

**MEASURE THE SOUND OF SPACE:
FROM CLAUDII PTOLEMAEI
TO APPLICATION PROGRAM INTERFACE (API)**

(lang - IT)



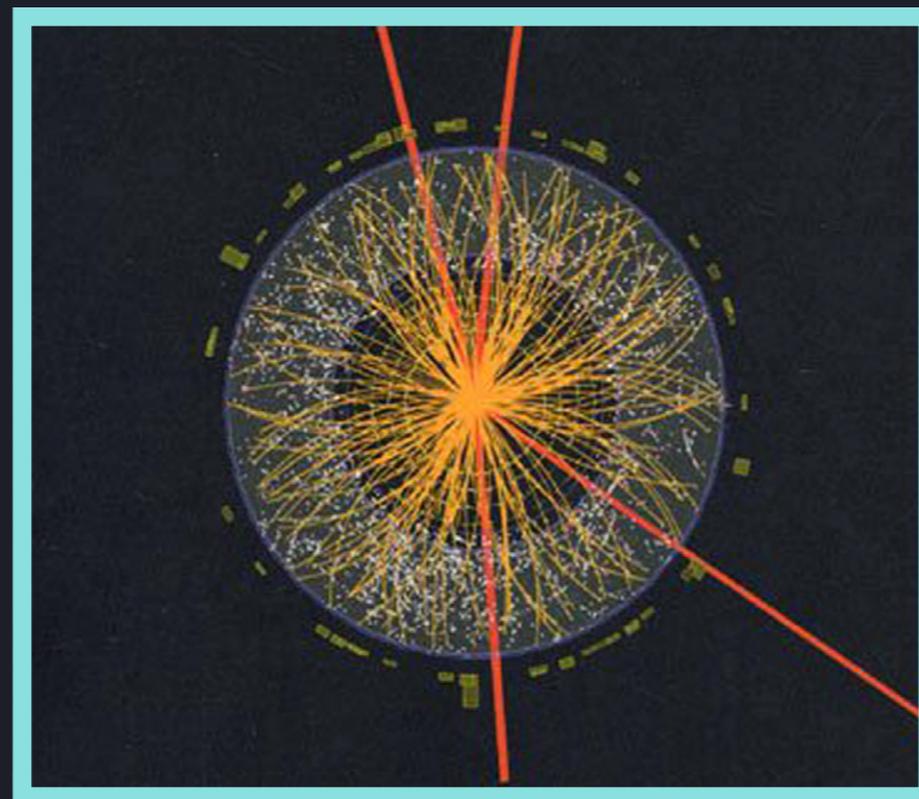
IANNIS XENAKIS

7-12

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DALLA MATERIA GALATTICA SI FORMANO
STELLE E SISTEMI SOLARI

MATERIA ED ENERGIA VIBRANO E RIPETONO SCHEMI REGOLARI



<https://soundcloud.com/esaops/a-singing-comet>

100

TOLOMEO

Harmonica - trattato di teoria armonica greca

SUPERA LA CONTRAPPOSIZIONE TRA LA SCUOLA PITAGORICO-PLATONICA E ARISTOSSENICA.

Il modello epistemologico riunisce:
SPECULAZIONE MATEMATICA E PERCEZIONE SENSORIALE



TOLOMEO

Geographia - trattato di teoria armonica greca

RAPPRESENTAZIONE DEL MONDO ABITATO - ECUMENE



(* p. 68. ed. Bert.) **ITALIA.** 139

μετὰ τὰς τοῦ Οὐάρου ποταμοῦ ἐκβολὰς ἐν τῷ Αἰγυπτιακῷ πελάγει, αἱ ἐπέχονσι μοίρας κ̄β ε̄ μ̄γ, Μασσαλιωτῶν.

(*) Νίκαια κ̄η μ̄β ε̄ιβ
 Ἡρακλέους λιμὴν κ̄η δ̄ μ̄β ε̄δ 5
 Τρόπαια Σεβαστοῦ κ̄η ε̄ μ̄β ε̄
 Μονοίκου λιμὴν κ̄η γο' μ̄β γο'.

