advantage:
number words in Chinese have fewer syllables
and thus take a shorter time to process.



(Geary et al, 1996)

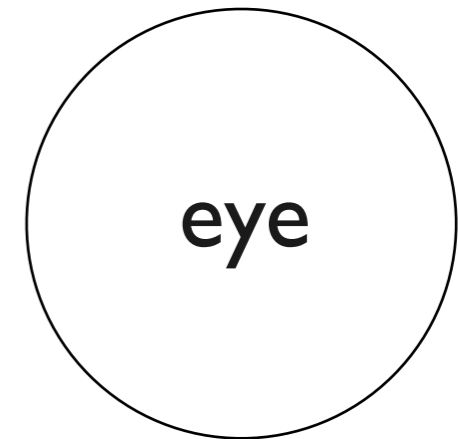
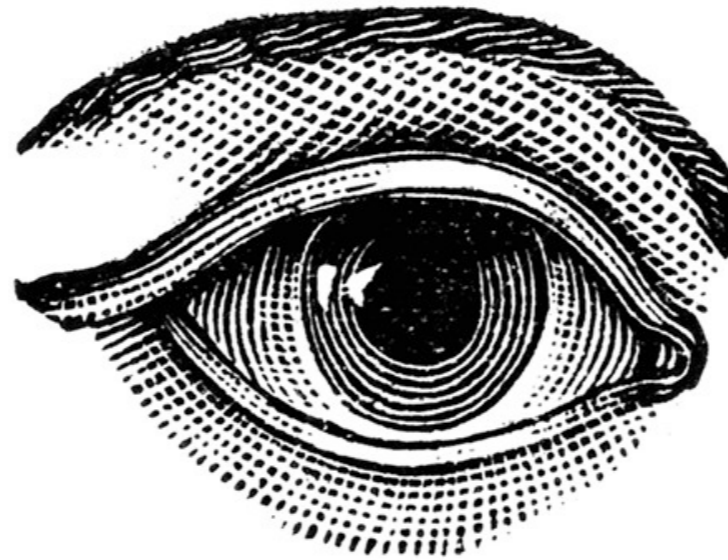
3. THE DUALITY OF WORKING MEMORY: THE VERBAL AND THE VISUAL

WORKING MEMORY MODEL

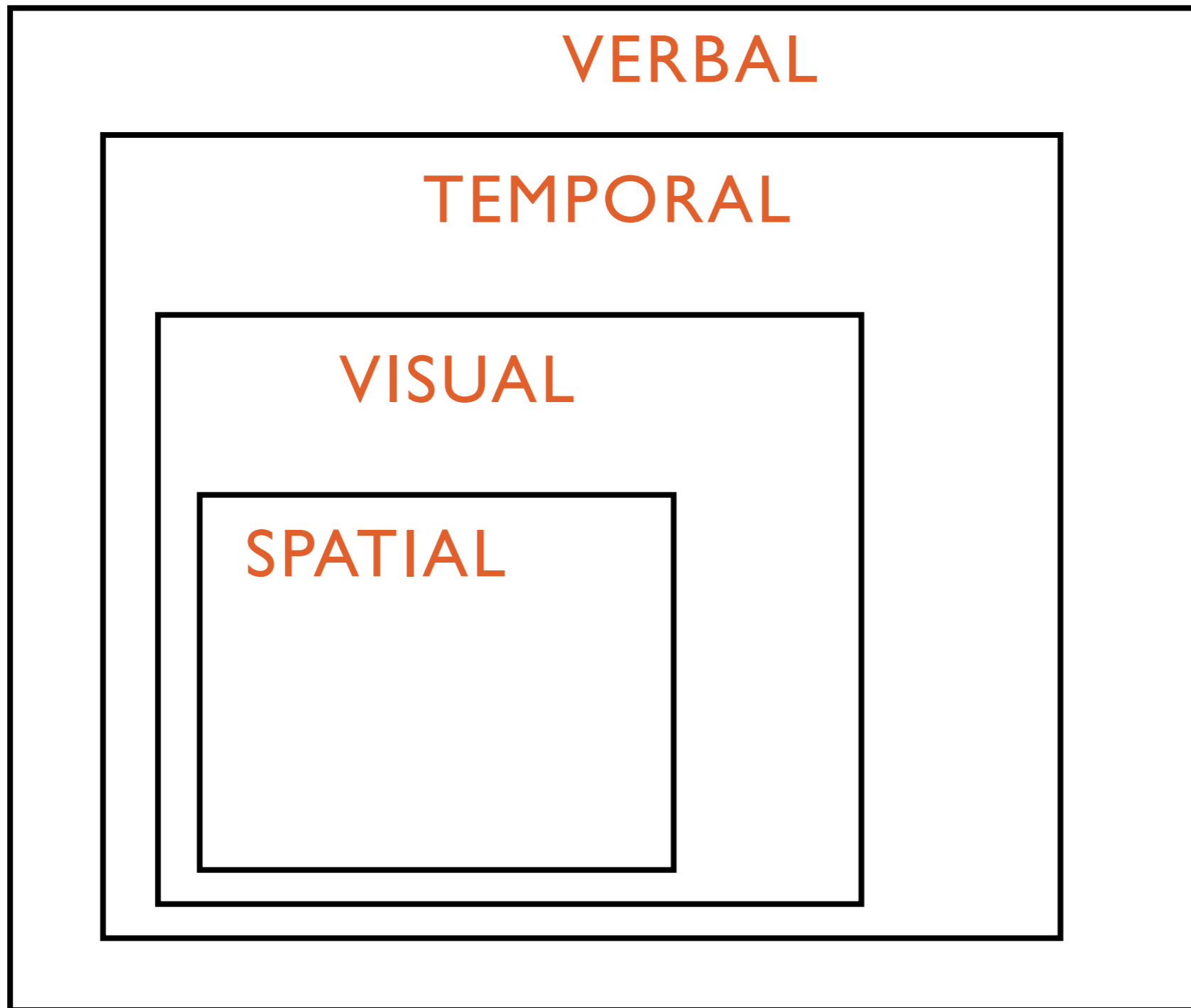


(Baddeley, 1999)

“NAMING” AND SUB-VOCALIZATION



(Noizet & Pynte, 1976)



THE GEICO GECKO advertisements

(Government Employee Insurance Company)



The 1999 Geico Gecko commercial

4. CONVENTION AND CONTEXT (I): SHARED KNOWLEDGE

THE MYTH OF THE GIVEN

(Sellars, 2009)

Every form we perceive is *post-perceptum*.



Every form we perceive is *post-perceptum*.





"All the News
That's Fit to Print"

The New York Times

Late Edition

Today, sunny to partly cloudy, high 84. Tonight, patchy clouds, low 66. Tomorrow, sunny for the most part, remaining comfortable, high 84. Weather map appears on Page A22.

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NEW YORK, TUESDAY, JULY 10, 2012

\$2.50



DADO RUVIC/REUTERS

17 Years After Bosnia Massacre, a Painful Process Goes On

On Wednesday, 520 recently identified victims of the 1995 killings in Srebrenica, in which 8,000 Muslims died, will be reburied.

At Top School, Cheating Voids 70 Pupils' Tests

By AL BAKER

Seventy students were involved in a pattern of smartphone-enabled cheating last month at Stuyvesant High School, New York City officials said Monday, describing an episode that has blemished one of the country's most prestigious public schools.

The cheating involved several state exams and was uncovered after a cellphone was confiscated from a 16-year-old junior during a citywide language exam on June 18, according to a city Department of Education investigation.

Cellphones are not permitted in city schools, and when officials looked into the student's phone, they found a trail of text messages, including photos of test pages, that suggested pupils had been sharing information about state Regents exams while they were taking them.

Sixty-nine students had received the messages and responded to them, the department said. *Continued on Page A3*

A Life-Death Predictor Adds to a Cancer's Strain

By GINA KOLATA

In May 2011, Cassandra Caton, an 18-year-old with honey-colored hair and the soft features of a child, suddenly went blind in her right eye. Five months later, an ophthalmologist noticed something disturbing. A large growth in the back of her eye had ripped her retina, destroying her vision.

He sent her to Washington University in St. Louis, a three-hour drive from her sparsely furnished apartment in the working-class town of Sedalia, Mo.

And there, Ms. Caton, mother of a 2-year-old daughter, wife of a chicken factory worker, got at-



DILIP VISHWANATH FOR THE NEW YORK TIMES
Cassandra Caton had surgery to remove a cancerous eye.

GENETIC GAMBLE
Last of three articles.

most incomprehensibly bad news. The growth was cancer, a melanoma, and it was so huge it filled her eyeball.

"Am I going to die?" Ms. Caton asked. "Is my baby going to have a mommy in five years?"

It is a question that plagues cancer patients. Doctors try to give survival odds based on a tumor's appearance and size, but often that is just an educated guess.

But Ms. Caton had a new option, something that became possible only in this new genetic age. She could have a genetic test of her tumor that could reveal her prognosis with uncanny precision. The test identifies one of two gene patterns in eye melano-

mas. Almost everyone in Class 1 — roughly half of patients — is cured when the tumor is removed. As for those in Class 2, 70 to 80 percent will die within five years. Their cancers will re-emerge as growths in the liver. For them, there is no cure and no way to slow the disease.

No test has ever been so accurate in predicting cancer outcomes, researchers said.

The data from studies of the test are "unbelievably impressive," said Dr. Michael Birrer, an ovarian cancer specialist at Massachusetts General Hospital. "I would die to have something like that in ovarian cancer."

While for now the ocular melanoma test is in a class by itself, cancer researchers say it is a taste of what may be coming as they continue to investigate the

Continued on Page A13

Bank Scandal Turns Spotlight To Regulators

Widening Inquiry Into Interest-Rate Fixing

By BEN PROTESS
and MARK SCOTT

As big banks face the fallout from a global investigation into interest rate manipulation, American and British lawmakers are scrutinizing regulators who failed to take action that might have prevented years of illegal activity.

Politicians in both London and Washington are questioning whether regulators allowed banks to report false rates in the run-up to the 2008 financial crisis and afterward. On Monday, Congress stepped into the fray, requesting information about the role of the Federal Reserve Bank of New York, according to people close to the matter.

The focus on regulators and other financial institutions has intensified in the last two weeks after the British bank Barclays agreed to pay \$450 million to resolve an enforcement case. British and American authorities accused the bank of improperly influencing key interest rates to deflect concerns about its health and bolster profits.

The Barclays settlement is the first action stemming from a broad investigation into how banks set key benchmarks, including the London interbank offered rate, or Libor. The pricing of \$350 trillion of financial products, including credit cards, mortgages and student loans, is pegged to Libor and other such rates.

Authorities around the world are now considering action against more than 10 big banks, including UBS, JPMorgan Chase and Citigroup. The banks also face a raft of civil litigation from municipalities, investors and other financial firms that claim they lost money from the misreporting of rates. These lawsuits could end up costing the banking industry

Continued on Page B6

ROMNEY, AGAIN, OUTDOES OBAMA IN FUND-RAISING

\$35 MILLION GAP IN JUNE

'Super PACs' Linked to Democrats Also Trail Rivals on Right

By NICHOLAS CONFESSORE

In the battle for political cash, President Obama is finding himself in an unaccustomed place during the final months of the 2012 campaign: he is losing.

Mitt Romney and the Republican National Committee easily outraised the formidable Obama money machine for the second month in a row. A nonstop schedule of high-dollar events around the country brought in \$106 million during June to Mr. Obama's \$71 million, giving him and his party four times the cash on hand that it had just three months ago.

Mr. Obama's fund-raising deficit in part reflects how steeply the terrain has shifted since 2008, when many Republican donors embraced the candidate and his campaign raised millions of dollars from Wall Street and other traditionally right-leaning industries. Now those donors are swinging hard back to the Republican Party — and to Mr. Romney, whose promise to curtail regulation and cut taxes has helped draw a torrent of five-figure checks.

In a worrisome development for the Obama campaign, Mr. Romney, who until now has been heavily dependent on donors giving the maximum federal contribution, also showed success in June drawing small donors, a traditional strength of the Obama campaign. Reflecting the intensifying general election matchup with Mr. Obama and conservative anger over the recent Supreme Court decision upholding the president's signature health care law, Mr. Romney raised

Continued on Page A12

A Reality Series Intrudes on Silicon Valley, and Finds It Cringing

By DAVID STREITFELD

SAN FRANCISCO — Silicon Valley is finally getting the treatment once reserved for rowdy



sister Randi is an executive producer of the series has therefore rankled. Ms. Zuckerberg, an executive at Facebook until last summer, declined to be interviewed, but defended her show

New-York Daily Times.

THE NEW-YORK DAILY TIMES... IN PRINTED EVERY MORNING... VOL. L. NO. 1.

New-York Daily Times.

THE NEWS FROM EUROPE... AFFAIRS IN ENGLAND... THE ELECTION IN FRANCE...

New-York Daily Times.

VOL. L. NO. 1. NEW-YORK, THURSDAY, SEPTEMBER 18, 1851. PRICE ONE CENT.

The House, the very act of the House in voting to elect the President... The House will probably to fall of the Assembly...

President will probably to fall of the Assembly... The House will probably to fall of the Assembly...

Italy... The Government... The King of Naples... Lombardy... Tuscany...

Italy... The Government... The King of Naples... Lombardy... Tuscany... The House of Commons...

The House of Commons... The House of Commons... The House of Commons... The House of Commons...

"All the News
That's Fit to Print"

The New York Times

NY Times Timeline
A distillation of more than 150 years, 52,000 issues and billions of words drawn from The Times's archives and electronic database.

VOL. CLXI . . . No. 55,817

MONDAY, NOVEMBER 5, 2012

Printed in California

THE HISTORY OF THE NEW YORK TIMES 1851 - 2010

Year 1851

September 18

"We publish today the first issue of the New-York Daily Times, and we intend to issue it every morning (Sundays excepted) for an indefinite number of years to come." The founders are Henry Jarvis Raymond and George Jones.

Year 1852

Henry Jarvis Raymond and George Jones publish a Western edition, The Times of California. It arrives whenever a mail boat makes its journey around Cape Horn. It dies with the rise of California Newspapers.

Year 1854

September 27

The trans-Atlantic steamer Arctic goes down; fewer than 50 survive. The Times beats the herald with an exclusive eyewitness report.

Year 1856

October

The Associated Press is formally organized, with Raymond as a director.

