
UNIFIED DESIGN PRINCIPLES

MICHEL BEAUDOUIN-LAFON

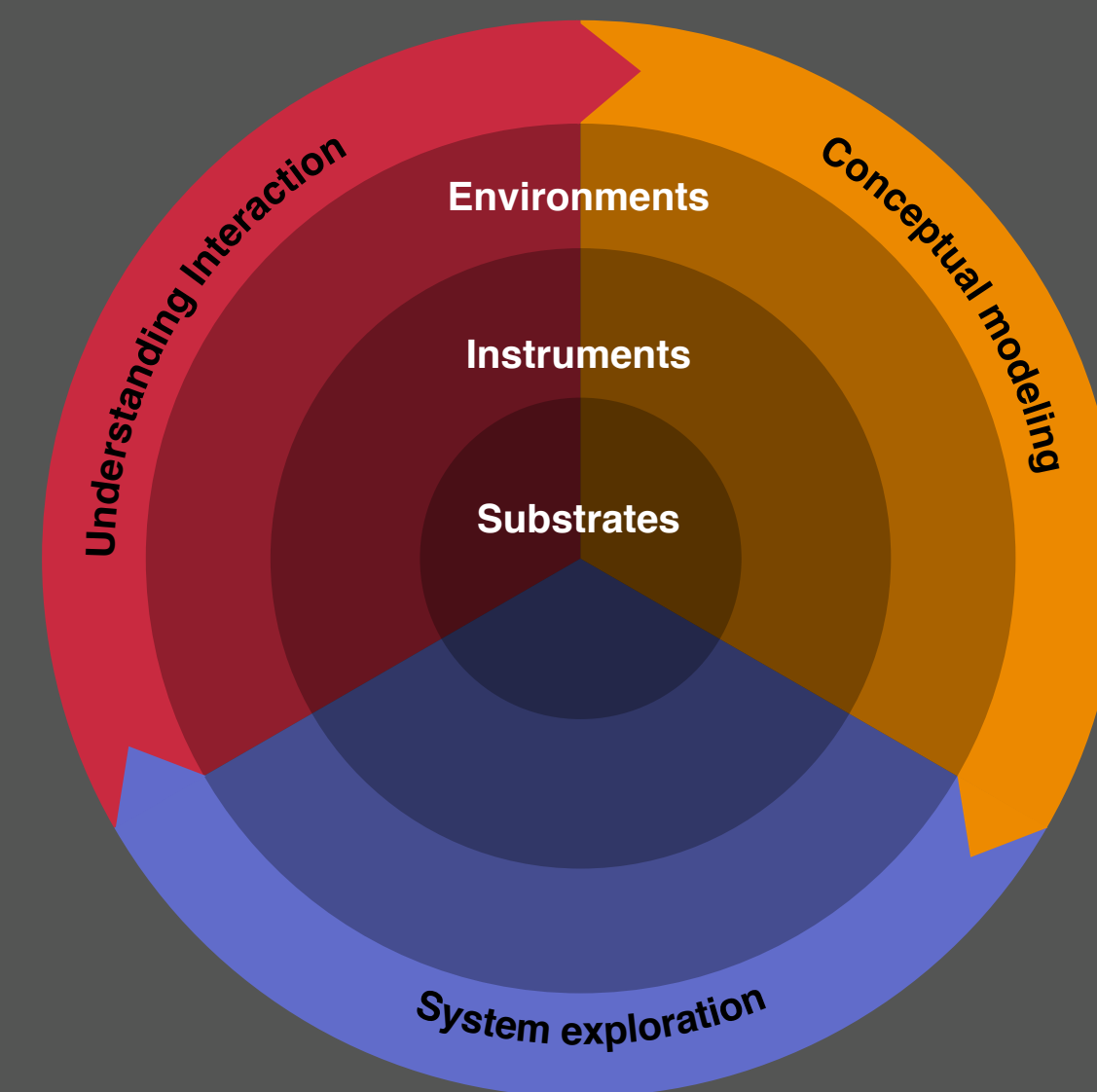


—
TO SUPPORT
DIVERSITY

WE NEED
UNIFICATION



ONE: ONE IS NOT ENOUGH UNIFIED PRINCIPLES OF INTERACTION



HOW TO IDENTIFY
UNIFYING PRINCIPLES?

HOW DO WE
INTERACT
IN THE
PHYSICAL
WORLD?

LANGUAGE

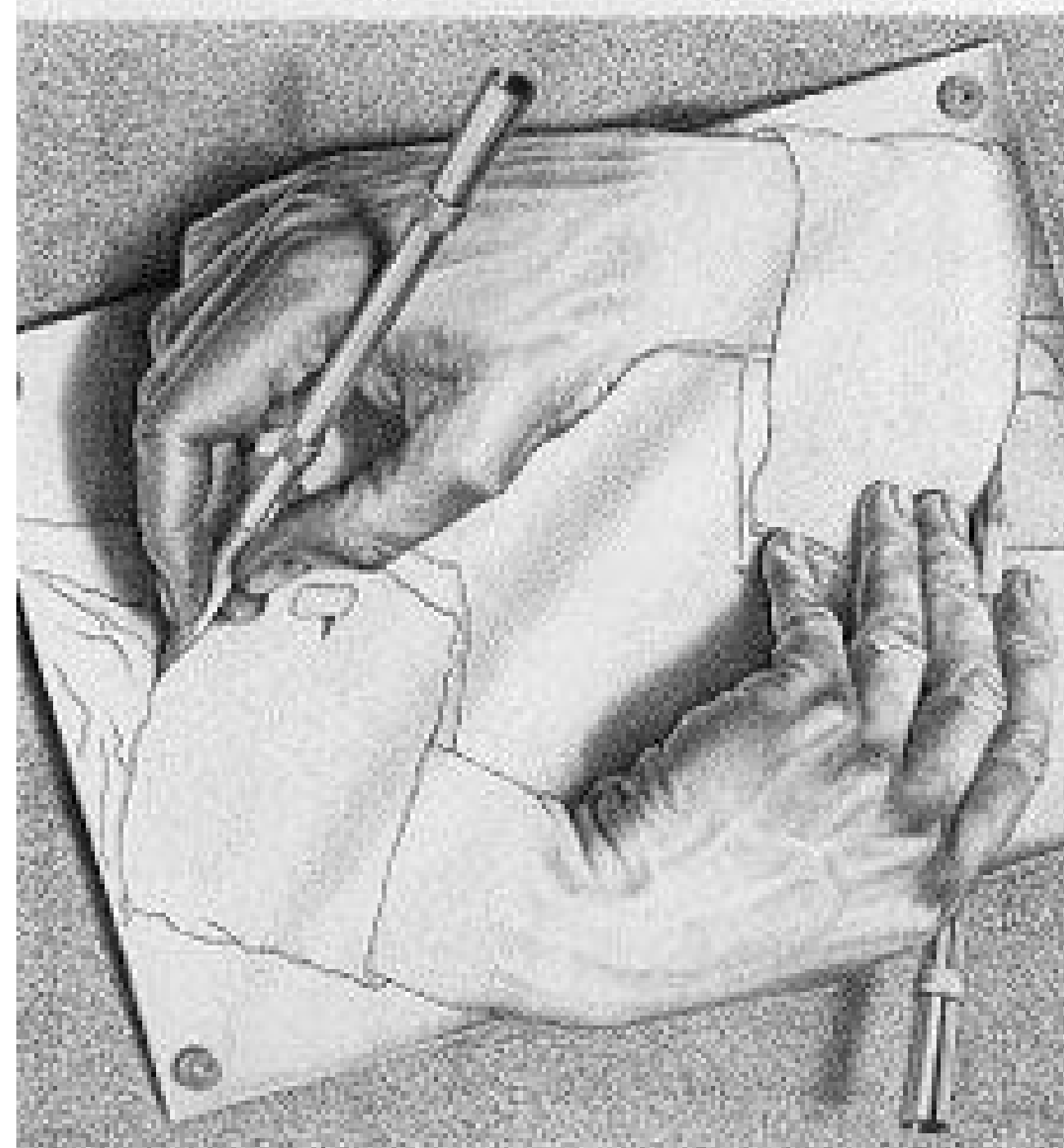


—
HOW DO WE
INTERACT
IN THE
PHYSICAL
WORLD?

PHYSICAL ACTION



—
PHYSICAL
ACTION IS
OFTEN
MEDIATED
BY TOOLS



THE POWER OF TOOLS





—
THE
PHYSICAL
WORLD IS
FLEXIBLE

A PENCIL



A MUG



—
THE
PHYSICAL
WORLD IS
FLEXIBLE

A RULER!



A PAPER WEIGHT!





KSRB 0.5-8.1.1. Providing fly ash sand mortar of mix 1:1.5:3 (1 cement : 1.5 fly ash : 3 sand) including cost of all materials, (a) charges HOM Of machinery complete as per specifications. KSRB 4.2.6: Providing and laying in position reinforced cement concrete of design mix M10 with OPC cement @ 220Kgs, with 40mm and down size graded granite metal coarse aggregates 0.892 cum and fine aggregates @ 0.465 cum, machine mixed concrete laid in layers not exceeding 15 cms thick vibrated for all works in foundation plinth and ground floor level for retaining walls return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars. Posts, struts, buttresses, string or lacing courses, piers, abutments, coping, bed blocks, anchor backs , plain window cills, fillets etc., including cost of all materials. (a) charges HOM of machinery, curing, complete as per specifications.

Specifications No. KBS 4.1, 4.6 KSRB 0.5-8.1.1. Providing fly ash sand mortar of mix 1:1.5:3 (1 cement : 1.5 fly ash : 3 sand) including cost of all materials, (a) charges HOM Of machinery complete as per specifications. KSRB 4.2.6: Providing and laying in position reinforced cement concrete of design mix M10 with OPC cement @ 220Kgs, with 40mm and down size graded granite metal coarse aggregates 0.892 cum and fine aggregates @ 0.465 cum, machine mixed concrete laid in layers not exceeding 15 cms thick vibrated for all works in foundation plinth and ground floor level for retaining walls return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars. Posts, struts, buttresses, string or lacing courses, piers, abutments, coping, bed blocks, anchor backs , plain window cills, fillets etc., including cost of all materials. (a) charges HOM of machinery, curing, complete as per specifications. Specifications No. KBS 4.1, 4.6

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24 Diciembre XXIV.