§. 3. Λιγουρίας, κατὰ δὲ Ἑλληνας Αἰγυπτιακῆς παρὰ τὸ Αἰγυπτιακὸν πέλαγος,

Ἀλβινιμήριον (ἢ Ἀλβιντεμήριον) κ̄θ ε̄ μ̄β ε̄δ 10
 Ἀλβίγαννον κ̄θ ε̄ μ̄β ε̄δ
 Γένονα λ̄ μ̄β ε̄γ'
 Ἐντέλλα ποταμοῦ ἐκβολαί λ̄ ε̄ μ̄β ε̄γ'
 Τιγουίλλα λ̄ ε̄ιβ μ̄β ε̄γ'ιβ
 Ἀφροδίτης λιμὴν λα (ιβ' μ̄β ε̄γ') 15
 † Ἐρικῆς κόλπος λα (δ' μ̄β ε̄γ'ιβ)
 Μακράλλα ποταμοῦ ἐκβολαί λ̄ ε̄δ μ̄β ε̄δ
 ἐκτροπὴ Βορέϊον ποταμοῦ λα ε̄ μ̄γ.

§. 4. Τούσκων, κατὰ δὲ Ἑλληνας Τυρρῆνων, παρὰ τὸ Τυρρῆνικὸν πέλαγος, 20

Λοῦνα λα ε̄δ μ̄β ε̄δ
 Σελήρης ἄκρον λ̄β μ̄β γο'
 Ἡρακλέους ἱερόν λ̄β γο' μ̄β ε̄δ
 ** Ἄργου ποταμοῦ ἐκβολαί λ̄γ γ' μ̄β γο'

** Schol. Οὗτος δὲ ἰσθμὸς διὰ μέσων Πισῶν, δεξιό- 25
 μενος πρῶτον ἐπ' αὐτῶν τὸν Αἰσαρον· ὃν ὁ μὲν ἐξ ἄρκτιου φέρεται, ὃ δὲ ἐκ τῶν Ἀπεννίνων. Vatt. Coll. Lips.

† Adnot. Hoc nomen sic augent Intpp.
 Ericis portus 31, 15. 42, 50.
 Ericis sinus intima 31, 15. 42, 55. 30

140 **LIB. III. CAP. 1.**

Ποπλιώνιον πόλις λ̄γ ε̄ μ̄β
 Ποπλιώνιον ἄκρον λ̄γ ε̄ μ̄β
 Τραιανὸς λιμὴν λ̄δ μ̄β γ'
 Τελαμῶν ἄκρον ἢ Τέλιμον λ̄δ δ̄ μ̄β
 5 Ὅσσα ποταμοῦ ἐκβολαί λ̄δ ε̄ μ̄β
 Κόσσαι λα μα ε̄γ'ιβ
 Γρανύσκαι λα γ' μα ε̄δ
 Κάστρον νέον λα γο' μα γο'
 Πύργοι λ̄ς μα γο'
 10 Ἄλιον λ̄ς δ̄ μα γο'.

§. 5. Λατίνων ὁμοίως παρὰ τὸ Τυρρῆνικὸν πέ-
 λαγος,

Τιβεριὸν ποταμοῦ ἐκβολαί λ̄ς ε̄ μα ε̄
 ἢ πρὸς δυσμὰς ἐπιστροφή τοῦ
 ποταμοῦ λ̄ς ε̄ μ̄β
 15 Ἰστία λ̄ς ε̄ μα ε̄
 Ἄντιον λ̄ς ε̄γ' μα γ'
 Κλωστρα λ̄ς ε̄ μα γ'
 Κιρμαῖον ἄκρον λ̄ς ε̄ μα ε̄
 20 Ταρβανίαι λ̄ς ε̄δ μα δ̄
 Φορμίαι λ̄η ε̄ μα δ̄.