Year 1859

June

During the Italian war for independence, Raymond gets a 10-day jump on the other New York Papers with his eyewitness account of the Battle of Solferino. His wife, in Paris, gets his report onto the last mail boat to New York.

October

The Times publishes extensive reports from the Home's Foreign Affairs

even bigger fight to come, the Tweed series.

Year 1869

June 18

Raymond dies suddenly. George Jones takes over as a publisher.

Year 1870 - 1871

A series of Times exposés brings down the corrupt Tweed Ring and ends its domination of City Hall.

Reaching out to New York's German residents - 25 percent of the city's population - The Times also prints the articles in a German-language supplement.

Year 1873

E. Remington & Sons starts producing typewriters in the United States.

Year 1876

Alexander Graham Bell invents the telephone. The Times will get its first phone number (number: John 470) in 1886.

Disgusted with the scandals in the Grant Administration, George Jones, now the publisher, moves The Times away from the Republican Party.

November 7

With the Headline "A Doubtful Election", The Times goes it alone and declares that the presidential contest between Rutherford B. Hayes and Samuel J. Tilden is without a victor; the other papers give the election to Tilden. After months, an electoral commission and Congress decide in Hayes's favor.

azine begins, carrying the newspaper's first photographs.

October 10

First issue of The Saturday Review of Books and Art. Within a year it is included in the Sunday paper.

October 25

"All the News That's Fit to Print," coined by Ochs himself after a contest finds no stronger candidate for a slogan, first appears on the editorial page. It moves to Page 1 on February 10, 1897.

December 1

The hyphen is dropped from the nameplate, which now reads "The New York Times."

Year 1897

July 4

The Times publishes 50 halftone photographs of Queen Victoria's Jubilee procession in the magazine. It is a popular and technical triumph.

Year 1898

October 10

In a gamble, Ochs lowers the price of the daily paper to 1 cent. Circulation triples within a year, to 76,000 from 26,000, and advertising revenues soar.

Year 1901

January

The Times starts the new century with two telephones. The reporters themselves own all the typewriters, but most still write their articles in longhand. Ochs lists products and ser-

Year 1910

May 29

The Times sponsors a daredevil flight from Albany to New York by Glenn Curtiss, resulting in the paper's first Page 1 news photograph.

June 14

First air delivery of The Times, to Philadelphia.

October 16

Walter Wellman sends the first wireless dispatches from a balloon as he tries unsuccessfully to cross the Atlantic.

Year 1912

April 14

Combing through vaguely worded telegraph reports, Van Anda concludes that the Titanic is sinking. The Times is first with the news, and its subsequent coverage is far ahead of the competition.

Summer

Woodrow Wilson, winning the Democratic presidential nomination, says he owes it to an editorial in The Times written by Charles Ransom Miller.

December 16

The first Neediest Cases campaign. At Ochs's suggestion, The Times publishes 100 short, unemotional articles about New Yorkers in need. The first year, 117 contributors send in \$3,630.88. By 2000-01, donations will rise to more than \$8 million; a 9/11 Neediest Fund, formed in the wake of the terrorist attacks, will exceed \$45 million.

Year 1913

wireless receiving station at 43rd Street. Within a few years it will have the world's most extensive wireless news-gathering operation.

June 10

"4 A.M. Airplane Edition." A special edition is sent by plane to Chicago so it can be in the hands of the Republican convention delegates by evening.

July 4

Beginning an Independence Day tradition, The Times publishes a reproduction of the Declaration of Independence.

Year 1921

July 24

In an article in the magazine, Anne O'Hare McCormick (later to be a columnist) writes prophetically that Benito Mussolini will rise to power in Italy.

Year 1925

The 35-millimeter Leica is introduced. Over the next generation, its small size and mobility would revolutionize photo-journalism.

Year 1926

May 1

The first radio photo. Transmitted from London to 43rd Street, it shows a dinner honoring the retiring viceroy of India; it runs at the top of Page 1, under a headline heralding the technological advance.

Year 1927

May 20

"Lindbergh Does It!" Before

Year 1942

February 15

Crossword puzzles begin as a feature of the magazine.

May 18

"The New York Times bids you good-night." The zipper goes dark in compliance with wartime dimout rules.

October 6

The first Fashions of The Times runway show. Within a year what people had been calling the "Times Folly" would become a hit, with thousands seeking tickets.

October 18

Byron Darnton is killed in an accidental bombing off New Guinea — the first of two Times correspondents to die in World War II.

Year 1944

February 1

The Times buys radio station WQXR. It plays mainly classical music and, in keeping with Ochs's distaste for vulgar advertising, accepts no singing commercials. A Times newscast, always introduced with the words "Every hour on the hour," begins on WQXR in 1946.

Year 1945

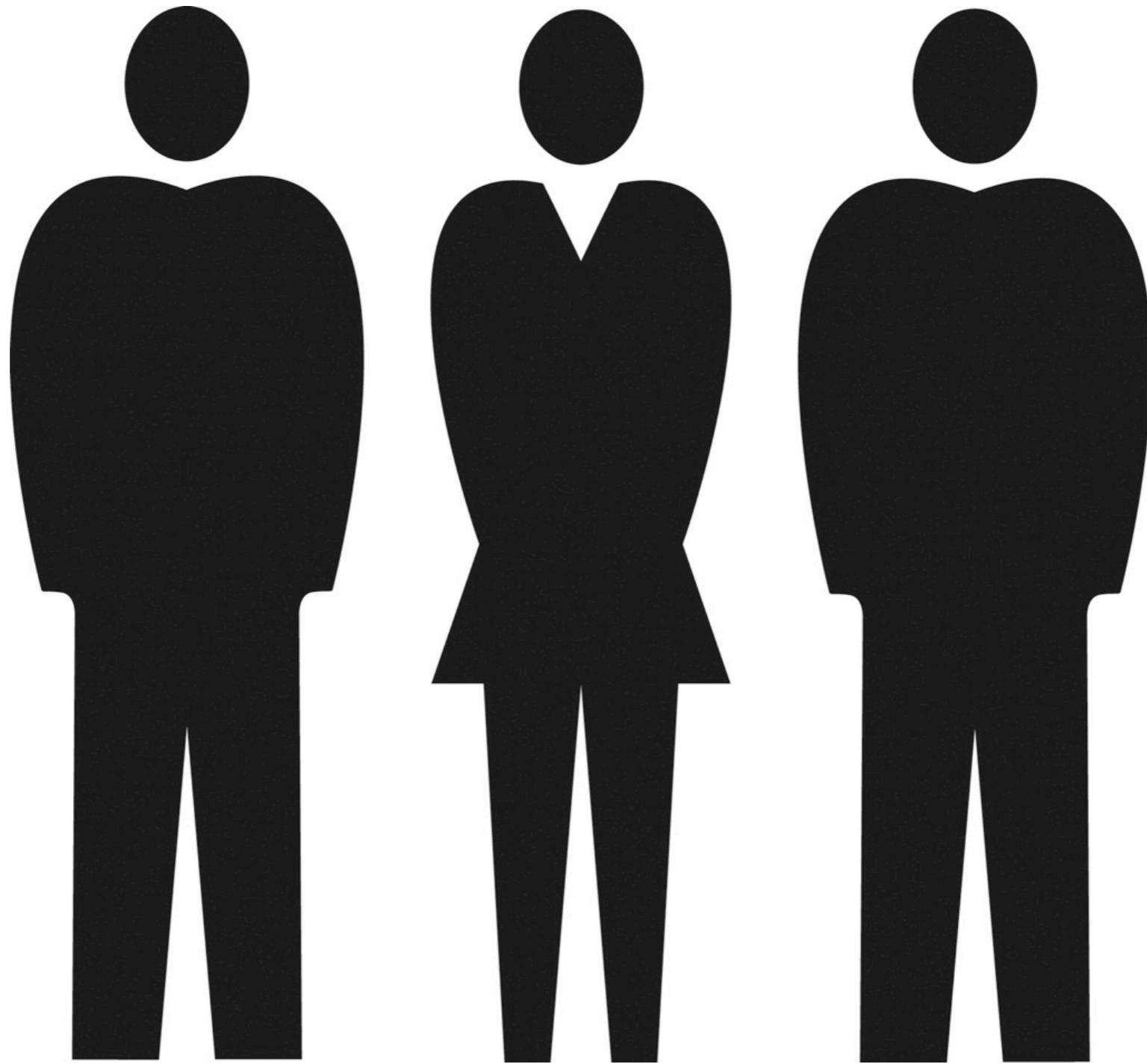
April 30

"Inglorious End of a Dictator." Photographs of the bodies of Mussolini and his mistress, Clara Petacci, are given to a Times reporter in Switzerland and sent to news organizations around the world at no charge.

William L. Laurence, a science reporter, is drafted by the government to write

YY Kong, 2012



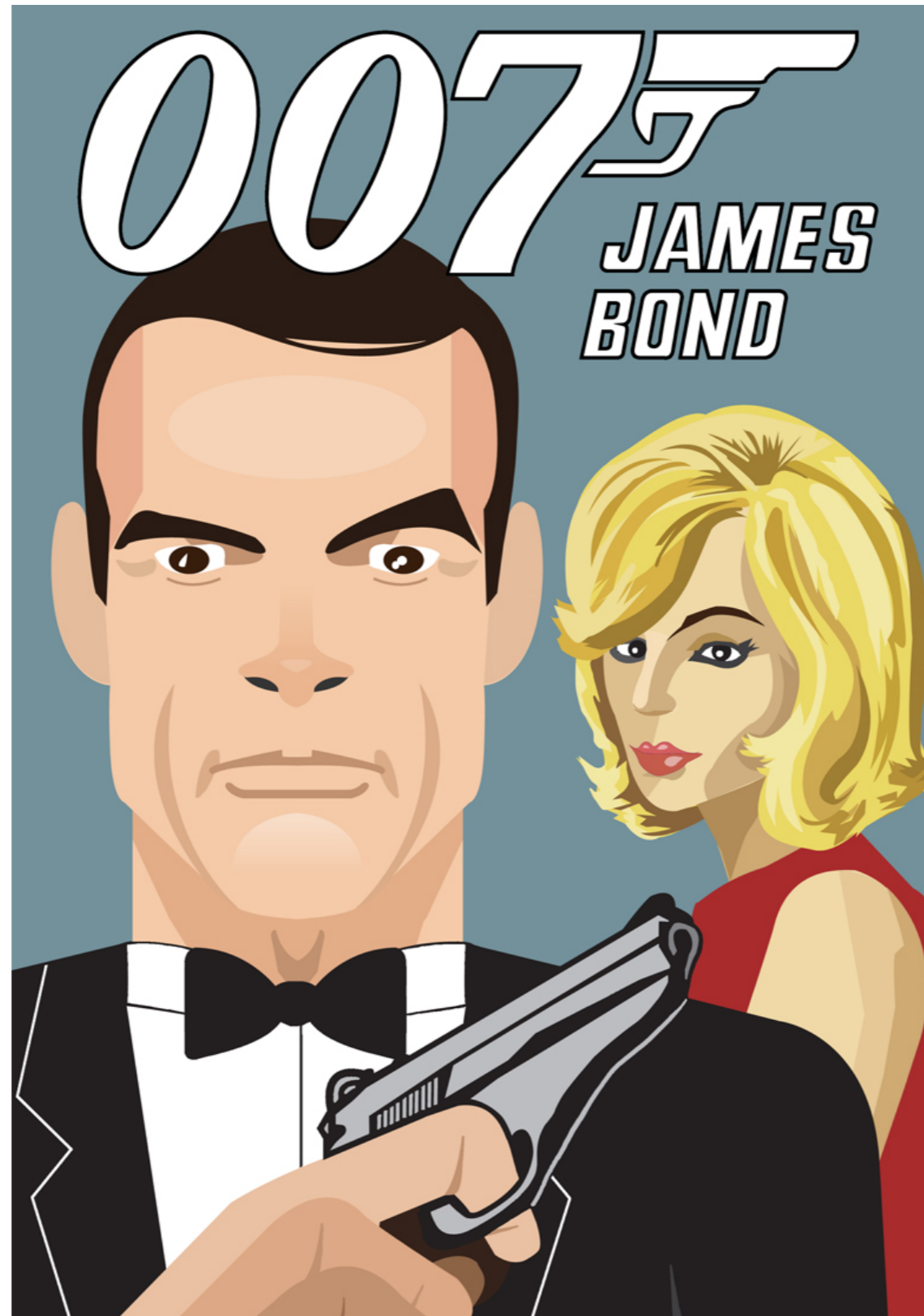


Mauro Panzeri, 2012

CFNINB

CNN FBI

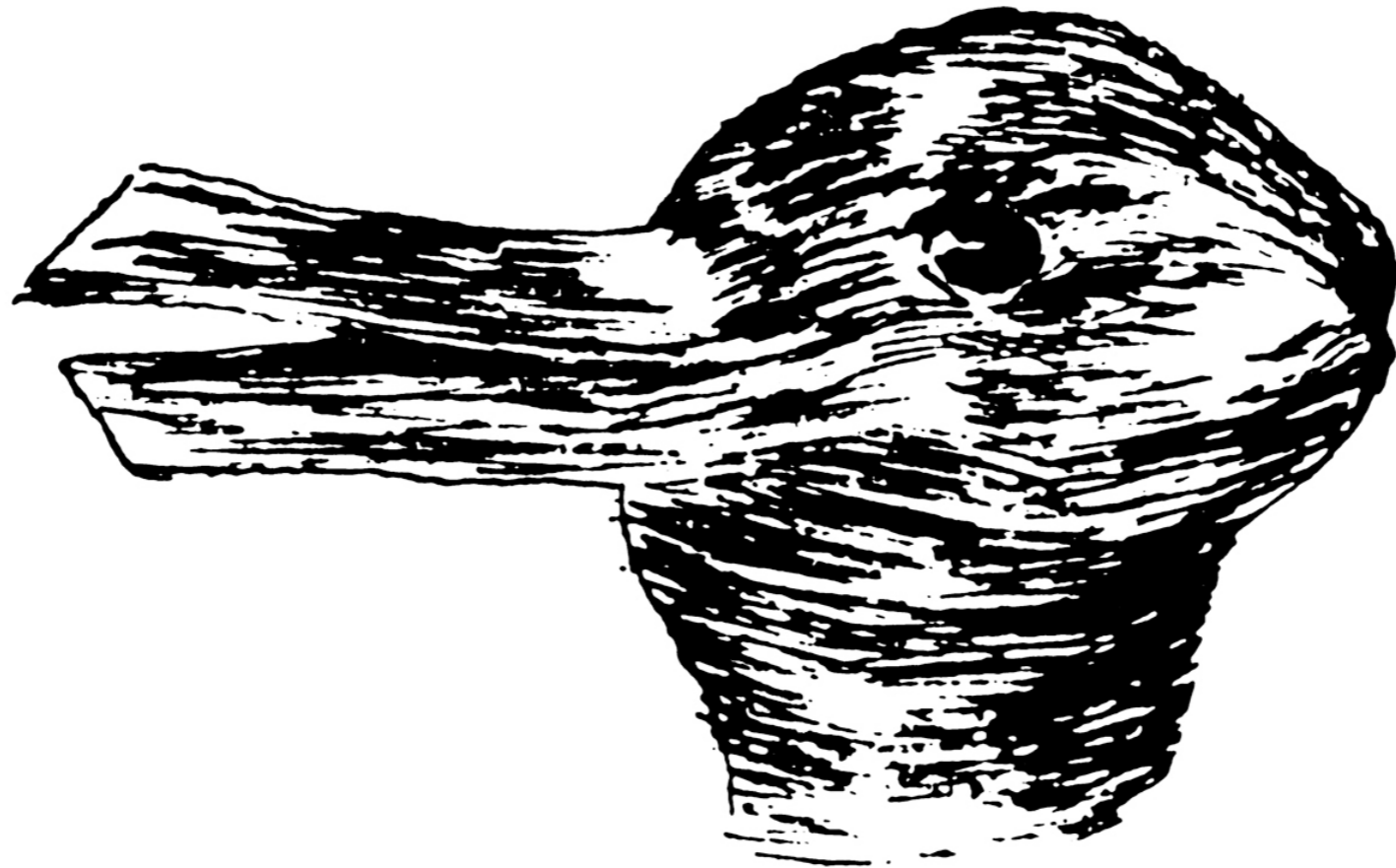
(Willingham, 2009)