20 noviembre 1935
5 diciembre 1935
6 Diciembre XXIV.

lengua que hace su cama cuando ya no se le importa un pito que el rocío que le paga la jaca

haciendo su error con pollo en la sartén le diga la verdura y la saque haciendo y organiza en el amor la noche con sus cuantos de ricas

pero si al rededor de la línea de fuego más de lo que parece ofendido y tan pálido

de ver como jamón no huele y queso se estreñece

el pájaro que canta retuerce la cortina no se para de pelear

que abanica su cara y la corta en la nieve

que cuece sus jointas de todos los colores

en la flauta la copa que cantándole

como si cantar pudiese la calavera que le muerde la mano

y se la lleva suspendida por el anillo envuelto en el ruido de las alas de las gacetas llenas de cerampos

que la nota que sostiene el violín no deja respirar apretándole el cuello con sus tenaces

roca la punalada que tiene al tron que sale al primero del pecho del que hincha en el globo atado con longanizas estreñeñas

la razón parentoria del azul tan gracioso que sentado en su silla curula y arreglándose las faldas a cada momentito

cuando pasa la flecha tan veloz le echa pimienta y sale saltando y lee el porvenir en el ojo del toro

puchero roto cuchara hecha de boj y reloj de pulsera

lengua

ante el fuego

respuesta sobre la respuesta

si el tiempo es majeta y hue frío

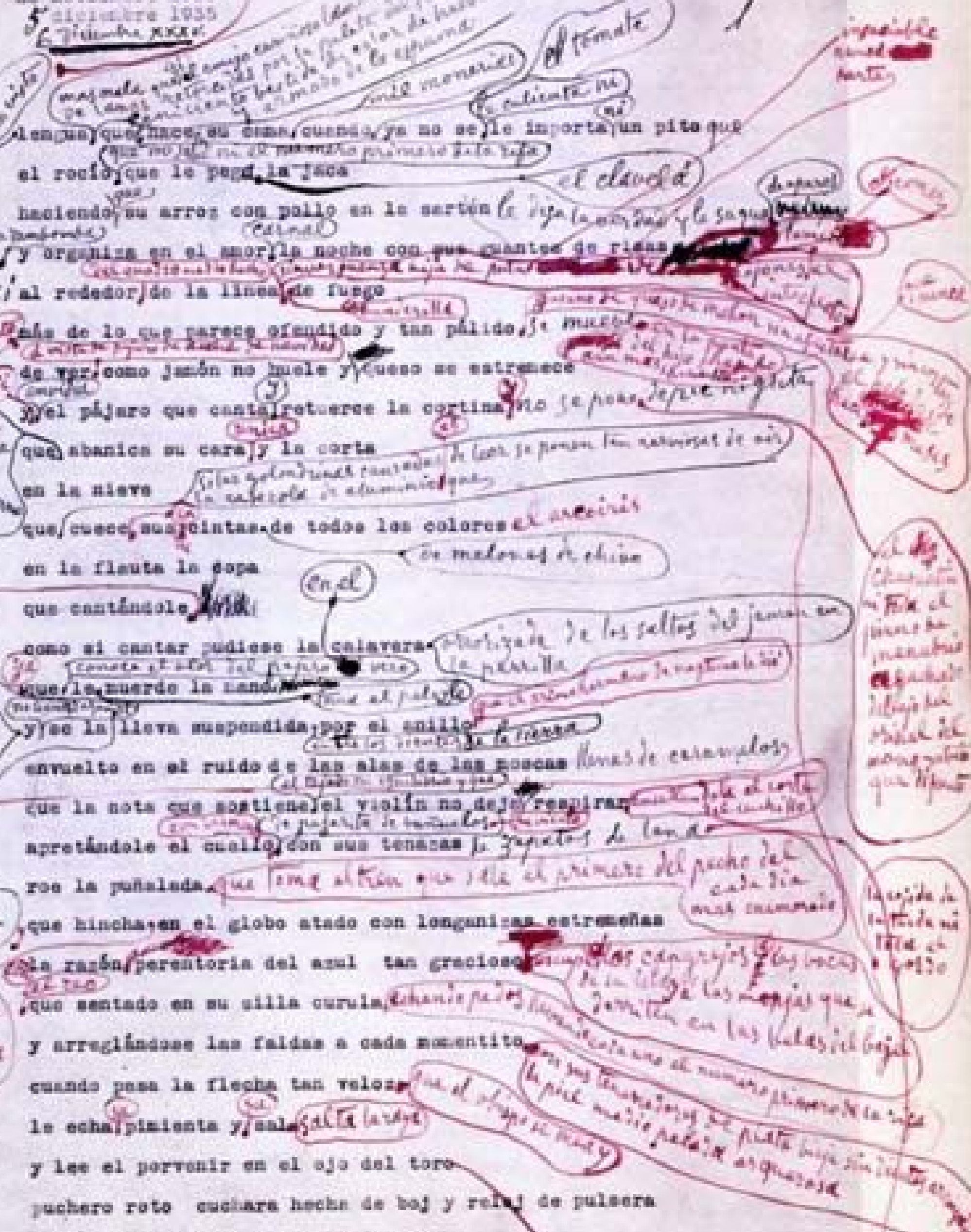
debería ser la noche cuando canta el gallo

si la noche es fría

la pajarita se le va a la que

que

que







Sheet Insert Page Layout Formulas Data Review View

Tables: PivotTable, Table

Charts: Column, Line, Pie, Bar, Area, XY (Scatter), Other Charts

Illustrations: Picture, IGX Graphic, Shapes

Links: Hyperlink

Text: Text Box, Header & Footer, WordArt, Signature Line, Object, Symbol

H18 fx

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3		Total Sales by Store				Total Sales by Region							
4		Store	Sales		Region	Sales							
5		Store 1	\$ 313,765		West	✓ \$ 1,718,258							
6		Store 2	\$ 107,160		South	✗ \$ 534,389							
7		Store 3	\$ 351,751		Midwest	⚠ \$ 1,009,268							
8		Store 4	\$ 131,047		East	✗ \$ 900,431							
9		Store 5	\$ 252,136		Total	\$ 4,162,346							
10		Store 6	\$ 167,462										
11		Store 7	\$ 210,073										
12		Store 8	\$ 308,092		Total Sales by Category								
13		Store 9	\$ 97,492		Category	Sales							
14		Store 10	\$ 393,484		Automotive	\$ 86,285							
15		Store 11	\$ 396,891		Gardening	\$ 52,048							
16		Store 12	\$ 151,168		Electronics	\$ 83,026							
17		Store 13	\$ 251,390		Jewelry	\$ 93,035							
18		Store 14	\$ 392,776		Sporting	\$ 50,016							



BREATHING CITY

Manhattan's at **Work** and **Home** population by hour

12
am



Joey Cherdarchuk | @cherdarchuk | www.darkhorseanalytics.com/blog
Data: US Census Bureau, New York City, US Bureau of Labour Statistics

Game Log:
 Cursed Zombie was hit for 278 (+28) damage.
 Cursed Zombie was hit for 278 (+28) damage.
 Cursed Zombie was hit for 278 (+28) damage.
 Cursed Zombie has died!
 Cary has earned 765 (+15) fame!
 Cary has harvested 2 blood from the fallen Cursed Zombie!
 Cary has achieved level 12!

Title:	Duelist	Name:	Vampire
Name:	Cary	Level:	13
Level:	12	Health:	407 / 407
Health:	370 / 370	Energy:	49 / 49
Fame:	17230 / 18910	Abilities:	Life Leech Flaming Corpse None
Attack:	21	Melee:	Bite
Defense:	28	Ranged:	None
Accuracy:	21	Condition:	None
Luck:	34		
Available Points:	2		
Melee:	Shovel of Experience		
Ranged:	Pistol for Dentistry		
Condition:	None		