§. 6. Καμπανῶν ὁμοίως παρὰ τὸ Τυρρῆνικὸν
 πέλαγος

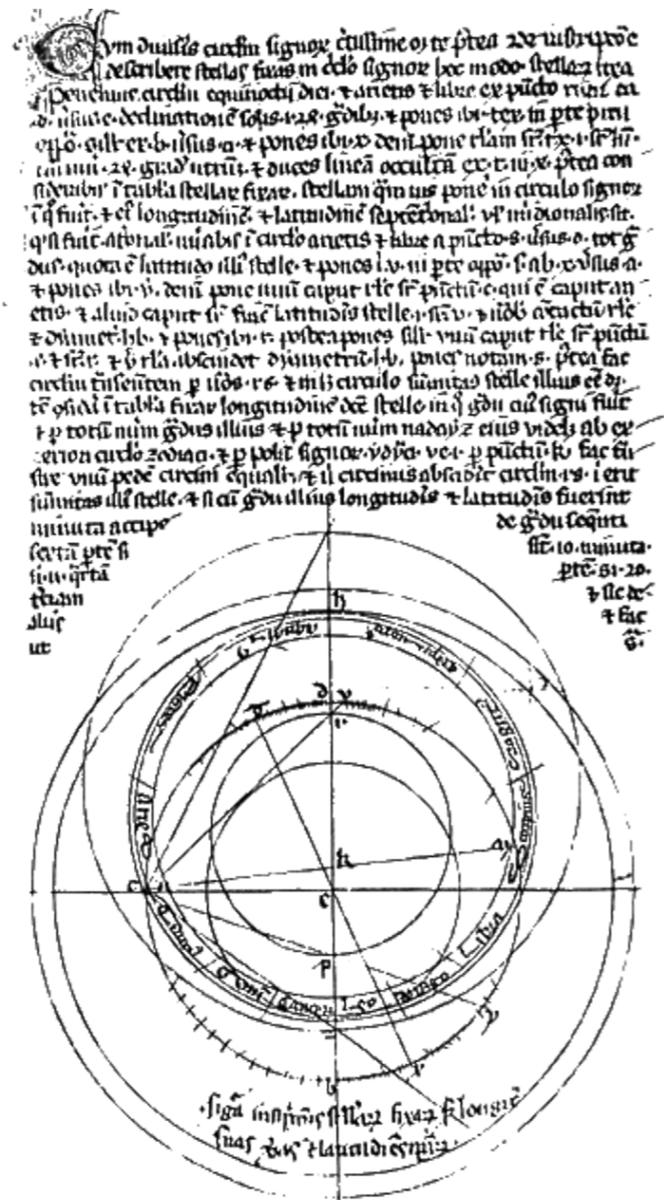
Λεῖριος ποταμοῦ ἐκβολαί λ̄η γ' μα δ̄
 25 Σόσσα (Σινόσσα?) λ̄η ε̄ μα γ'
 Οὐόλουρονον λ̄η ε̄δ μα ε̄ιβ
 Κοῦμαι λ̄θ γ' μα ε̄
 Λεῖτερονον λ̄θ ε̄ μα ε̄
 Μίσσηνον λ̄θ ε̄ μα
 30 Ποντεόλοι λ̄θ ε̄γ' μα

RITMO

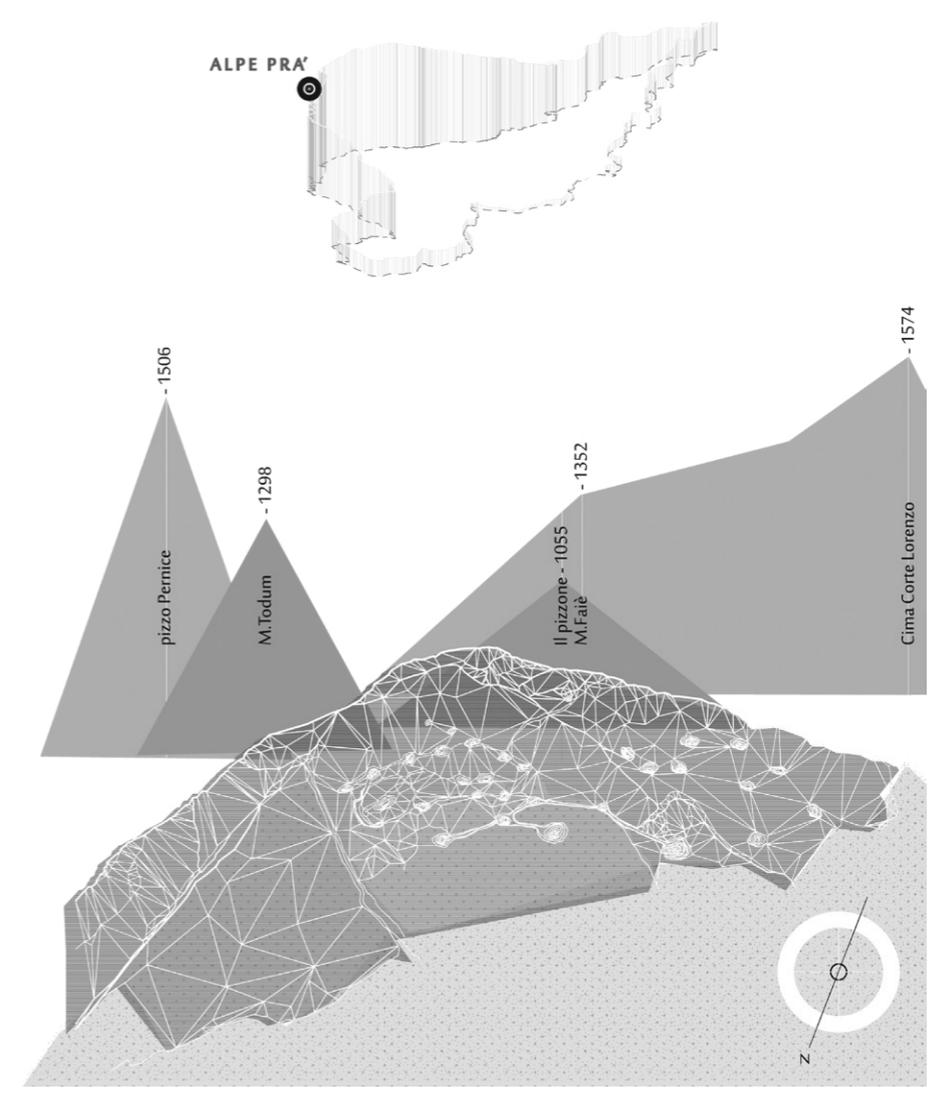
Ri-CONOSCERE - "eccolo di nuovo"
 RENDERE IL MONDO SOMIGLIANTE AD UN MODELLO