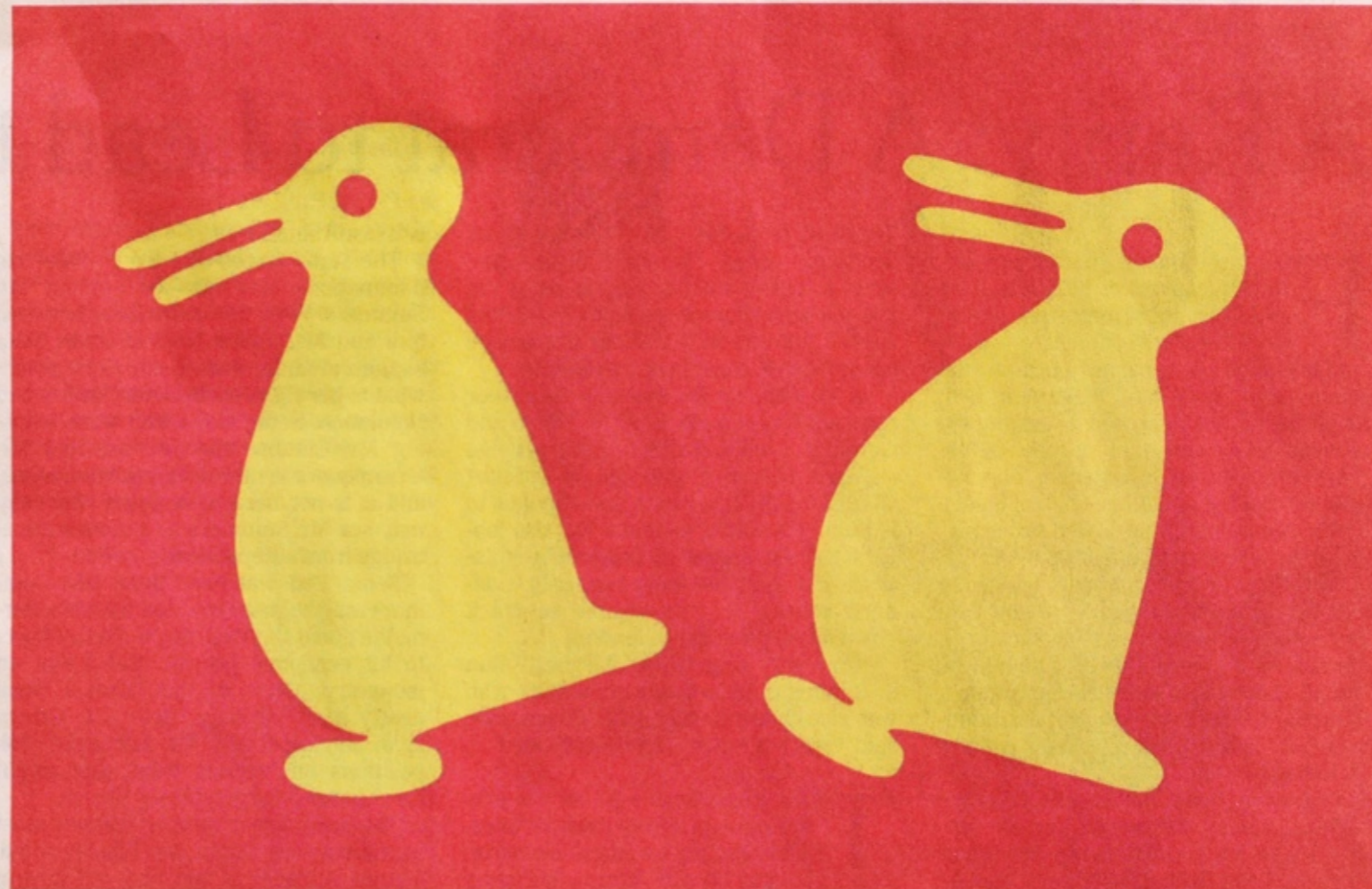
Luke Marsden, 2013
(Zig Zag mag. 1969)

5. CONVENTION AND CONTEXT (2): POLYSEMY AND GENRE

RABBIT OR DUCK?



(Gombrich, 1960)



BEN WISEMAN

FRANK BRUNI

The Dog That (Almost) Roared

IF it quacks like a duck, it's probably a duck.

BEIJING

The other was how much exaggeration, gilding, deception and misdirection nonetheless occur.

much like the genuine article that its employees as well as its customers were duped.

GENRE CLASSIFICATION

(Rosch & Lloyd, 1978)

“SHOT”

Genre & Context

(Miller, 1999)



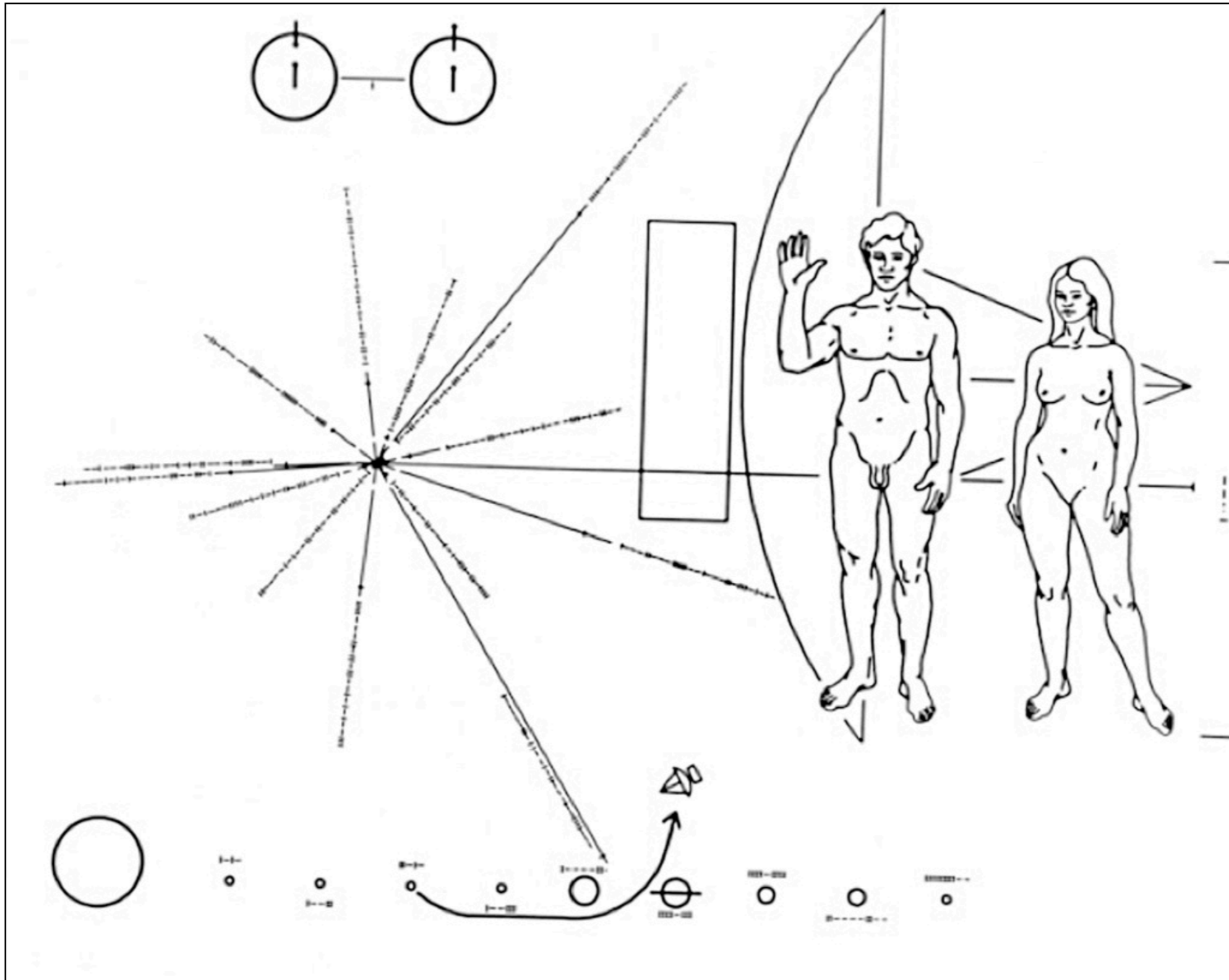
“SHOT”



“SHOT”

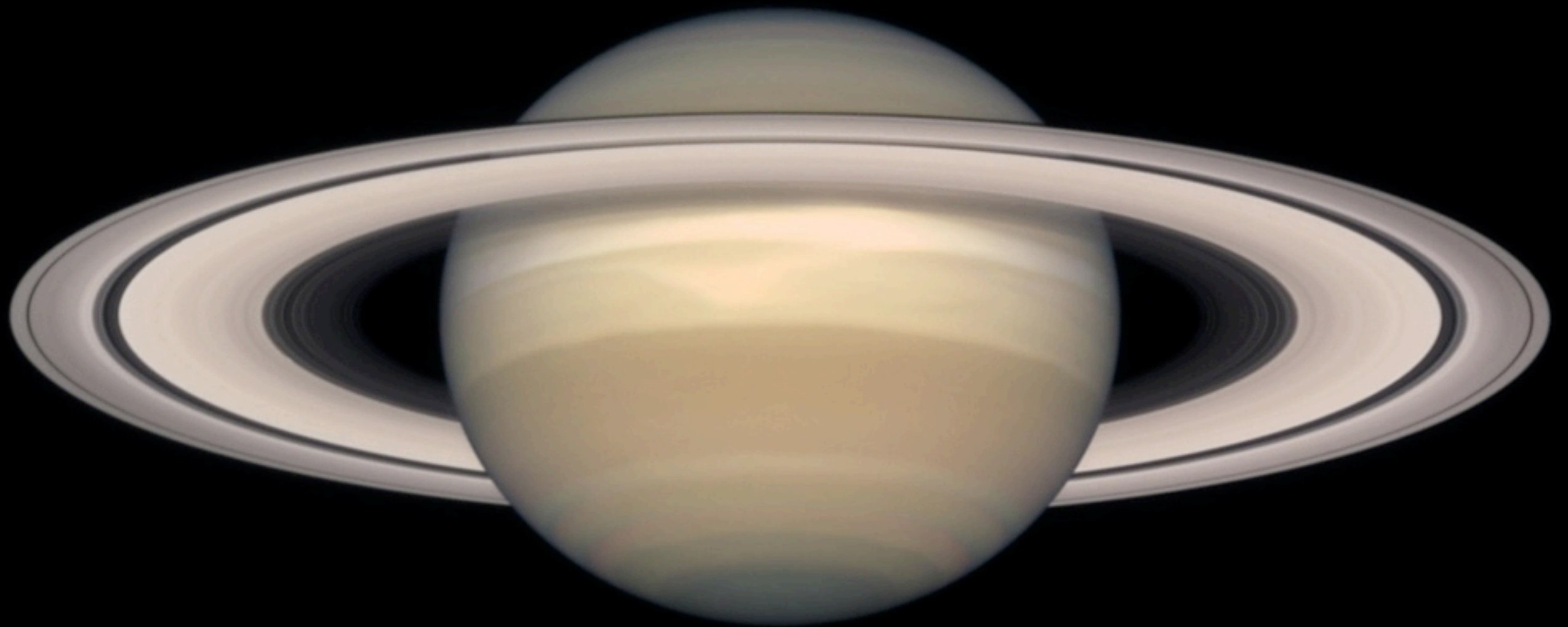


“SHOT”