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THIS IS NOT A PENCIL

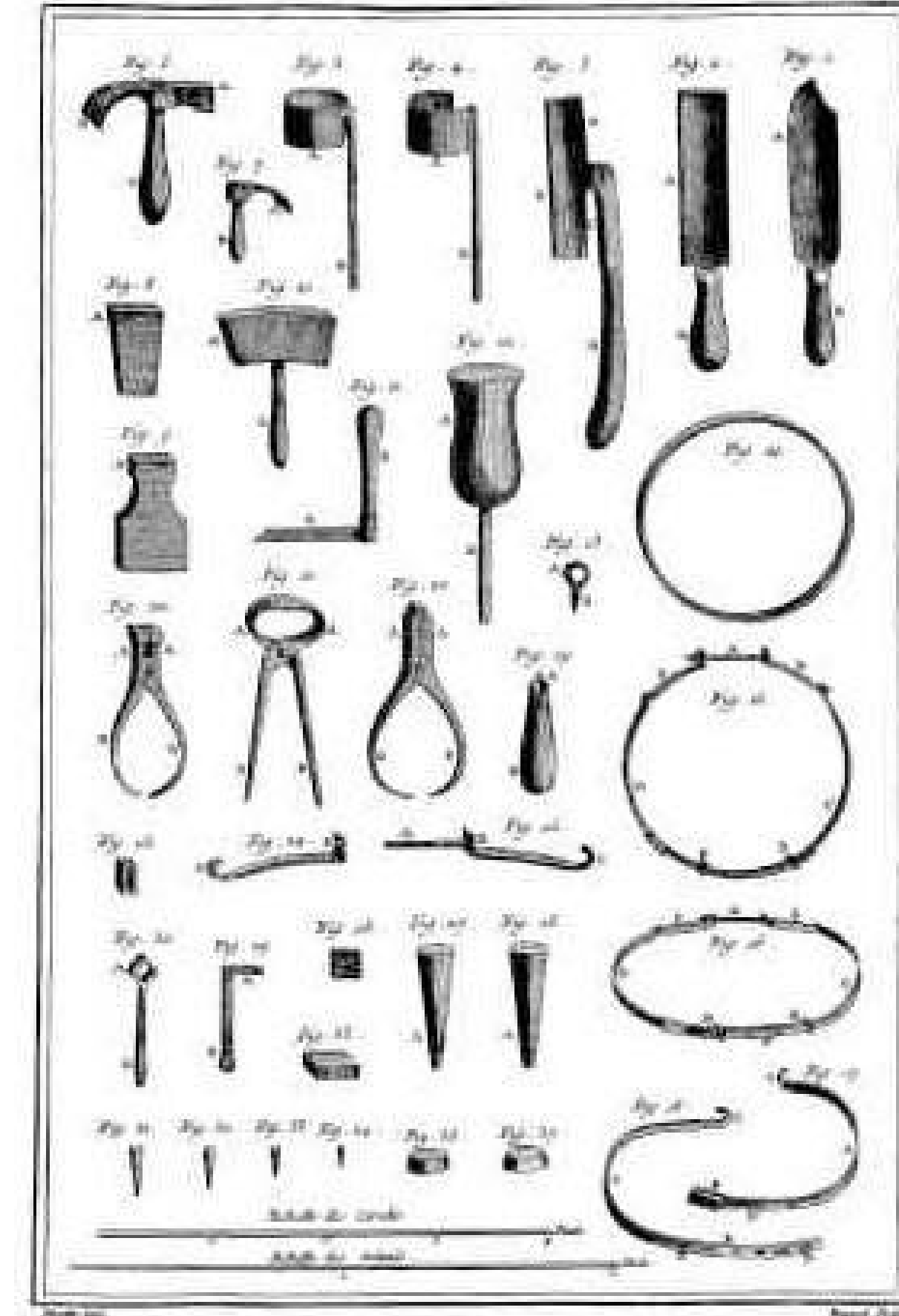
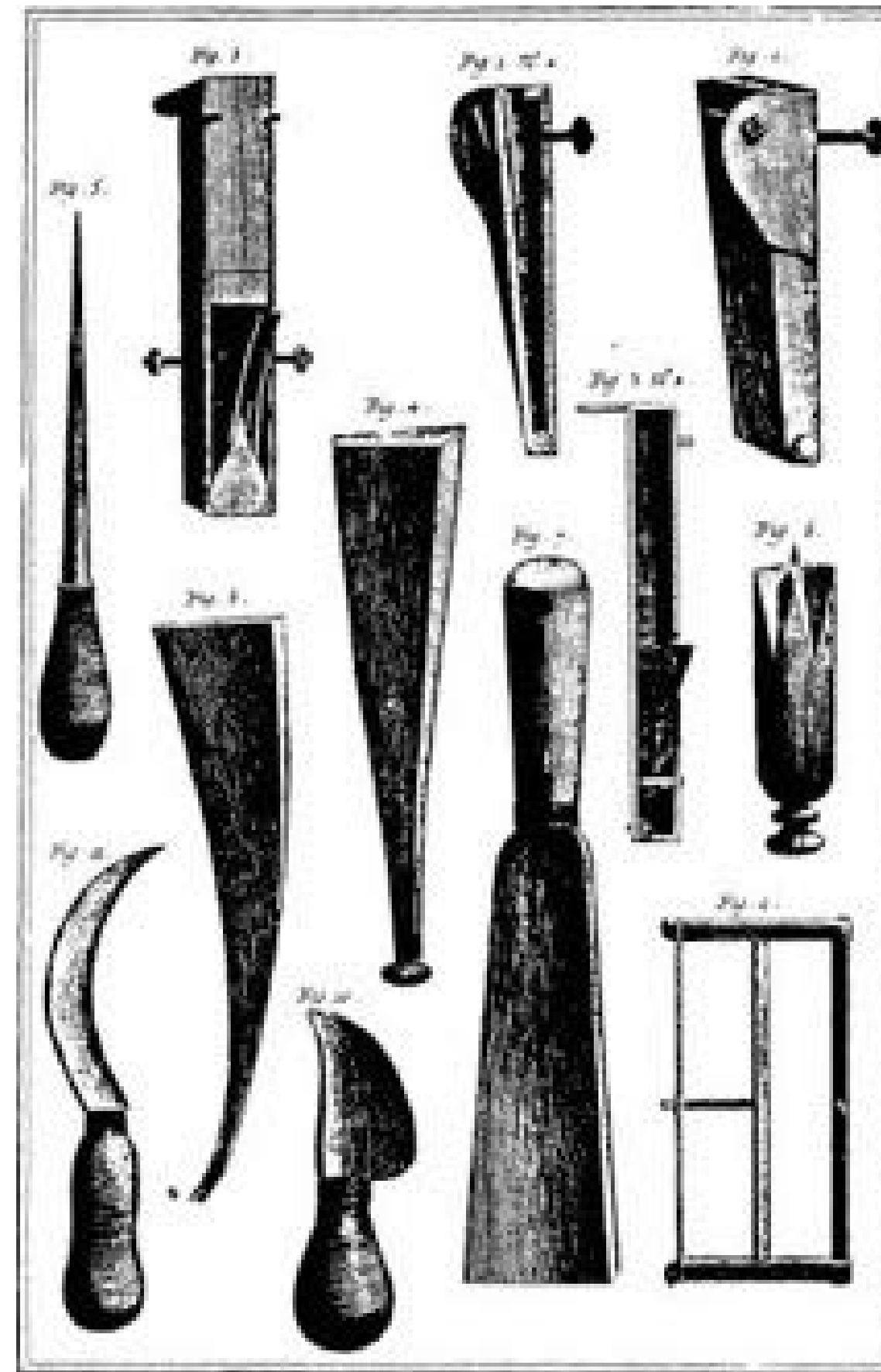
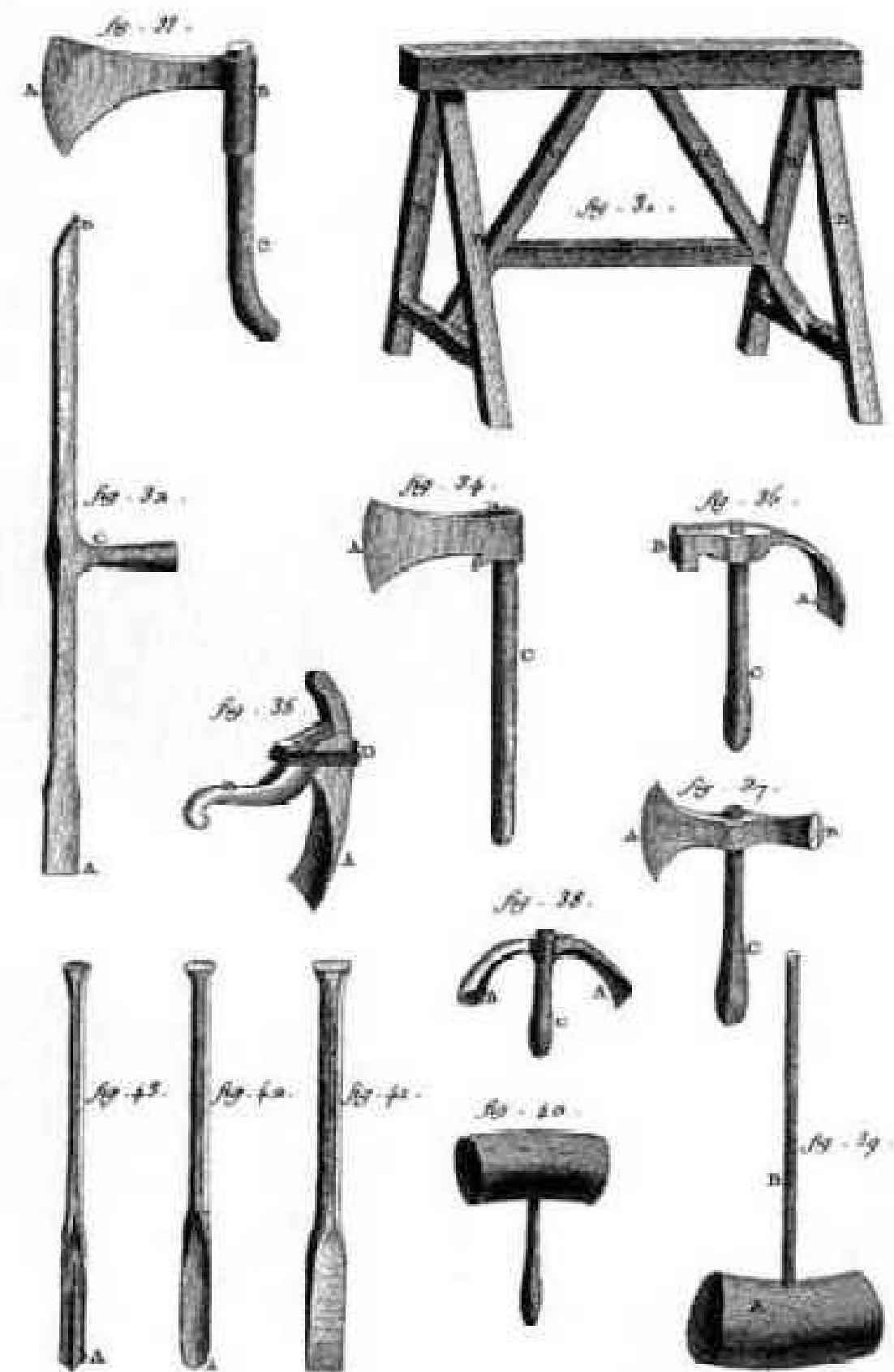
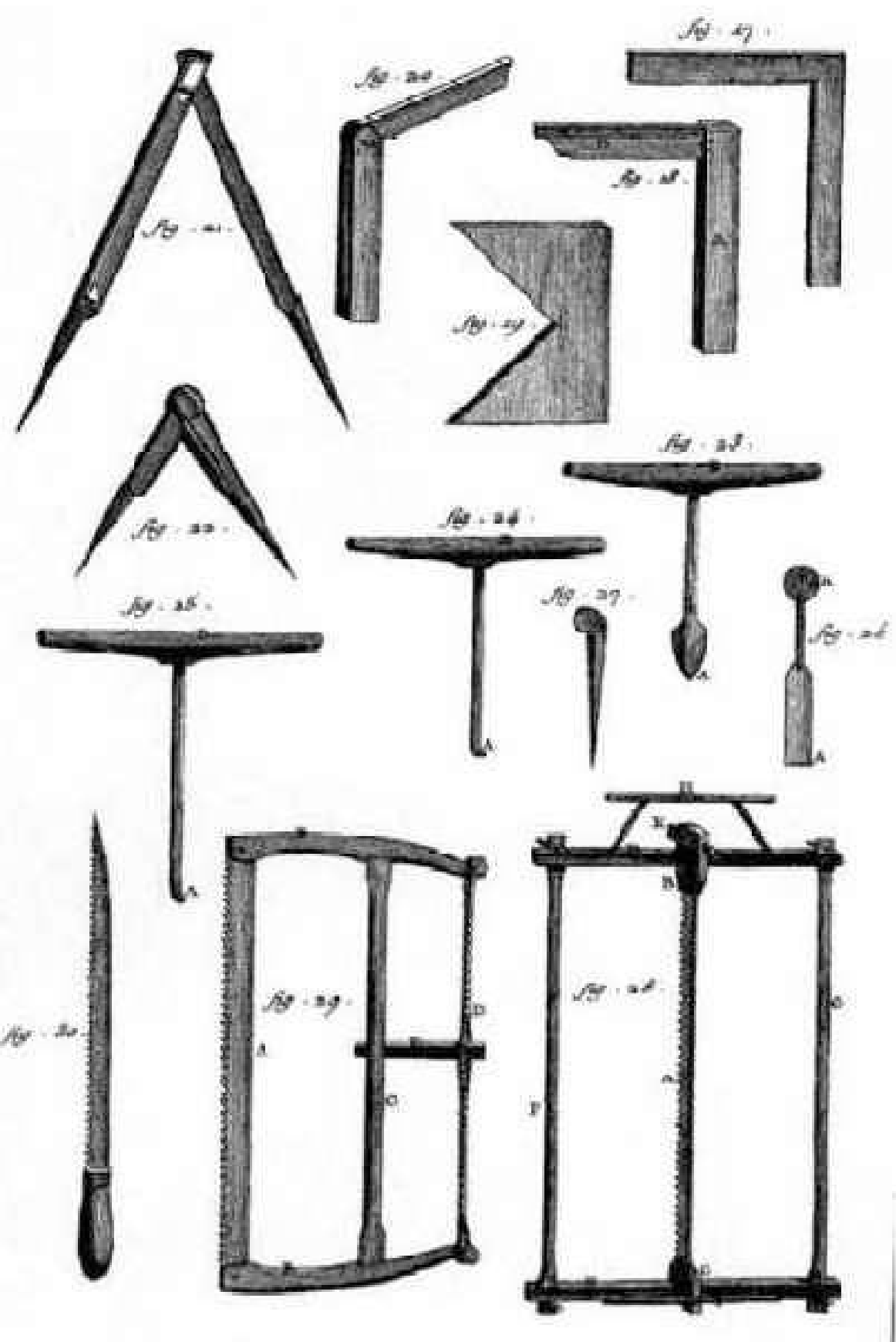