MODELLO

MAPPA -
 SENZA RAPPRESENTAZIONE CARTOGRAFICA NON ESISTE NOME
 PROPRIO. TUTTI I NOMI SONO NOMI PROPRI



Latitude  Longitude
 46,0065611 N 8,4816813 E



MANOSCRITTO 381 **San Gallo** -
notazione di famiglia neumatica

- 1 - Notazione primitiva
- 2 - Notazione nonantoliana
- 3 - Notazione di Novalesa
- 4 - Notazione milanese
- 5 - Notazione dell'Italia centrale
- 6 - Notazione beneventana
- 7 - Notazione inglese
- 8 - Notazione di S. Gallo
- 9 - Notazione tedesca
- 10 - Notazione metense
- 11 - Notazione del nord della Francia
- 12 - Notazione di Chartres
- 13 - Notazione aquitana
- 14 - Notazione visigotica
- 15 - Notazione catalana



FAMIGLIE

LE MELODIE SONO STATE SCRITTE ATTRAVERSO DIFFERENTI PROCEDIMENTI DI NOTAZIONE:
NELLA MEDESIMA EPOCA COESISTONO VARI SISTEMI GRAFICI PROPRI DI ZONE SPECIFICHE.

VIII

P

re-cá- tus est Mó- y- ses 317,6

L

E

VIII

in mu- li- é- ri- bus 37,1

L

E

NEUMA *νεύμα (segno, cenno)

I NEUMI SONO I SEGNI CHE COSTITUISCONO LA SCRITTURA MUSICALE

https://www.youtube.com/watch?v=EN73kO2_PZA

ADIASISTEMATICA *

I neumi erano scritti in campo aperto e non veniva riportata nessuna indicazione sulla posizione melodica

TRASMISSIONE MNEMONICA - TRADIZIONE ORALE

DIASISTEMATICA *

* RIGO /
Ricavare il numero delle note cantate su ciascuna sillaba ma non gli intervalli; i segni indicano il disegno melodico

* /
I segni musicali tracciati a punta secca, alla quale si aggiungono una o più linee, una delle quali viene spesso colorata per distinguere il grado sopra il semitono; la linea di colore rosso indica il Fa, quella di colore giallo o verde il Do

* TETRAGRAMMA /
Il rigo della notazione quadrata per ambitus gregoriano

* PENTAGRAMMA /
Il rigo della notazione per l'ambitus della musica moderna (ESTENSIONE)

(INTERVALLO- RITMO INTERPRETATO)



(INTERVALLO - RITMO RIGOROSO)

RITMO - MISURA E GRAZIA

**ARITMETICA -
RITMO RINFORZATO**

(VIRGA, PUNCTUM, TRACTULUS) -
indica la nota isolata su di una sillaba
(PORRECTUS, TORCULUS) -
movimento melodico ascendente-discendente o
discendente-ascendente
(ORISCUS, QUILISMA) -
neumi di conduzione