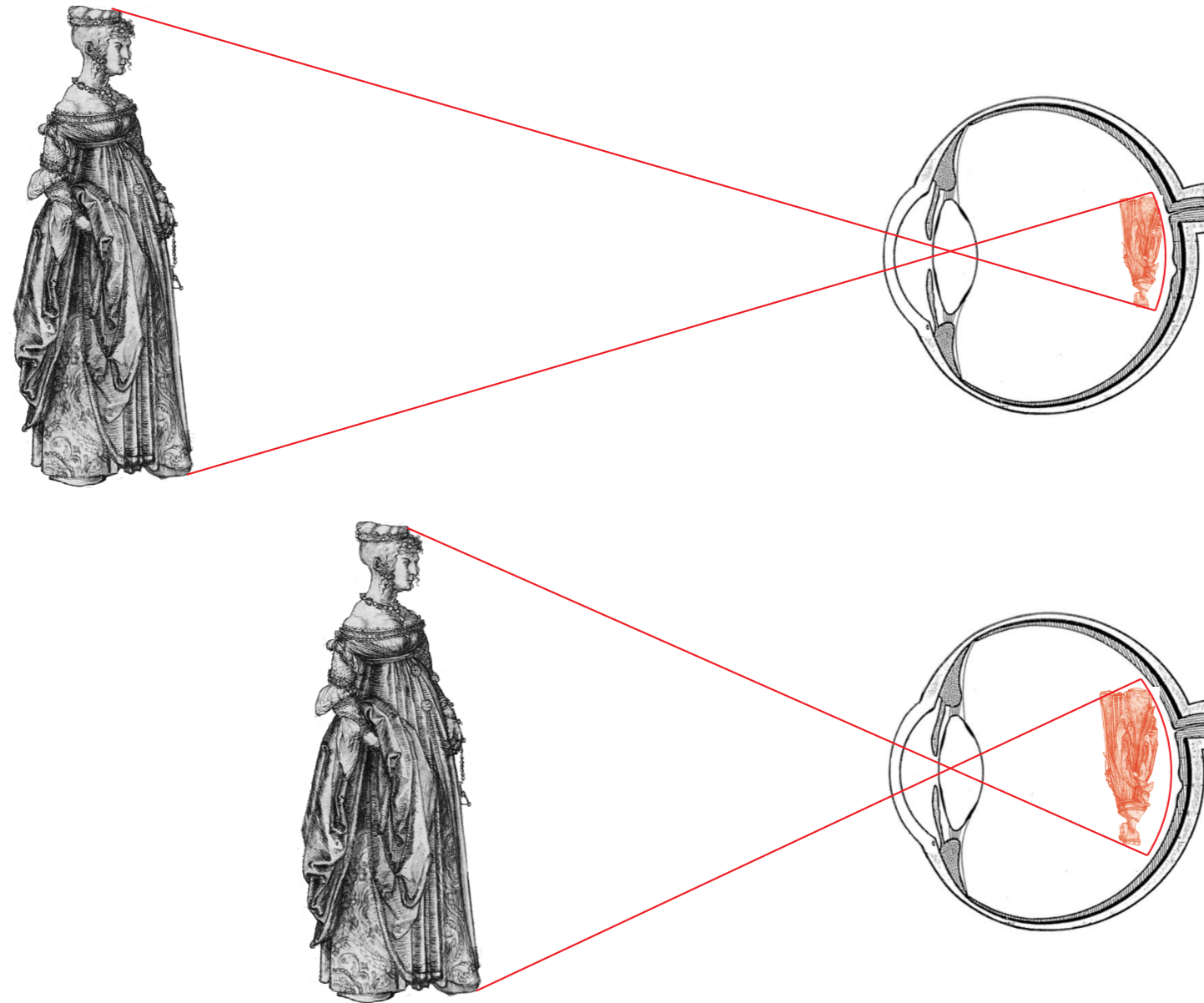
Pioneer 10. NASA, 1972

(Gombrich, 1982)



A UNIVERSAL: FORESHORTENING







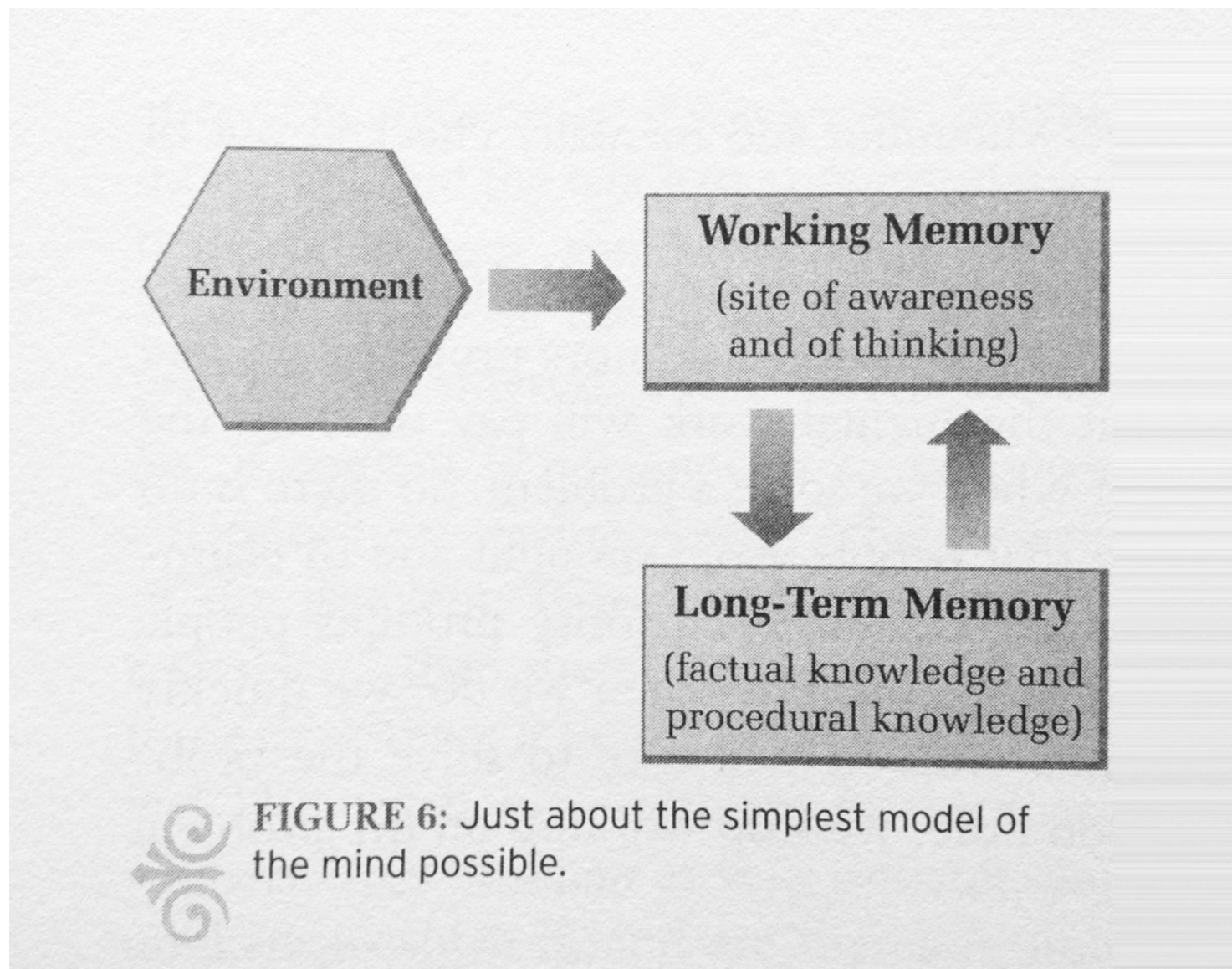
Chauvet cave drawings (33,000-year-old).

(Gombrich, 1996)

6. CONVENTION AND CONTEXT (3): PERCEPTION AS CONSTRUCTION

ACCESSIBILITY

(van der Helm & Leeuwenberg, 1991)



(Willingham, 2009)

ANNOTATION LAYER

(Cox, 2012)



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On Constitutional Anniversary, 215 New Americans
 Mirna Mumm of Lebanon and 214 others became citizens Monday in Washington, 225 years after the Constitution was signed.

ISRAELI DIPLOMAT IS MAN IN MIDDLE

Dispute Heightens Role of U.S.-Born Consul

By ELISABETH BUMILLER
 WASHINGTON — With Prime Minister Benjamin Netanyahu of Israel engaged in an unusually public dispute with the Obama administration over Iran, Mr. Netanyahu's man in Washington, Michael B. Oren, has been working rooms all over town. He has run up to Capitol Hill for damage control. He has spent hours with reporters making Israel's case against

As Chicago Strike Goes On, the Mayor Digs In

By MONICA DAVEY
 CHICAGO — As the president of the Chicago Teachers Union emerged from a meeting of her union delegates on Sunday night to announce that, no, school would not be starting up again and that, no, the delegates were not ready to sign off on what had seemed like a deal, Mayor Rahm Emanuel watched her on a television in City Hall. If the rest of the city was stunned to learn that the teachers' strike was not over, Mr. Emanuel appeared disappointed but relatively calm, those with him said, having already gained out just such a possibility with his aides. Not long after, he issued a statement that, in trademark tough-guy form, offered not even a passing whiff of conciliation: he accused the union of using children as pawns, and said he was going to court — an option he had checked on weeks ago, just in case, and one he carried out first thing Monday morning. While hundreds of thousands of Chicago children have begun a second week with no classes, Mr. Emanuel has placed himself firmly in the center of the standoff. He has been the loudest, pushiest voice for longer school days and tougher teacher evaluations, and he now finds himself as the target of fury in the picket lines around the city, where some teachers wear buttons showing a line drawn through Mr. Emanuel's face and others carry signs that demand, "What's Rahm With You?" The risks, politically, are enormous. Much depends on what happens Tuesday, when the union's delegates meet to again consider a deal their negotiators, including Karen Lewis, the union president, reached with negotiators from the Chicago Public Schools. But few have as much stake in what comes next — a quick reopening of schools by Wednesday or a far longer, pricier battle — as Mr. Emanuel. "This is the first issue that's gone out of control for Rahm," said Don Rose, a longtime political strategist in Chicago. "And it's the first issue where he's really coming up on the wrong side of the polls. He made this personal."

One Day, Growing Spare Parts Inside the Body

Limits Placed On Immigrants In Health Law

Young People Left Out of Overhaul Benefits

By ROBERT PEAR
 WASHINGTON — The White House has ruled that young immigrants who will be allowed to stay in the United States as part of a new federal policy will not be eligible for health insurance coverage under President Obama's health care overhaul. The decision — disclosed last month, to little notice — has infuriated many advocates for Hispanic Americans and immigrants. They say the restrictions are at odds with Mr. Obama's recent praise of the young immigrants. In June, the president announced that hundreds of thousands of illegal immigrants who came to the United States as children, attended school here and met other requirements would be allowed to remain in the country without fear of deportation. Immigrants granted such relief would ordinarily meet the definition of "lawfully present" residents, making them eligible for government subsidies to buy private insurance, a central part of the new health care law. But the administration issued a rule in late August that specifically excluded the young immigrants from the definition of "lawfully present."

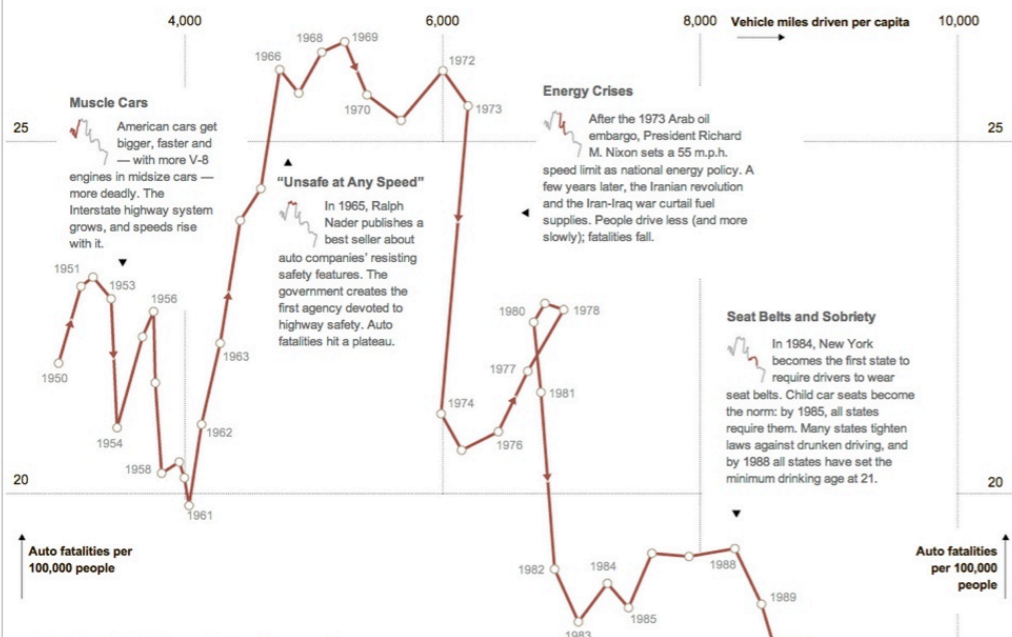
At the same time, in a letter to state health officials, the administration said that young immigrants granted a reprieve from deportation "shall not be eligible" for Medicaid or the Children's Health Insurance Program. Administration officials said they viewed the immigration initiative and health coverage as separate matters. Kathleen Sebelius, the secretary of health and human services, said in the Federal Register that the reasons offered for the immigration initiative "do not pertain to eligibility for Medicaid," the children's health program or federal subsidies for buying private health insurance. Nick Papas, a White House spokesman, said the deferred-de-

IN CAR COUNTRY, OBAMA TRUMPETS CHINA TRADE CASE

CITES UNFAIR EXPORTS

Announcement in Ohio Shows Political Clout of Incumbency

By MARK LANDLER
 CINCINNATI — In a vivid display of the powers of incumbency, President Obama on Monday filed a broad new trade case against China at the World Trade Organization, announcing the action in this industrial battleground where Mitt Romney has pressed his argument that the president has not done enough to protect American workers. Administration officials said that the W.T.O. case, which charges China with unfairly subsidizing exports of cars and auto parts, was months in the making. But the timing, eight weeks before the election and days after Mr. Romney had renewed his attacks on Mr. Obama for his trade policy toward China, gives it potent political resonance. On a day in which security and trade policy were inextricably mixed with the presidential campaign, the Chinese government, hours after word of the American action began circulating in Beijing, announced that it was filing its own W.T.O. case, alleging unfairness in how the United States calculates the penalty tariffs in anti-subsidy cases. The timing appeared to be coincidental. But an announcement earlier in the day that the United States and Japan had reached a major agreement to deploy a second advanced missile-defense radar on Japanese territory prompted immediate criticism in China. [Page A8.] Speaking to supporters in a state heavily dependent on the auto industry, Mr. Obama drew an explicit link between China's trade policies and the economic travails of voters in this closely contested region. By giving its exporters \$1 billion in illegal subsidies from 2009 to 2011, the ad-



Driving Safety, in Fits and Starts

AMERICANS drive a staggering number of miles — close to three trillion every year, according to the government. (That is half a light-year, or 120 million trips around the world.) And although traffic accidents remain a major public safety problem, the biggest killer of people ages 5 to 34, vehicle travel is far safer than it was a few decades ago.