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ATOMS
MOLECULES
MATERIAL
OBJECT
TOOL
USE
CULTURE

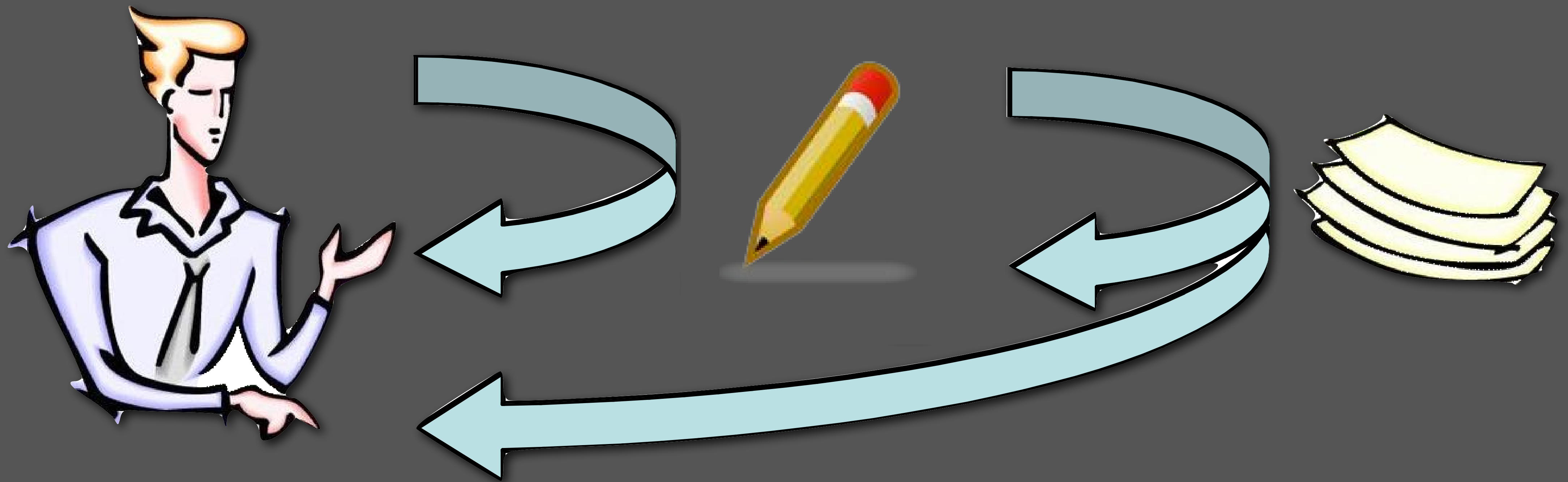
THIS IS NOT (JUST) A PENCIL



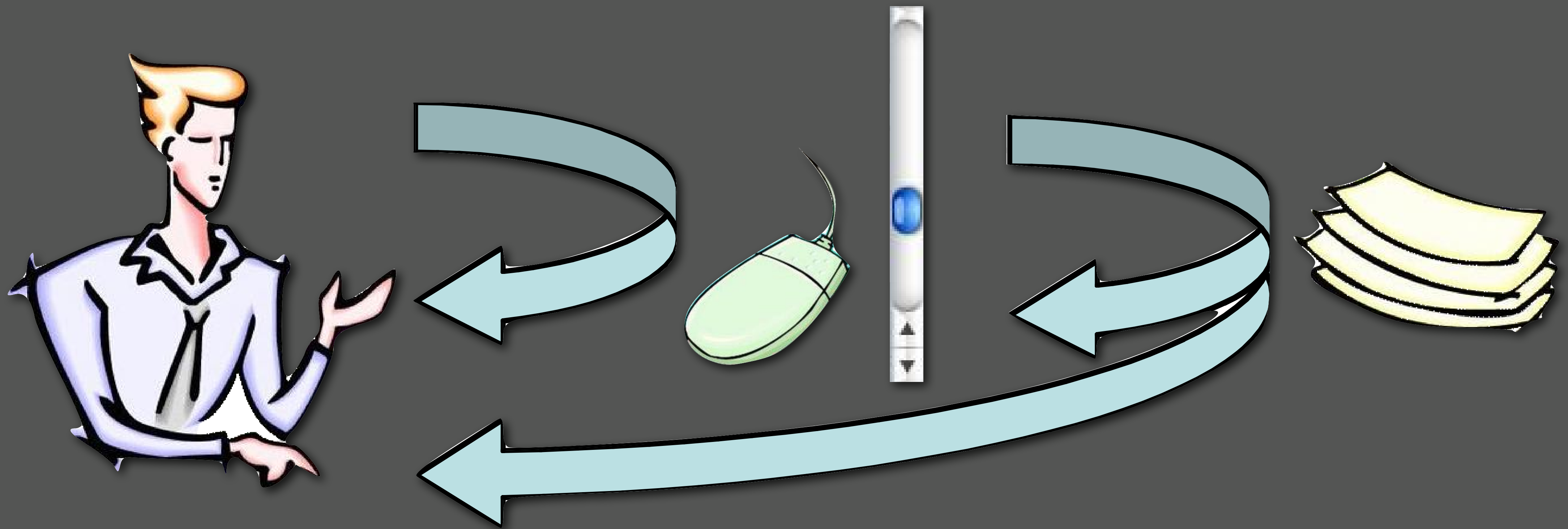
INSTRUMENTAL INTERACTION



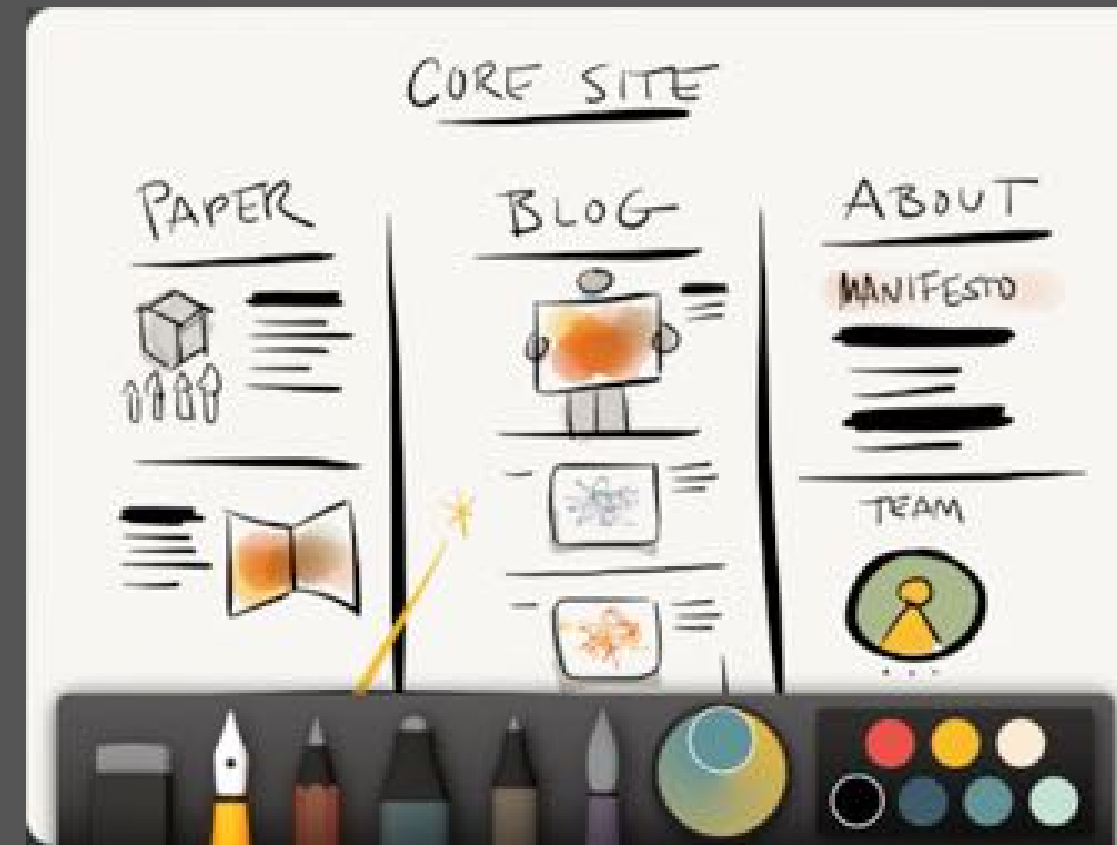
TOOLS MEDIATE INTERACTION



INSTRUMENTAL INTERACTION