Several factors appear to account for the sharp decline in fatalities. Technology (like anti-lock brakes and air bags) and road behavior (like wearing seat belts and driving sober) have both improved greatly since 1950. Americans almost always drive more each year than the previous one — at least until recently, when the recession curtailed road habits. And the auto fatality rate has been decreasing since the 1960s, when cars with massive engines carried their unbuckled passengers on primarily two-lane roads.

The safety data is usually charted as deaths per miles traveled. But what happens when the metrics are teased apart, and familiar data is charted in an unfamiliar way? Plotting the two most important variables against each other — miles traveled versus deaths per 100,000 population — yields a pattern that looks like a plateau followed by a steep drop. It evokes the theory of punctuated equilibrium, proposed by the paleontologists Stephen Jay Gould and Niles Eldredge, which suggests that instead of continuous gradual evolution, change occurs abruptly after periods of virtual standstill. “You see fatalities drop after a breakthrough in new technologies or behaviors, and then plateau until the next one,” said David L. Strickland, administrator of the National Highway Traffic Safety Administration. “It takes time for new safety technologies to work their way into the whole fleet of cars on the road.”

By HANNAH FAIRFIELD | Send Feedback
Sources: National Highway Traffic Safety Administration; Federal Highway Administration

A chart with the Visuals article on Tuesday about a sharp decline in the rate of highway fatalities, misstated the year Ralph Nader’s book “Unsafe at Any Speed” was published. The book came out in 1965, not in 1966.



Visuals | Hannah Fairfield Driving Safety, in Fits and Starts

AMERICANS drive a staggering number of miles — close to three trillion every year, according to the government. (That is half a light-year, or 120 million trips around the world.) And although traffic accidents remain a major public safety problem, the biggest killer of people ages 5 to 34, vehicle travel is far safer than it was a few decades ago.

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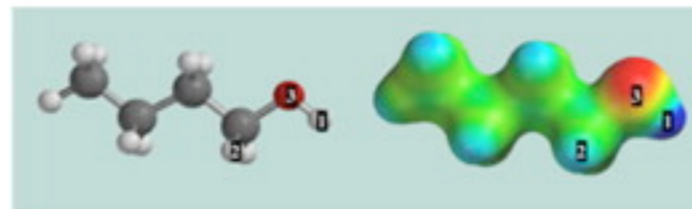
(The New York Times, 2012)



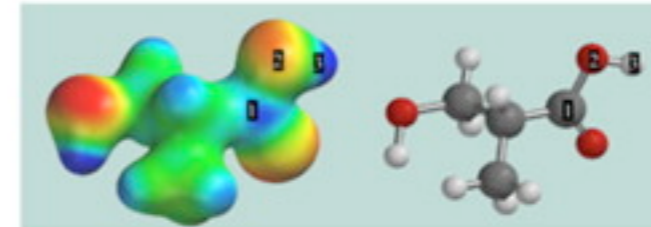
BACKGROUND KNOWLEDGE

(Hinze et al, 2013)

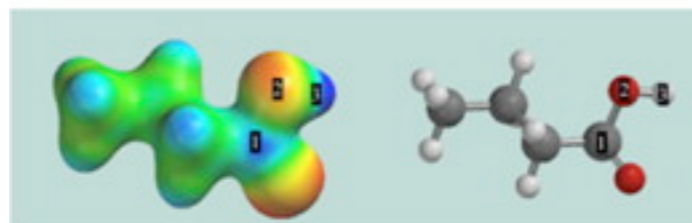
Which atom in the molecule has the greatest positive charge?



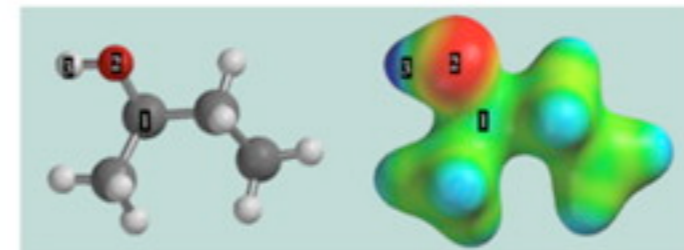
Which atom has the highest electron density?



Where would a proton (H^+) attach in this molecule?



Where would hydroxide (OH^-) attack this molecule?

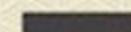


7. 'ONE MILLIMETER EQUALS SIX THOUSAND MEN'
THE THEORETICAL SIGNIFICANCE
OF MINARD'S MAP

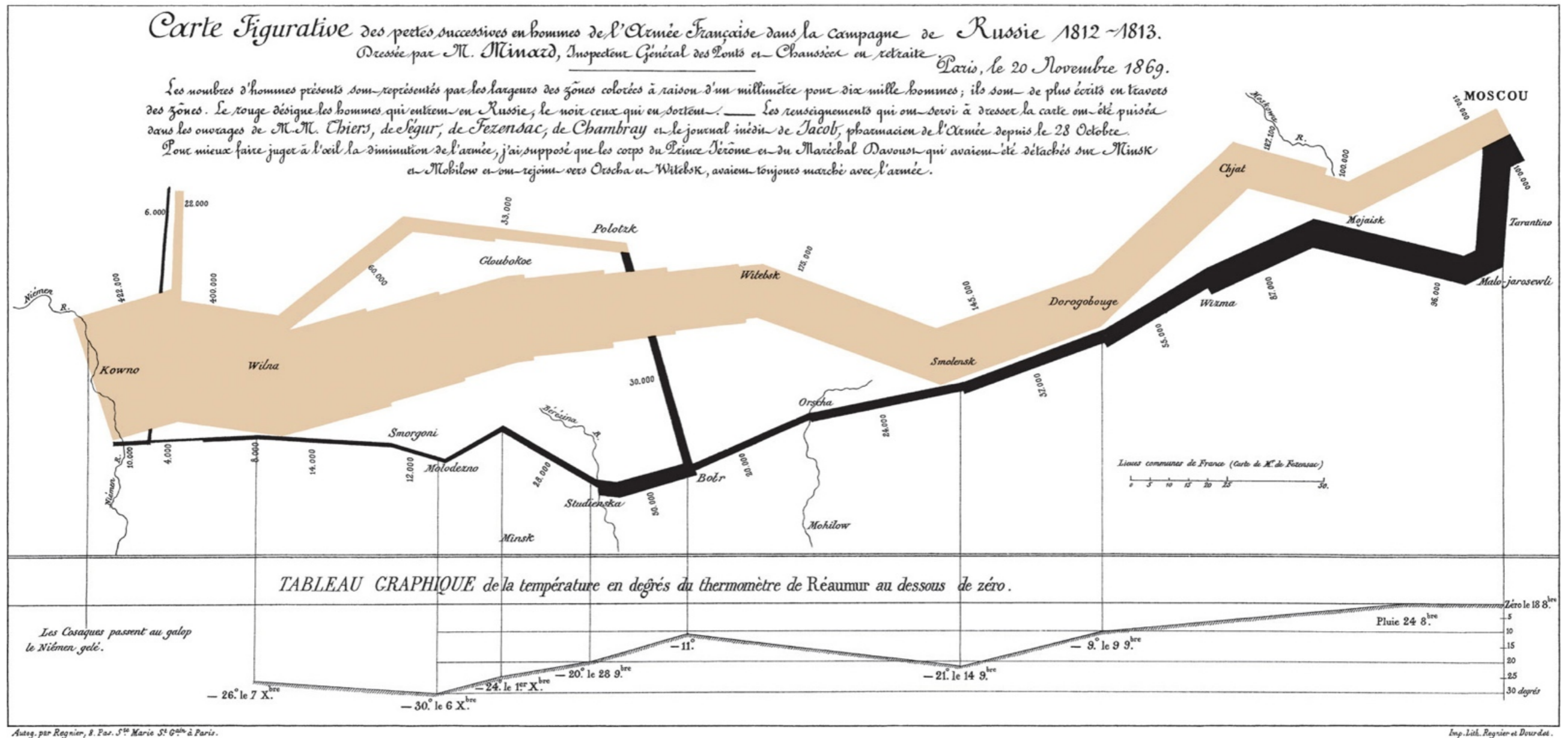
JACQUES BERTIN

Semiology of Graphics

diagrams
networks
maps



MEDIATED – NOT “IMMEDIATE”

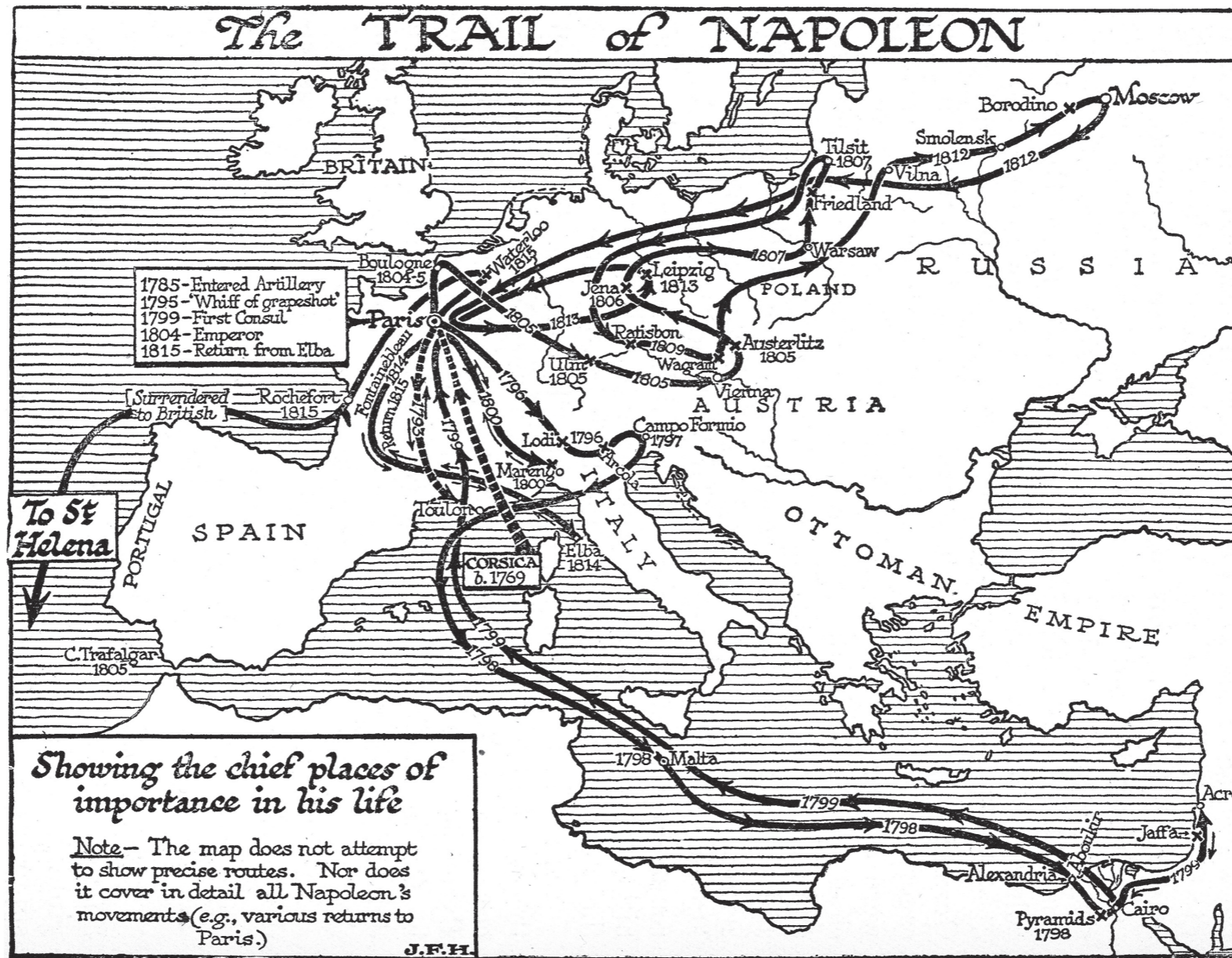


CHARLES MINARD: NAPOLEON'S RUSSIAN CAMPAIGN 1812-1813

(Tufte, 2006)



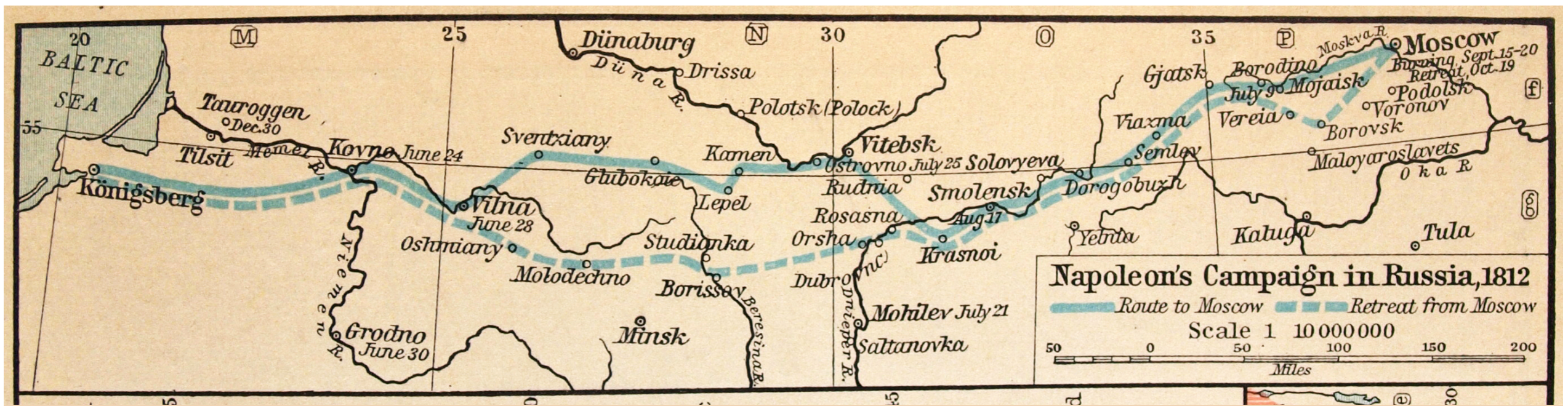
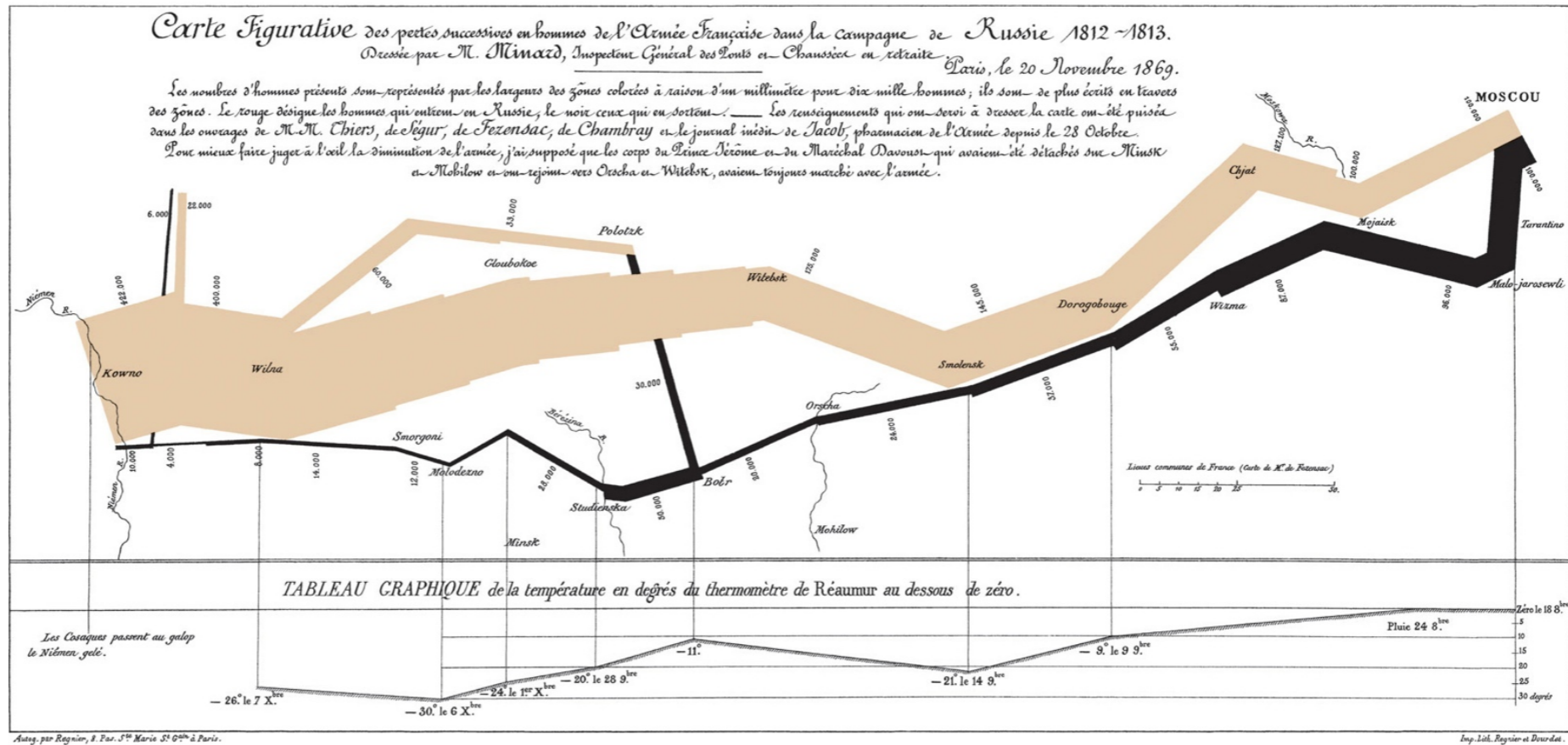




The Trail of Napoleon, 912

H. G. Wells, The Outline of History (New York, NY: The Macmillan Company, 1921)
 Downloaded from Maps ETC, on the web at <http://etc.usf.edu/maps> [map #03680]

ABSTRACT LINE – CONCRETE STORY

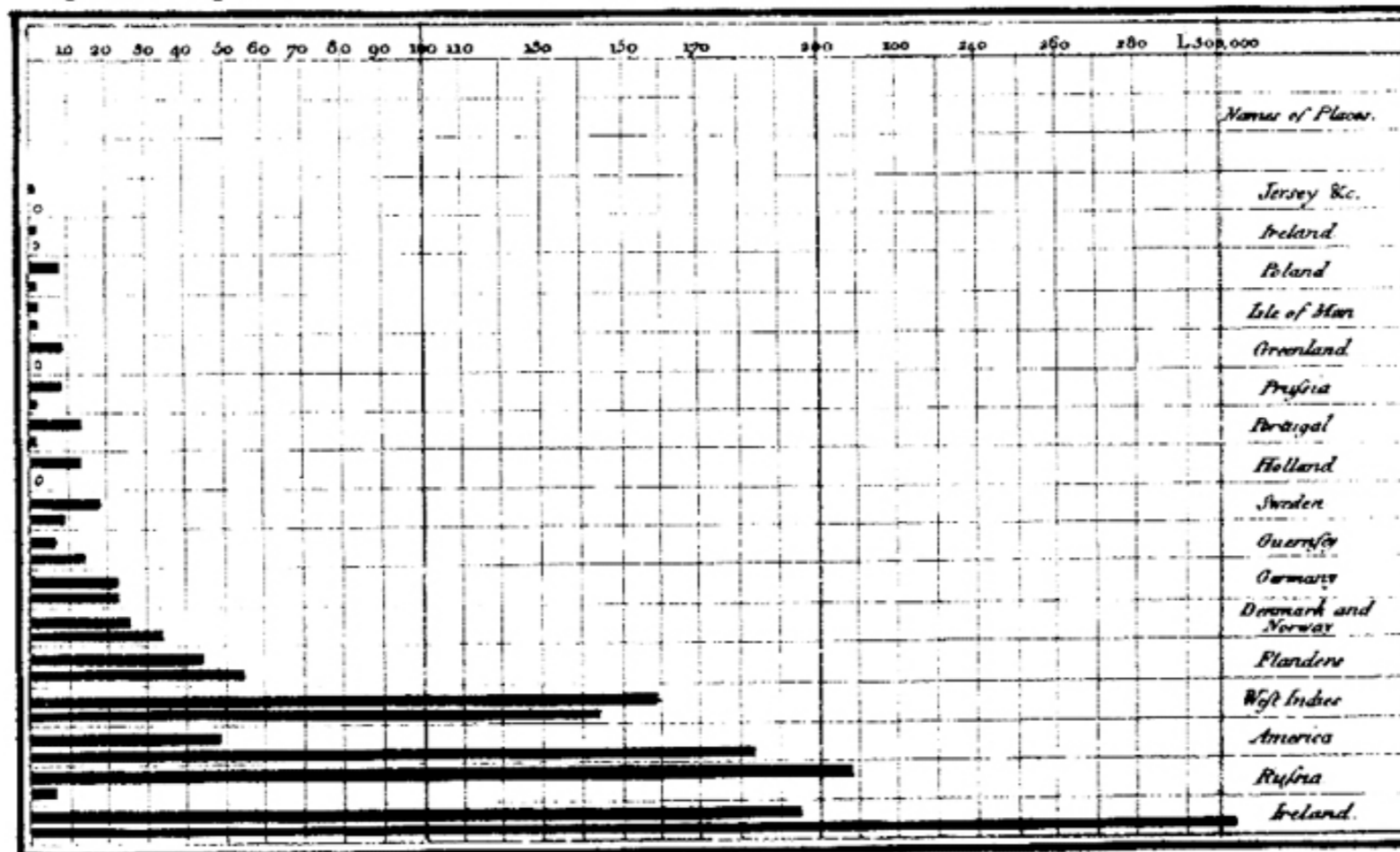


WILLIAM PLAYFAIR

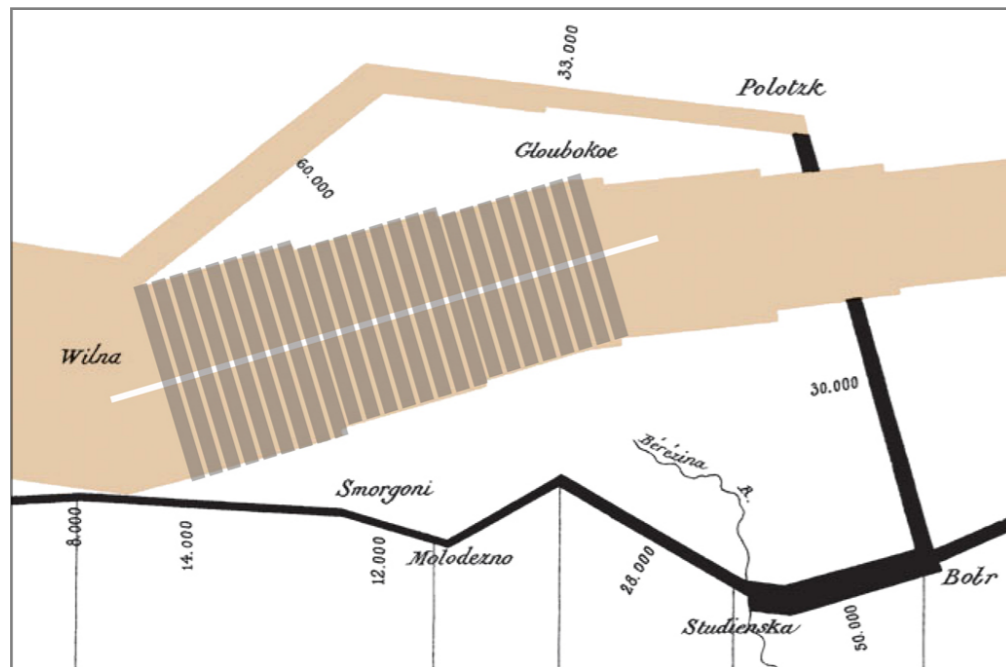
Commercial and Political Atlas, 1786

Minard's line = Playfair's bar chart

Exports and Imports of SCOTLAND to and from different parts for one Year from Christmas 1780 to Christmas 1781.



The Upright divisions are Ten Thousand Pounds each. The Black Lines are Exports the Ribbed lines Imports.
 Published in the Atlas above June 7th 1786 by W^m Playfair
 Made comp^d by J. Sturges. London.



=



Line (bar chart) is:
 coded
 abstract
 not immediate
 not natural
 not instantaneous

Horror of war is:
 implicit
 concrete
 inferred
 undepicted & unspoken
 based on prior knowledge

8. THE TWO NEW YORK SUBWAY MAPS

NEW YORK SUBWAY MAP 1972 (1978)



Massimo Vignelli

NEW YORK SUBWAY MAP 1979 (2013)



Michael Hertz

MISSING in 1972 map: the GREEN in Central Park



MISSING in 1972 map: JFK International Airport



MISSING in 1972 map: Roosevelt Island in the East River



MISSING in 1972 map: the Statue of Liberty

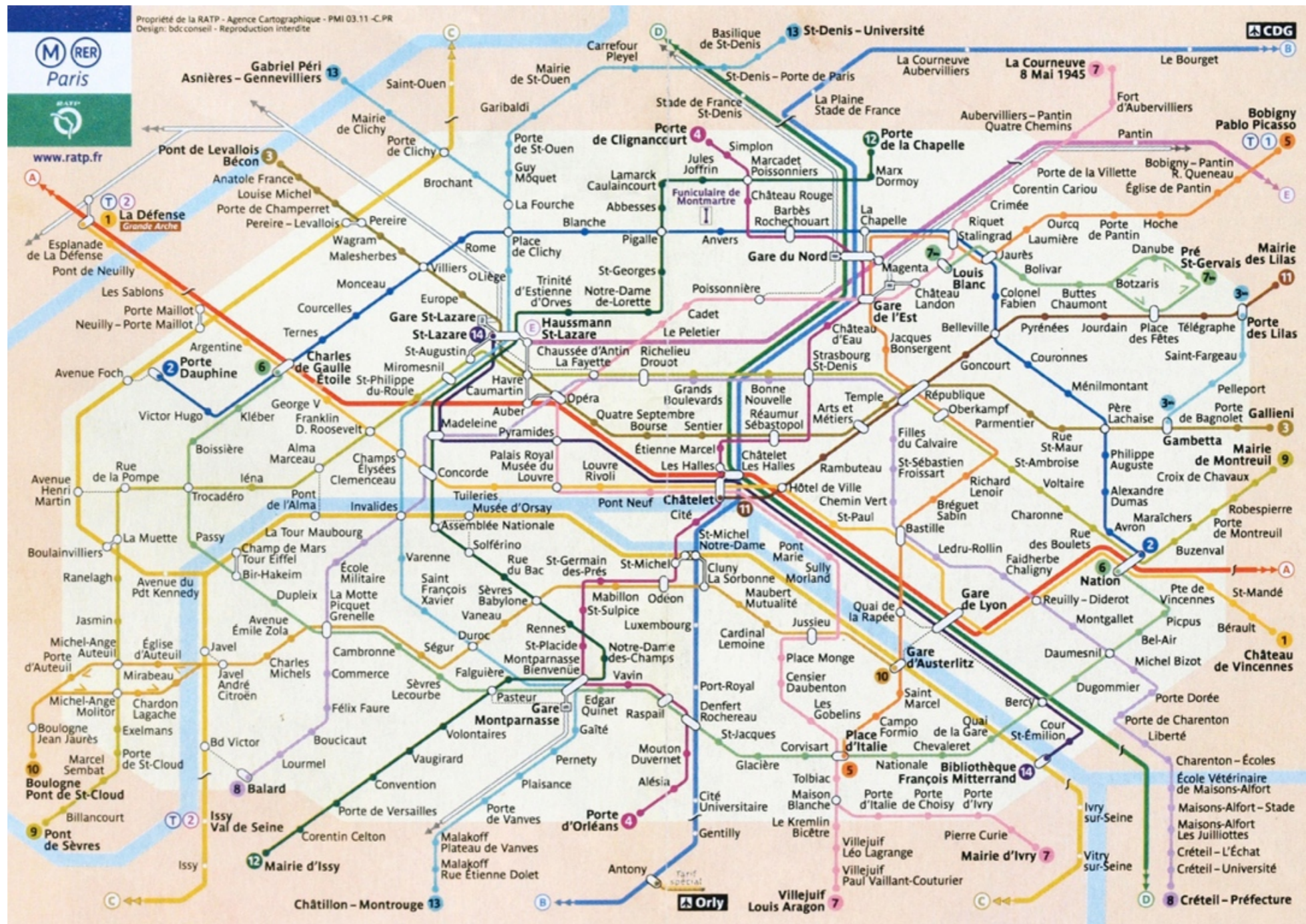






PARIS

2005



LONDON 2007 (1931)