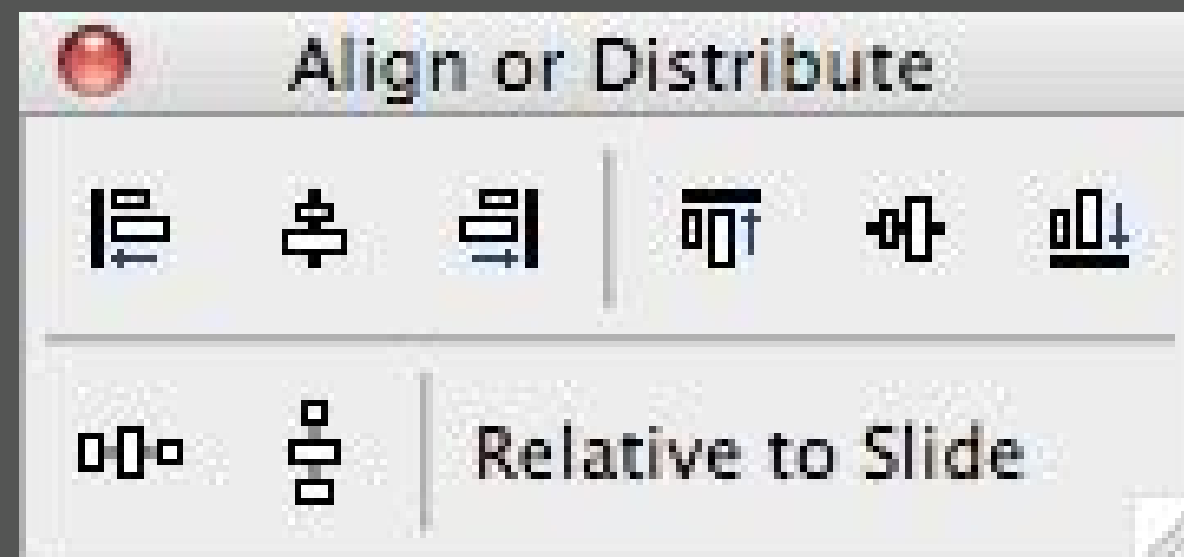
INSTRUMENTAL INTERFACES

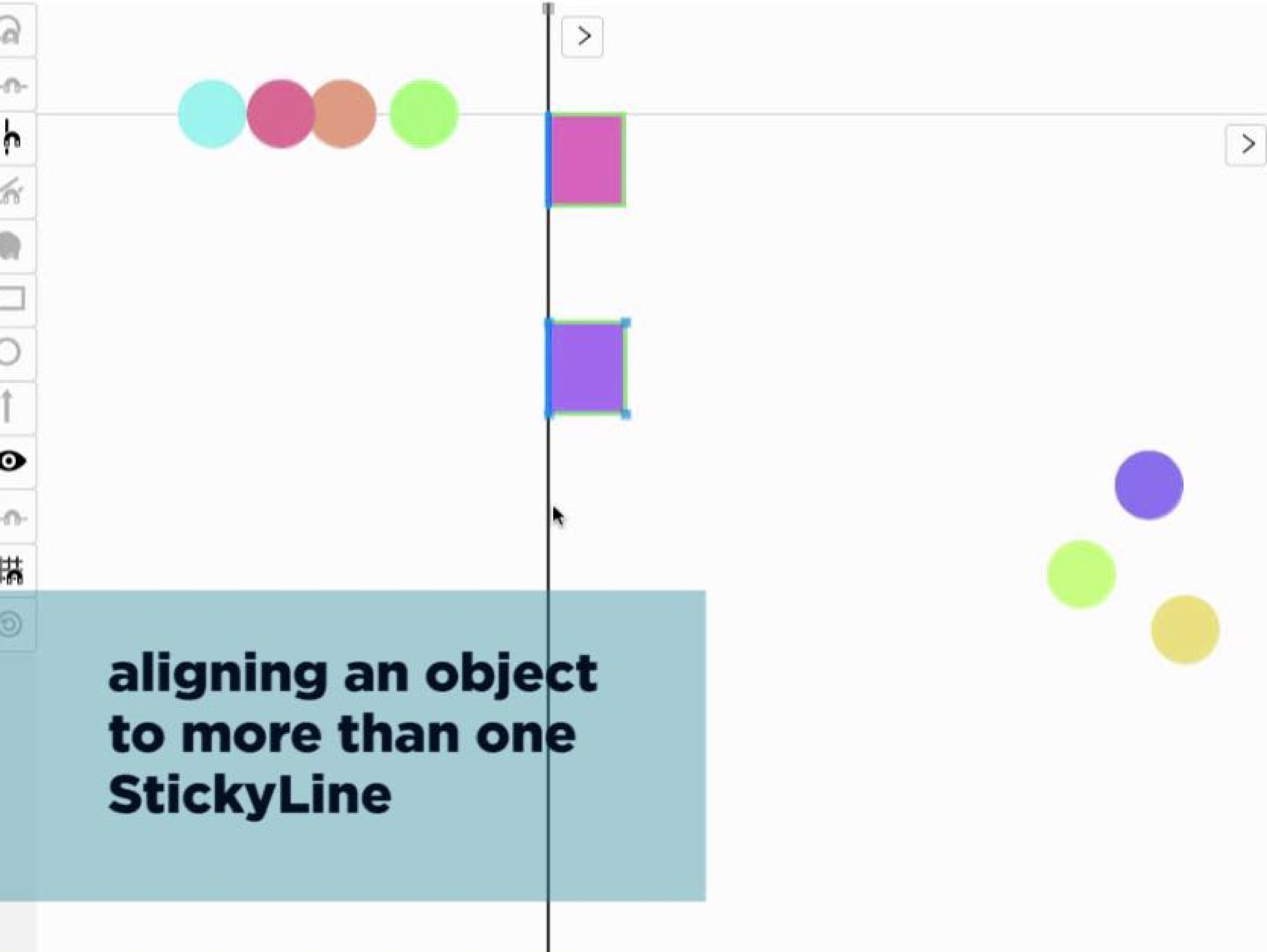


DESIGN
PRINCIPLE:
REIFICATION

TURN
ABSTRACT COMMANDS
INTO
CONCRETE OBJECTS
(INSTRUMENTS)

MAGNETIC GUIDELINES





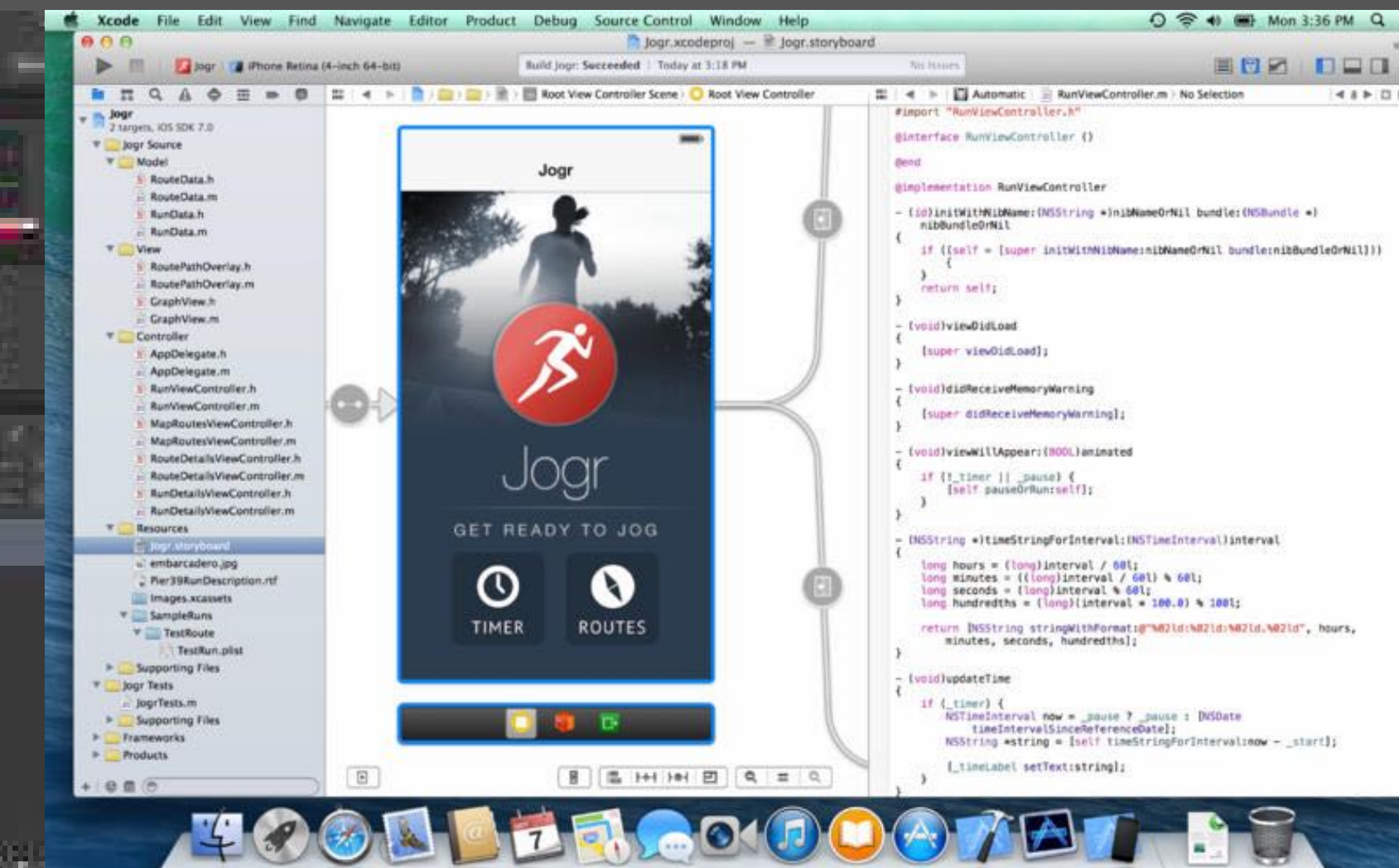
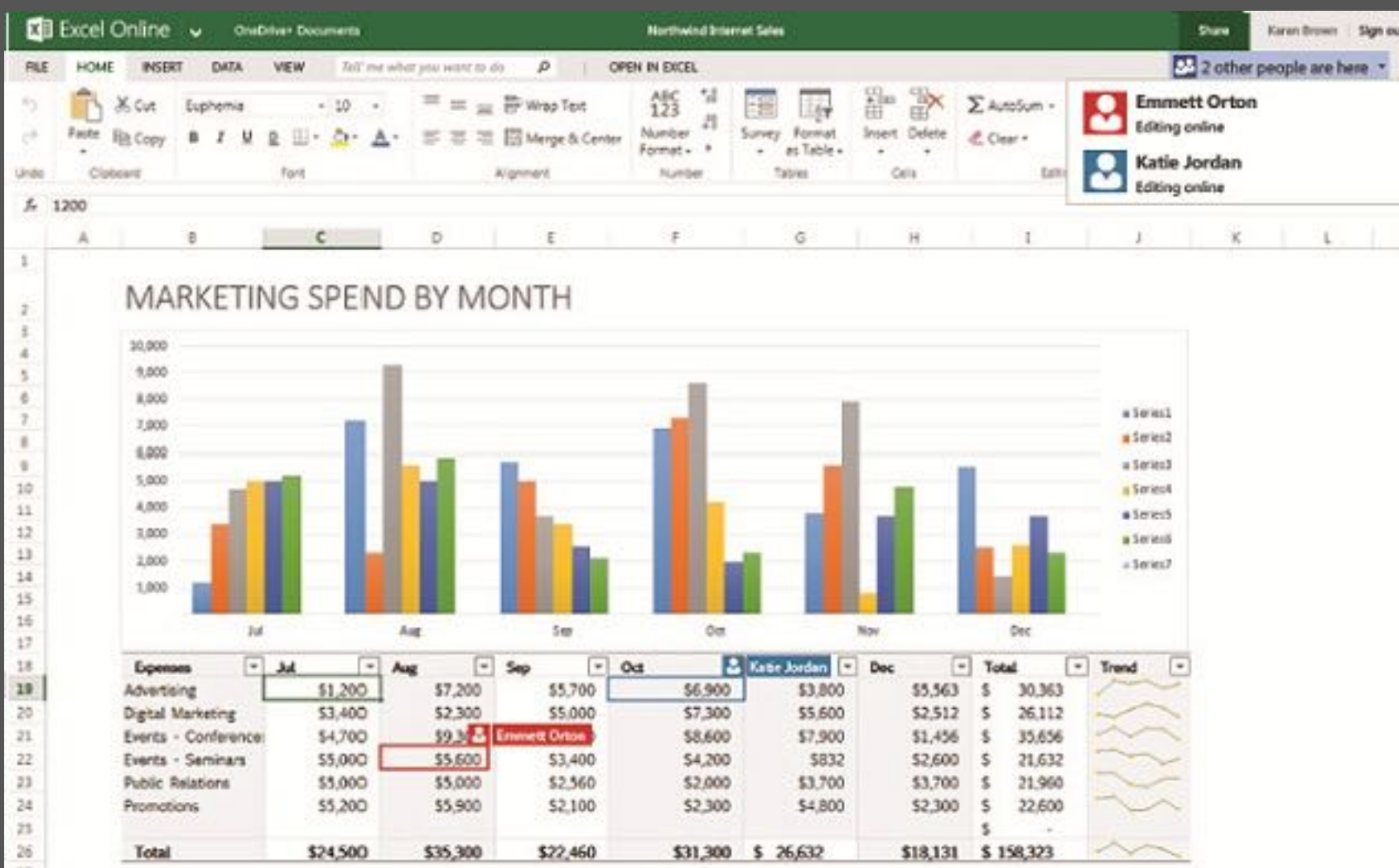
**aligning an object
to more than one
StickyLine**