CONVENTIONS & EXPECTATIONS

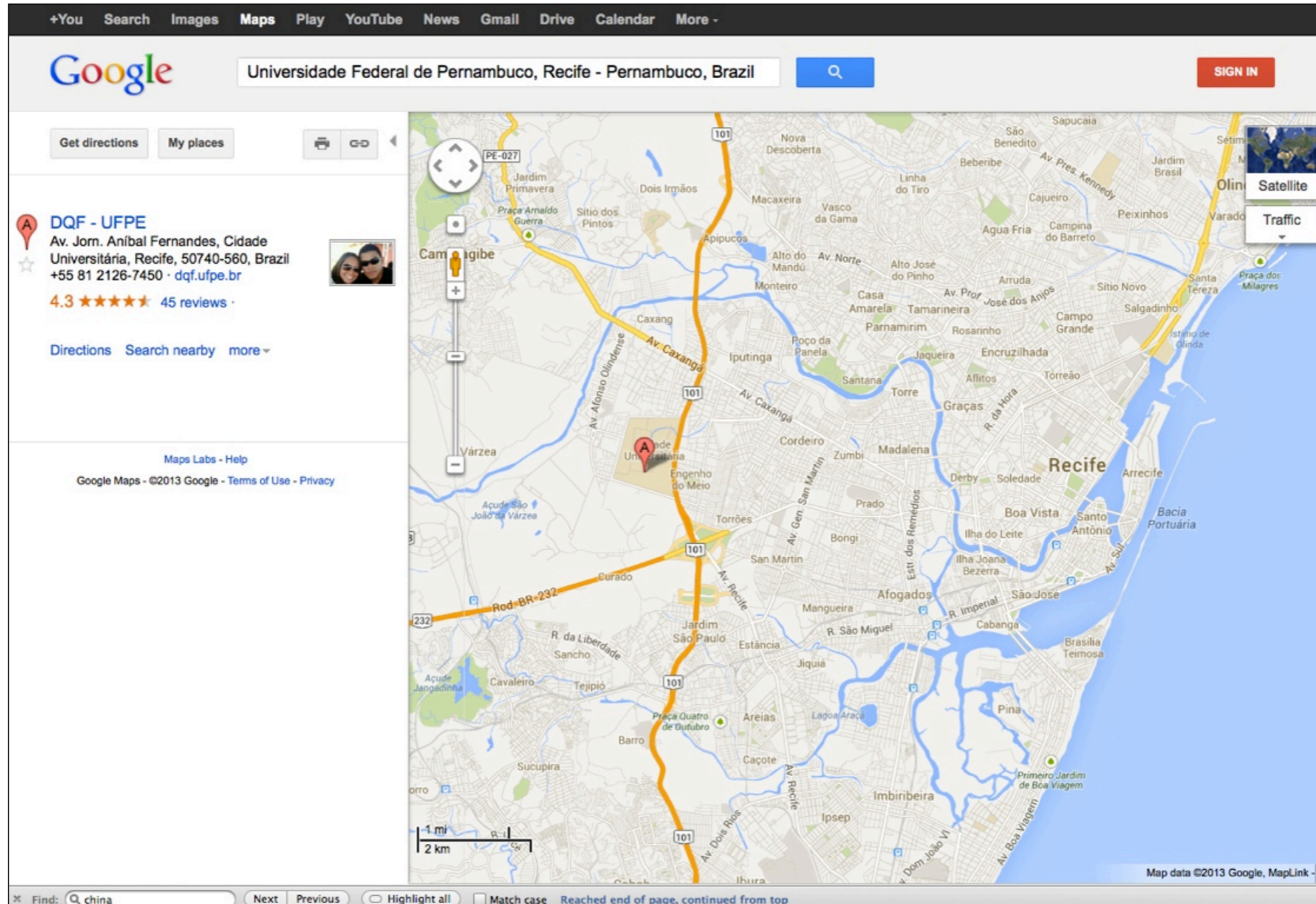
CONVENTIONS



Plan of fields and watercourses from Nippur, Mesopotamia (ca. 1500 BCE).

CONVENTIONS

TOP: NORTH



Google maps, 2013.

CONVENTIONS

TOP: NORTH

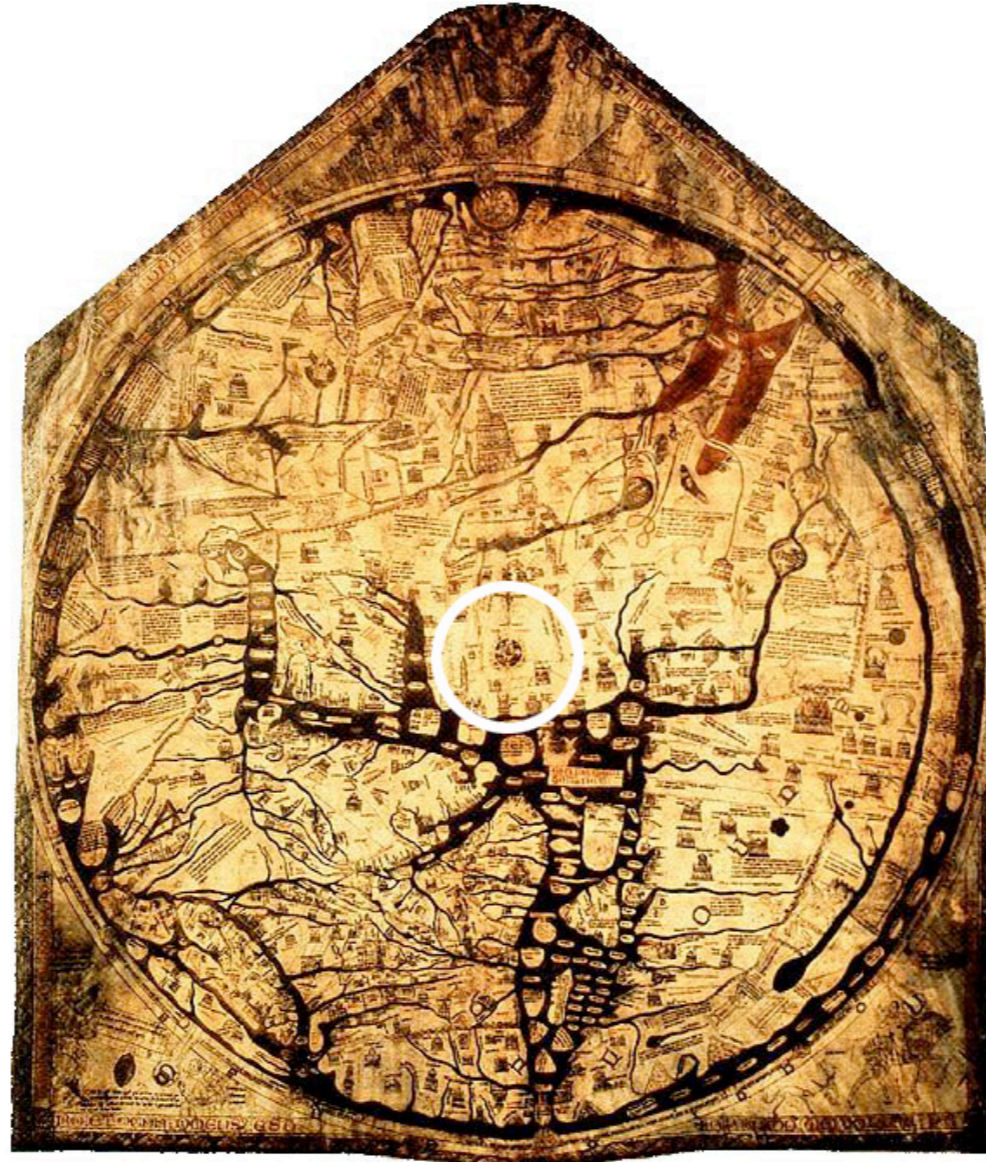


Historical atlas, 1929.

CONVENTIONS

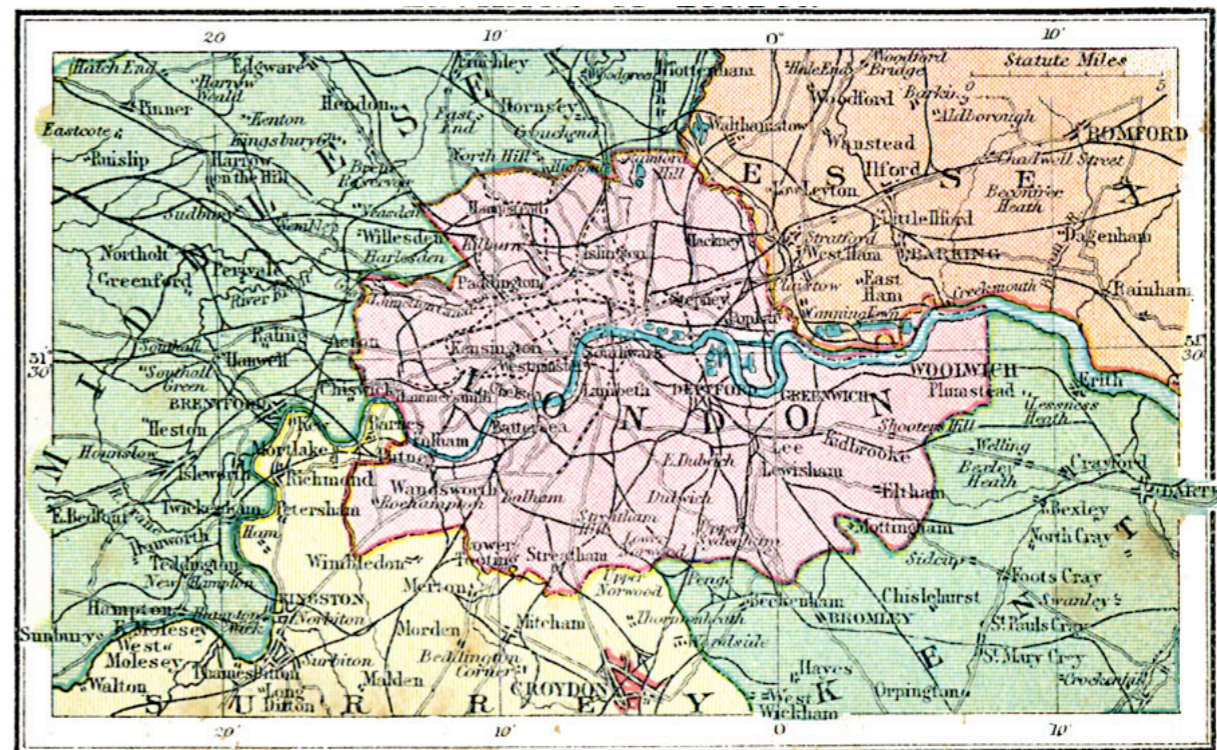
orientation = pointed to the east

TOP: EAST



Hereford Mappa Mundi, ca. 1300. Jerusalem at center, East toward top, Europe at bottom left and Africa on the right.

PARIS & LONDON: DIFFERENT TOPOLOGY (River cities)



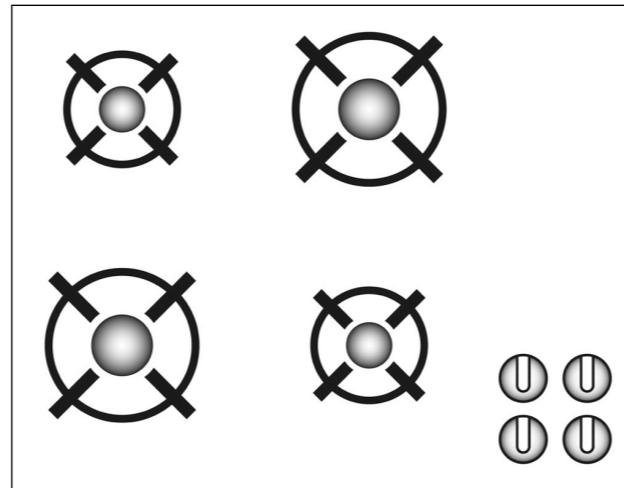
IN 1972 NEW YORK MAP: WATER IS GRAY AND LAND IS WHITE



2012

ISOMORPHISM

“NATURAL MAPPING”



(Norman, 1988)

Saul Steinberg



YOU ARE HERE.