—
DESIGN
PRINCIPLE:

POLYMORPHISM

**MAKE INSTRUMENTS
WORK WITH DIVERSE
CONTENT (SUBSTRATES)**

POLYMORPHISM



Color Portraits

From Color Picking to Interacting
with Color

Ghita Jalal

Nolwenn Maudet

Wendy Mackay

INRIA, Université Paris-Sud, CNRS

Orsay, France

—
DESIGN
PRINCIPLE:

REUSE

**CAPTURE AND REUSE
INTERACTION PATTERNS**

INFORMATION SUBSTRATES

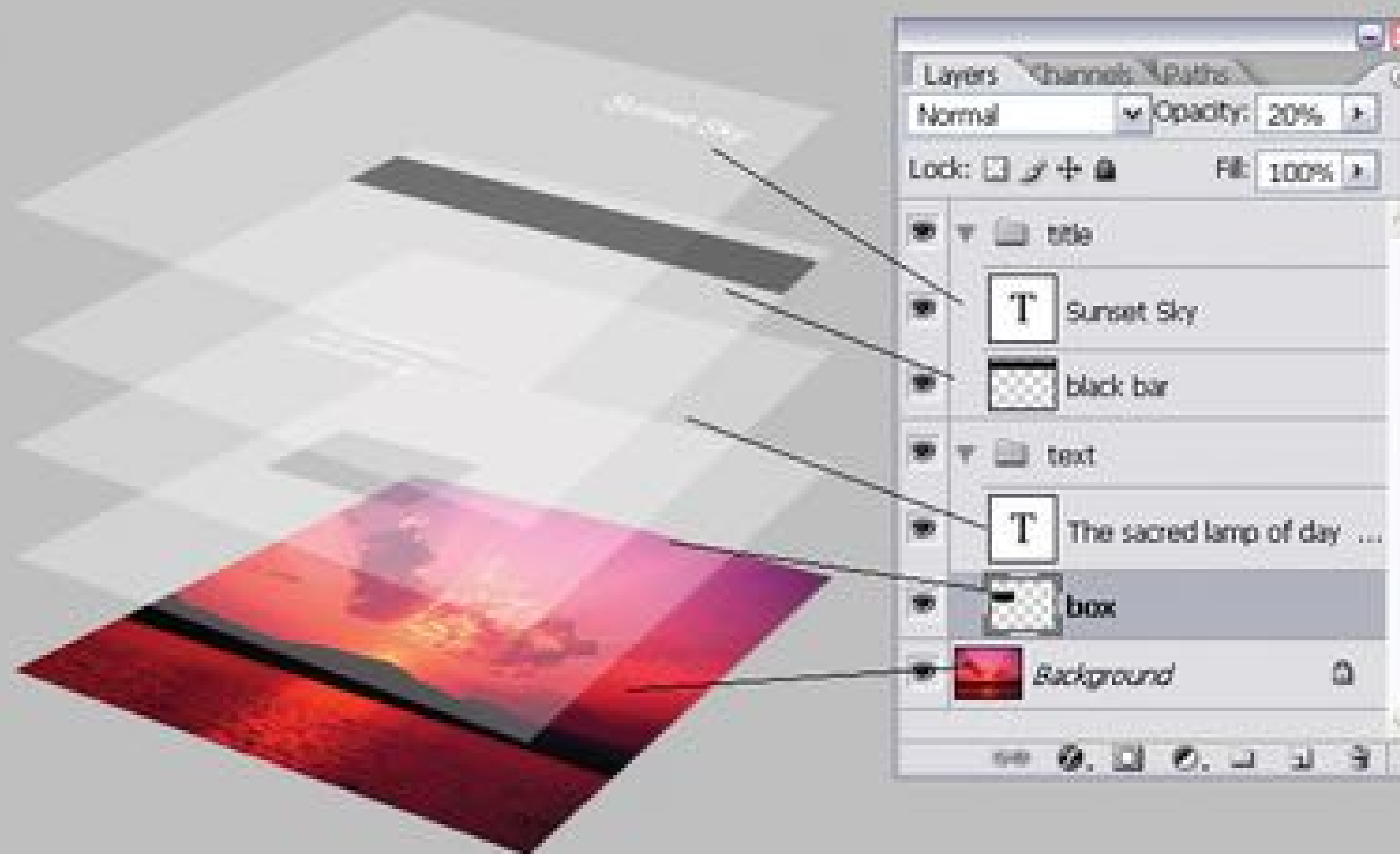
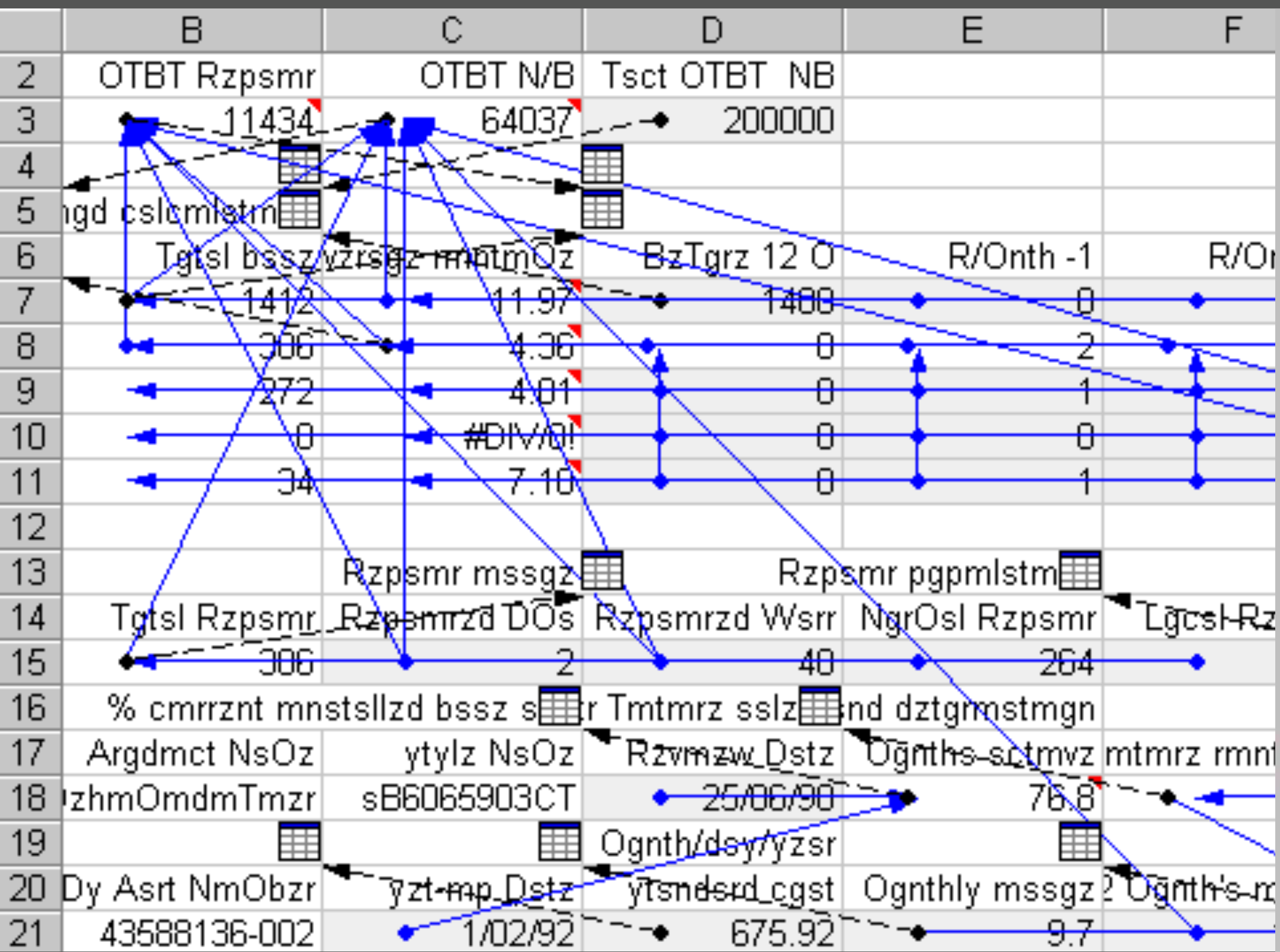


Environmental Technology (S) Co. Ltd. catalytic converter honeycomb ceramic

INFORMATION SUBSTRATES



INFORMATION SUBSTRATES



WHAT'S A SUBSTRATE?