9. CONCLUSION

FORM

CONTENT

CONVENTION

SKILLS & CRAFTS

SPECIFIC

METHODS

THEORIES

GENERAL

PRINCIPLES

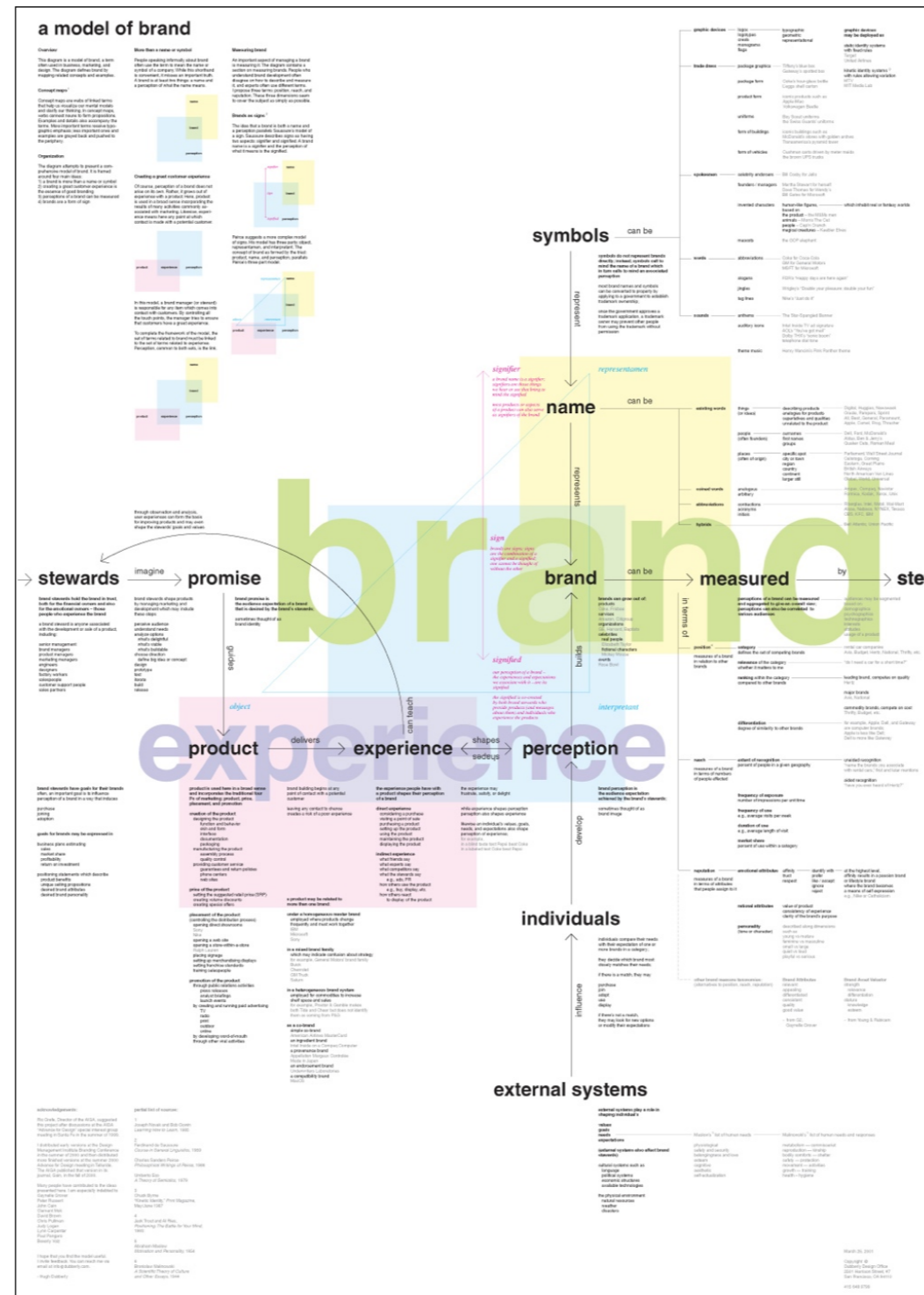
COGNITION

GEOGRAPHIC MAP IS COMPLEX, RELATIONSHIP IS CONCRETE



CONCEPT MAP

IS COMPLEX, RELATIONSHIP IS ABSTRACT



Dubberly Design Office

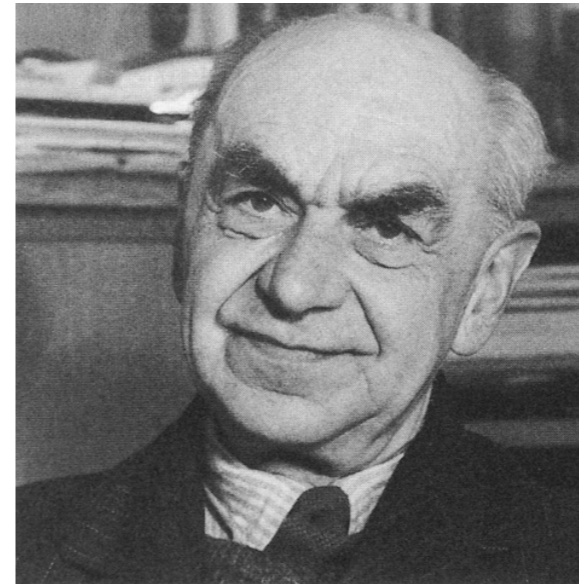
HISTORICISM & COGNITION



HERMANN EBBINGHAUS
ON MEMORY, 1885



FERDINAND DE SAUSSURE
LINGUISTICS, 1906-11



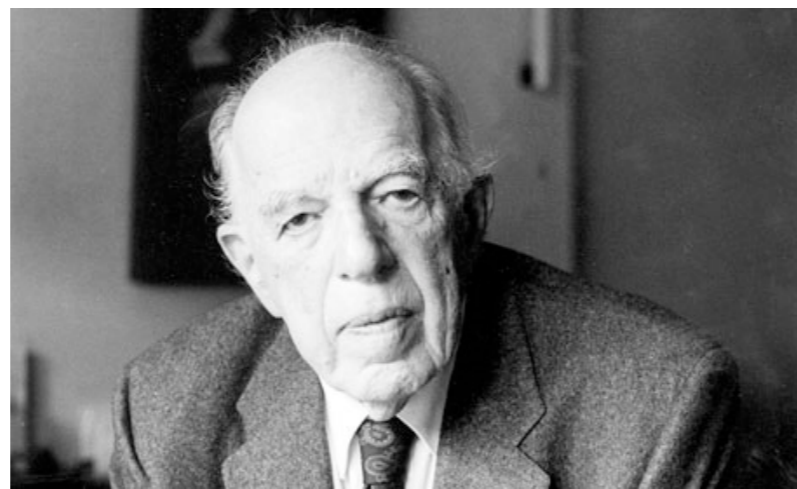
FREDERIC BARTLETT
ON REMEMBERING, 1932



GEORGE A. MILLER
MAGICAL NUMBER SEVEN, 1956



ALAN D. BADDELEY
WORKING MEMORY, 1974



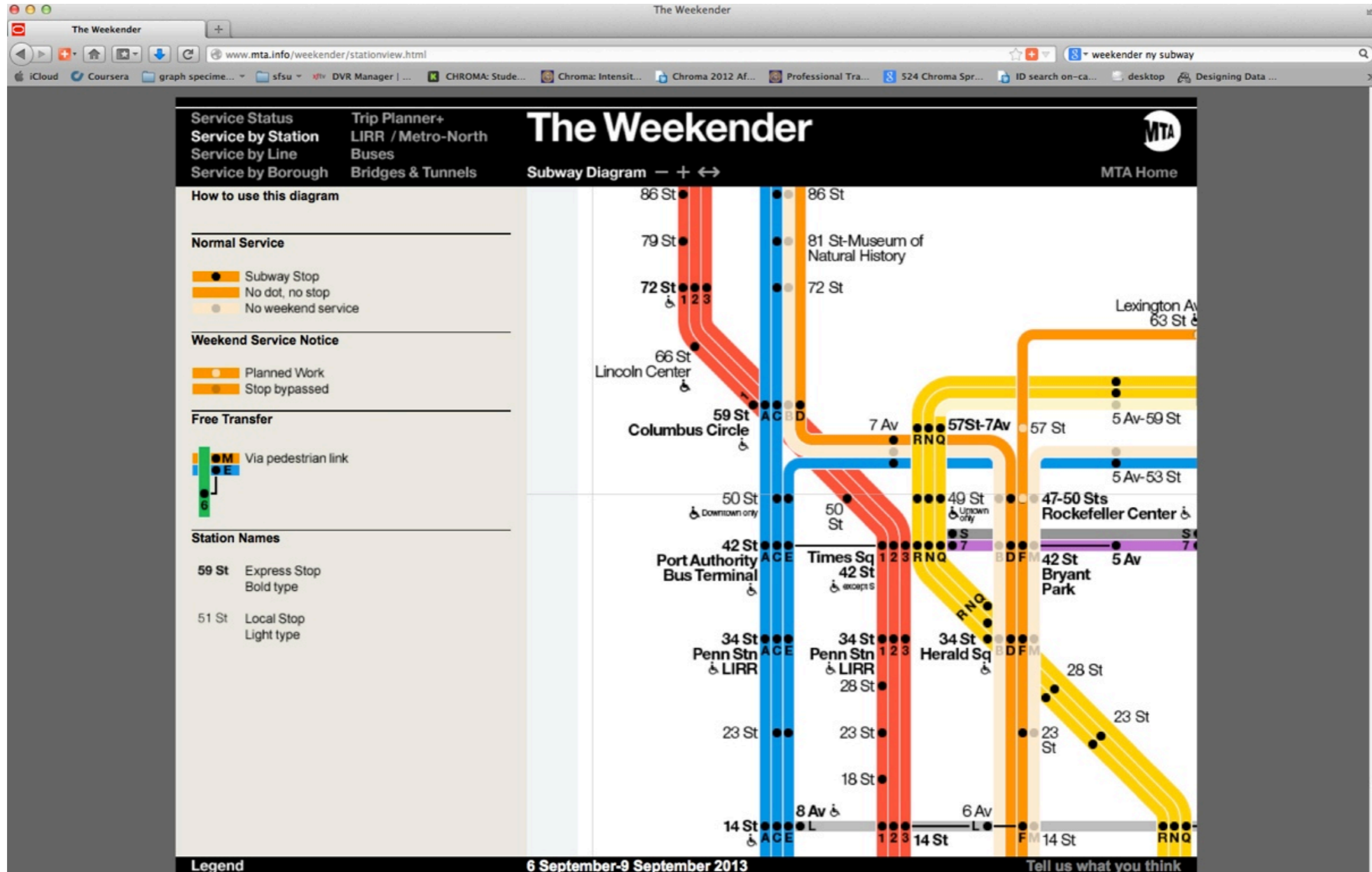
ERNST GOMBRICH
THE IMAGE AND THE EYE, 1982



DANIEL WILLINGHAM
K-12 EDUCATION, 2012

HISTORICISM & CONVENTION

The 1972 map is now an interactive, service outage map, 2011.

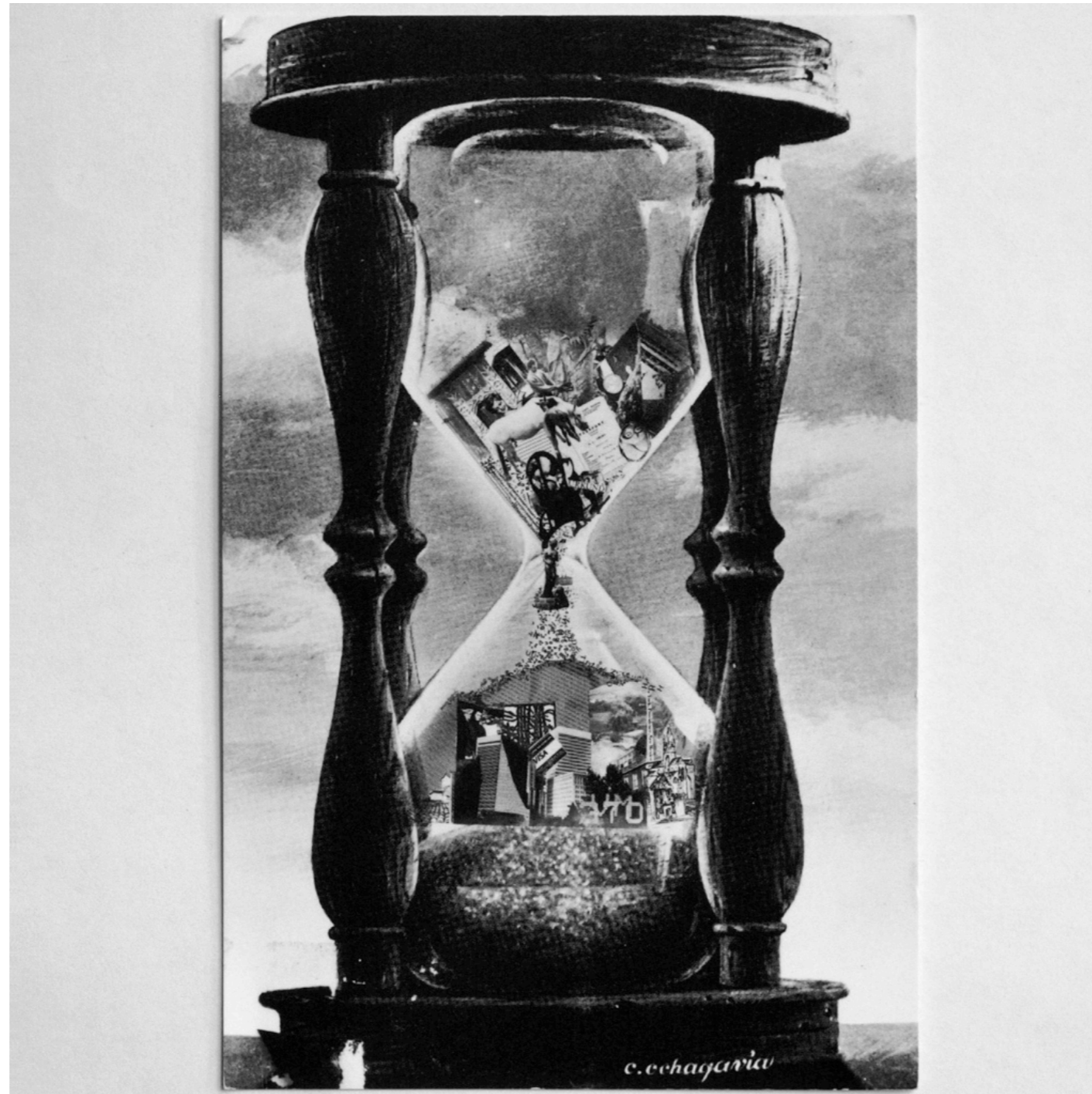


Massimo Vignelli

GRAPHIC DESIGN IS NOT A TIMELESS ART



GRAPHIC DESIGN IS AN ARTIFACT OF ITS OWN TIME AND PLACE



Mihai Nadin, *TIME*, 1984.

LINKS

PINO TROGU — SAN FRANCISCO STATE UNIVERSITY, USA

THE DOUBLE CONSTRAINTS OF **CONVENTION** AND **COGNITION** IN SUCCESSFUL GRAPHIC DESIGN

SPECIAL THANKS:

PROF. E.D. HIRSCH, JR. – UNIVERSITY OF VIRGINIA, USA

PDF of slides, handout, and references

trogu.com/Documents/conference/2013_CIDI_recife_brazil

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[go to first slide](#)