STRUCTURE + CONTENT

**INTERNAL RULES
(CONSTRAINTS)**

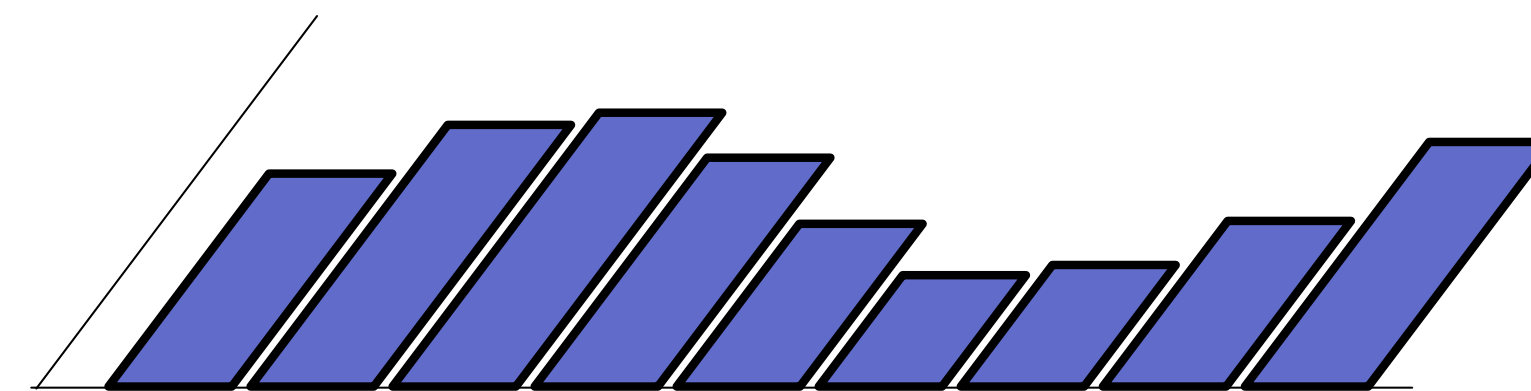
**MAPPING RULES
(TO OTHER SUBSTRATES)**

**EXTERNAL RULES
(RELATIONSHIPS)**

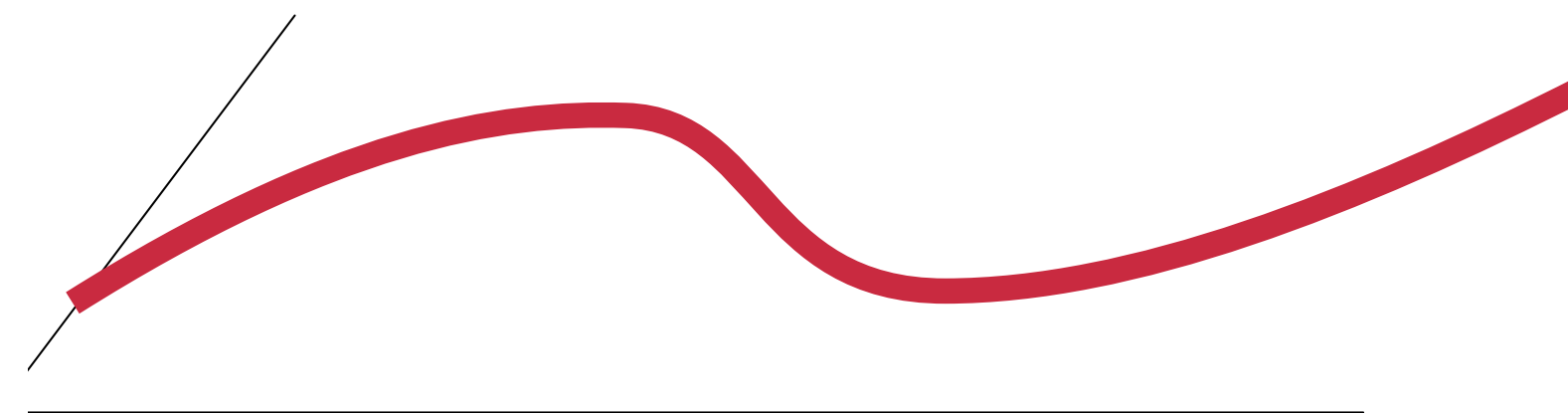
LEVELS OF INTERPRETATION



Pixels



Shapes



Graph

	<i>A</i>	<i>B</i>
<i>1</i>	<i>14</i>	<i>23</i>
<i>2</i>	<i>17</i>	<i>17</i>
<i>3</i>	<i>19</i>	<i>20</i>

Table

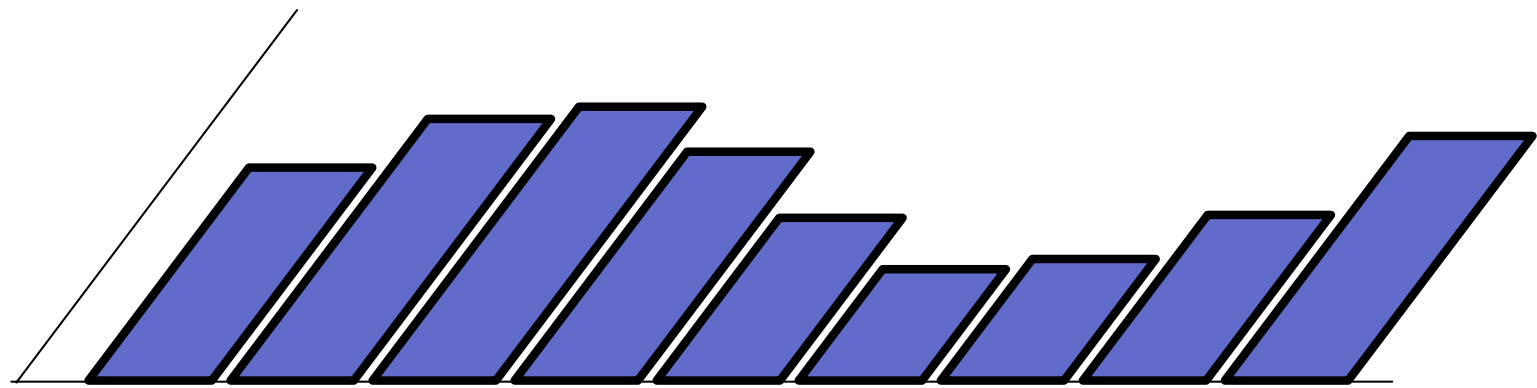
LEVELS OF INTERPRETATION



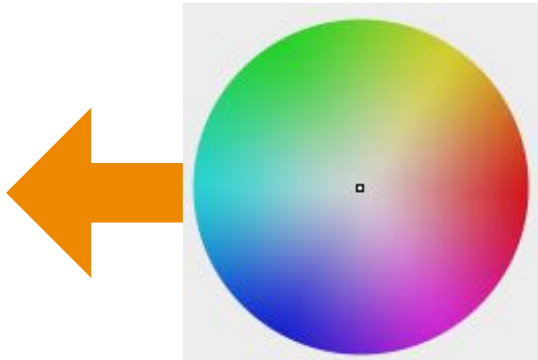
Pixels



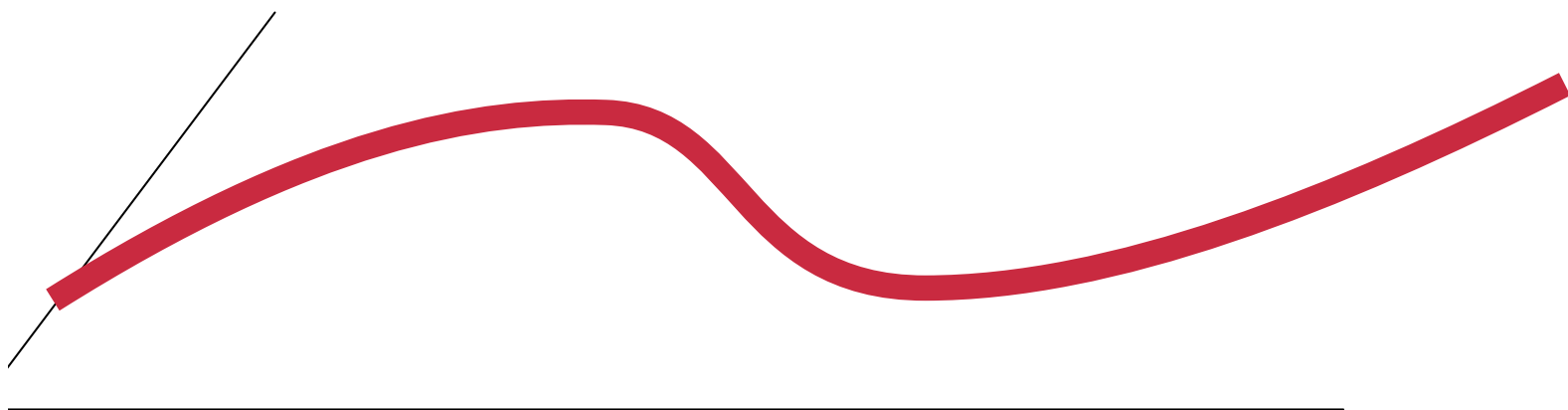
Paint



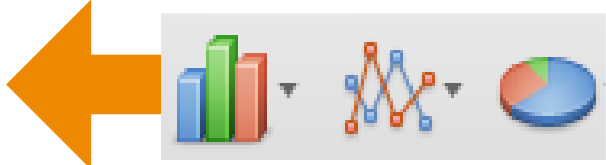
Shapes



Set color



Graph



Set type

	A	B
1	14	23
2	17	17
3	19	20

Table



Enter values

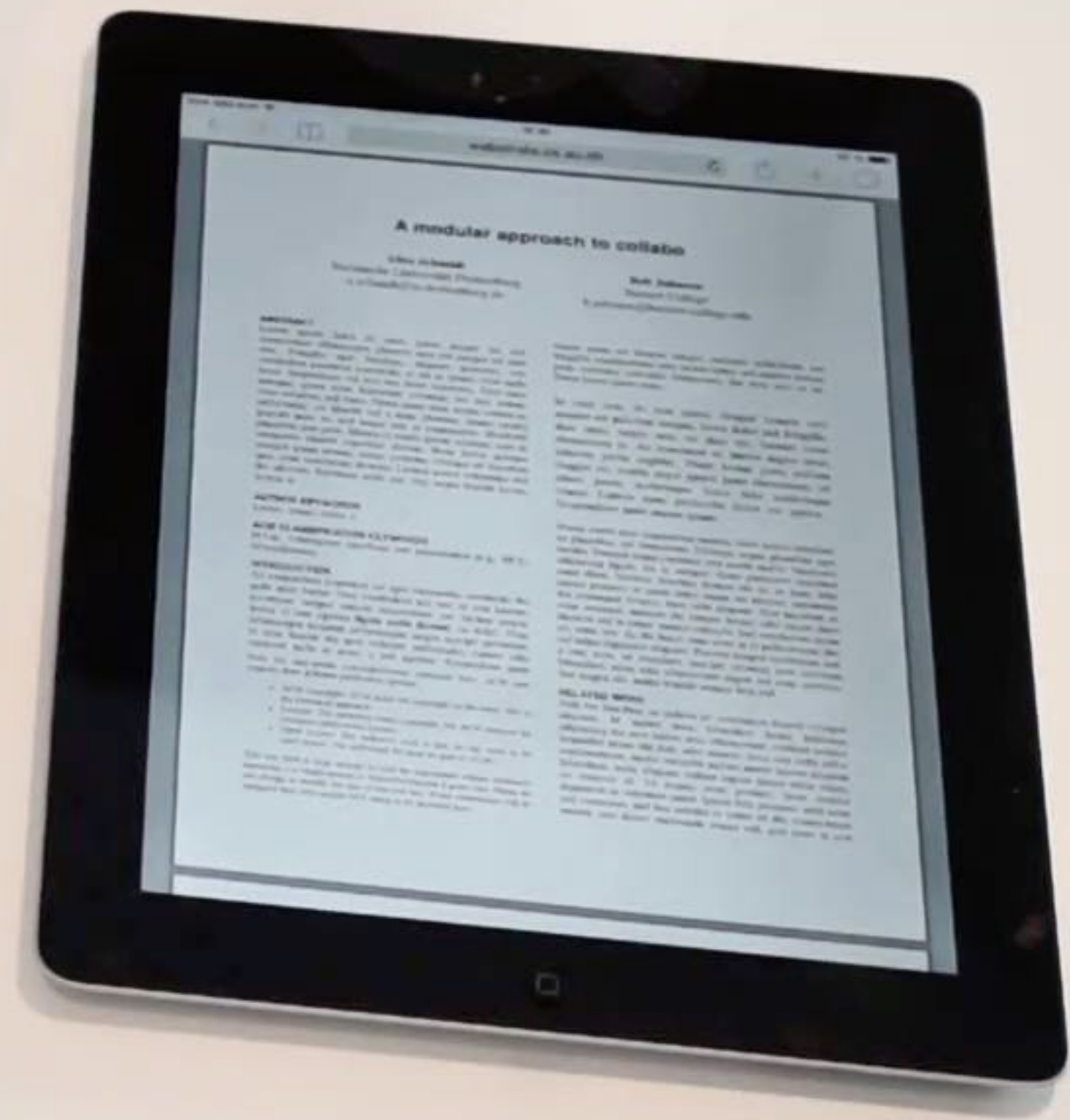
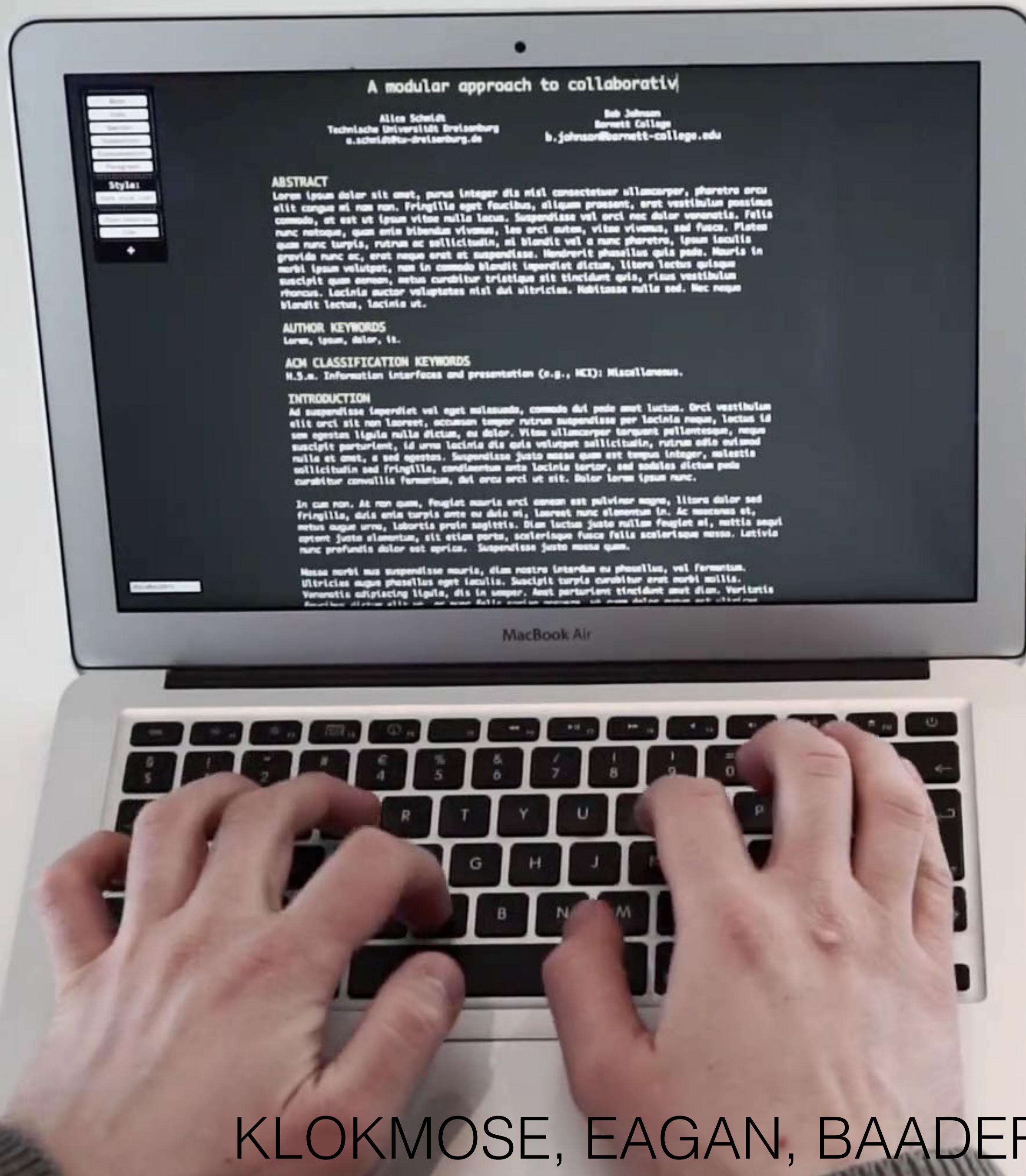


MAUDET, JALAL, TCHERNAVSKIJ, BEAUDOUIN-LAFON, MACKAY

—
NEW DESIGN
PRINCIPLE:

SHAREABILITY

**MAKE CONTENT
AND INSTRUMENTS
SHAREABLE**

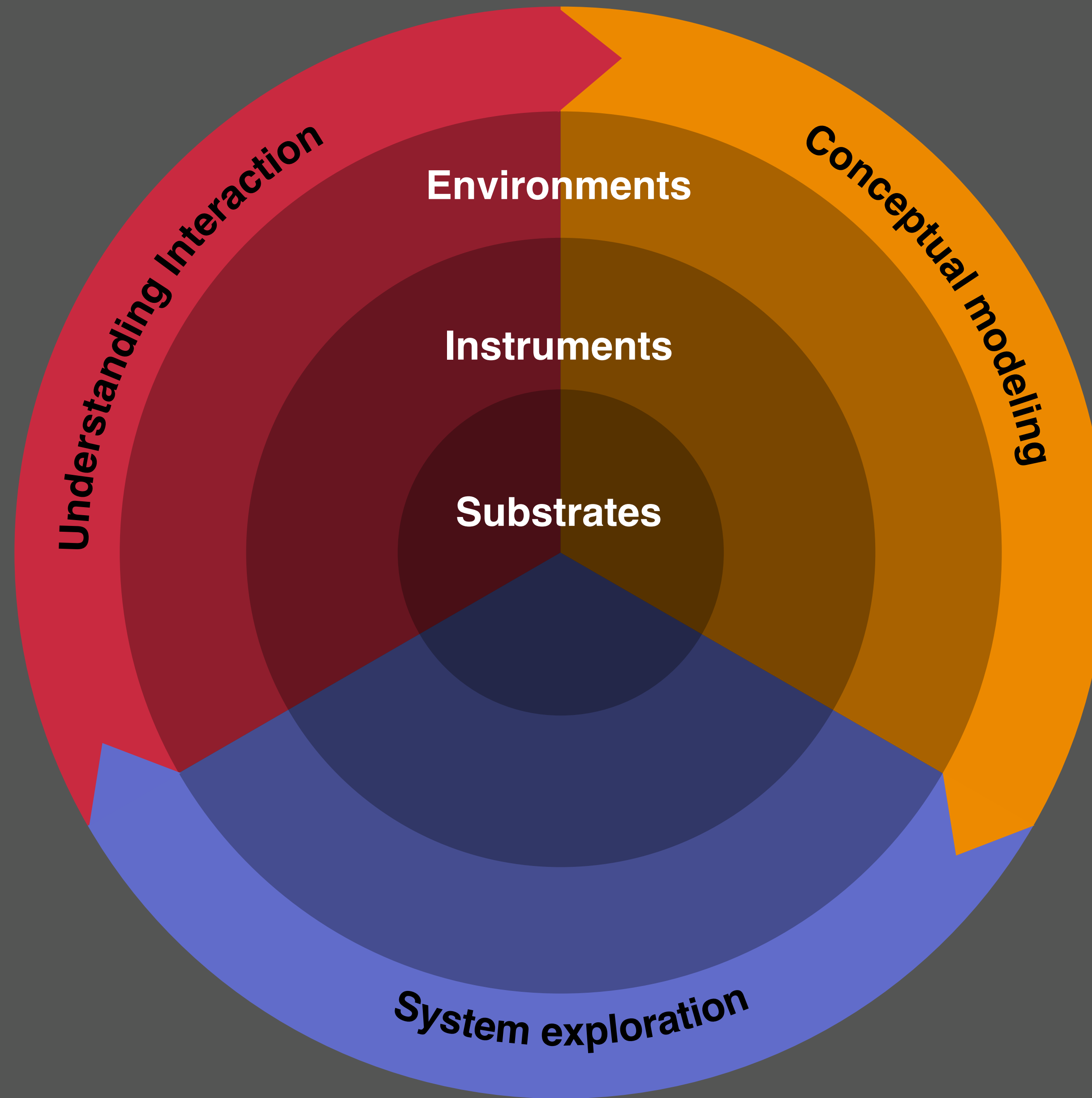


KLOKMOSE, EAGAN, BAADER, MACKAY, BEAUDOUIN-LAFON

INTERACTIVE ENVIRONMENTS



ONE



CONCLUSION

AUGMENTING HUMAN INTELLECT DOUGLAS ENGELBART

PRODUCE
2A: CARROTS
2B: BANANAS
2B1: SKINLESS
2C: ORANGES
2D: APPLES
NEWS
LETTUCE
FRENCH BREAD
BEAN SOUP
TOMATO SOUP
PAPER TOWELS
ASPIRIN
NOODLES (ELBOW KIND)
BEANS
SCOTCH TAPE



THANKS!

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