CODICE di riferimento

(DIVISIO MINIMA) -
all'interno del periodo musicale
delimita un inciso

TABLE 1: Neumes of the 10th-11th centuries

name	modern	French	St Gallen	North Spain	Toledo	Catalan	Bologna	Palaeo-Frankish	Breton	Messine	Aquitanian	Nonantolan
virga	•	┆	/		┆		/		/			
punctum	•	•	••	•	•••	••	••	••	••	••	••	•
pes	◐	┆	┆┆	┆┆┆	┆┆┆	┆	┆	┆┆	┆┆	┆┆	┆	┆
clivis (flexa)	◐	┆	┆	┆┆	┆┆	┆	┆	┆┆	┆┆	┆┆	┆	┆
torculus	◐◐	┆	┆	┆┆	┆┆	┆	┆	┆┆	┆┆	┆┆	┆	┆
porrectus	◐◐	N	N	N┆	N┆	N	N	N	N	N┆	N	N┆
scandicus	◐◐	!	!	!┆	!┆	!	!	!	!	!┆	!	!
climacus	◐◐	┆	┆	┆┆	┆┆	┆	┆	┆┆	┆┆	┆┆	┆	┆
strophici				x-								
trigon		◻	◻		◻	◻	◻		◻			◻
oriscus		◻	◻	◻		◻	◻		◻	◻	◻	◻
pressus		┆	┆			┆	┆		┆	┆	┆	┆
pes stratus		┆	┆						┆		┆	
salicus		!	!			!			!	!		
quilisma		┆	┆	┆	┆	┆	┆		┆	┆	┆	┆
epiphonus		┆	┆			┆			┆	┆	┆	
cephalicus		┆	┆	┆		┆	┆		┆	┆	┆	┆
ancus			┆									
axis		┆	┆	┆	┆	┆	┆	┆	┆	┆	┆	┆

1642

1623 / WILHELM SCHICKARD **Orologio calcolatore** - strumento di calcolo
BLAISE PASCAL Pascalina - addizionatore a ruote



1779

ENCYCLOPÉDIE,
O U
DICTIONNAIRE RAISONNÉ
DES SCIENCES,
DES ARTS ET DES MÉTIERS.

PAR UNE SOCIÉTÉ DE GENS DE LETTRES.

Mis en ordre & publié par M. DIDEROT, de l'Académie Royale des Sciences & des Belles-Lettres de Paris; & par M. D'ALEMBERT, de l'Académie Royale des Sciences de Paris, de celle de Prusse, & de la Société Royale de Londres.

*Tantum series juncturae pollet,
Tantum de medio fanguis accedet honori? HORAT.*

TOME PREMIER.



A PARIS.

Chez BRIASSON, rue Saint Jacques, à la Science.
DAVID l'aîné, rue Saint Jacques, à la Plume d'Or.
LE BRETON, Impri-maire ordinaire du Roy, rue de la Harpe.
DURAND, rue Saint Jacques, à Saint Landry, & au Griffon.

M. DCC. LII.

AVEC APPROBATION ET PRIVILEGE DU ROI.



WOLFGANG AMADEUS MOZART Musikalisches Würfelspiel - K.516f

ISTRUZIONE

PER COMPORRE DELLE VALZER OPPURE SCHLEIFER COL MEZZO DI DUE DADI, SENZA AVER LA MINIMA NOTIZIA DI MUSICA, OVVERO DELLA COMPOSIZIONE

ALGORITMO

BASATO SULLE 176 POSSIBILI MISURE PER UN MINUETTO E 96 POSSIBILI FORME TERNARIE

ZAHLENTAFEL. TABLE de CHIFFRES.

Erster Theil.

Premiere Partie.

	A	B	C	D	E	F	G	H
2	96	22	141	41	105	122	11	30
3	32	6	128	63	146	46	134	81
4	69	95	158	13	153	53	110	24
5	40	17	113	85	161	2	159	100
6	148	74	163	45	80	97	36	107
7	104	157	27	167	154	68	118	91
8	152	60	171	53	99	133	21	127
9	119	94	114	30	140	86	169	94
10	98	142	42	156	75	129	62	123
11	3	87	165	61	135	47	147	33
12	54	130	10	103	28	37	106	5

Zweiter Theil.

Seconde Partie.

	A	B	C	D	E	F	G	H
2	70	121	26	9	112	49	109	14
3	117	39	126	56	174	18	116	83
4	66	199	15	132	73	58	145	79
5	90	176	7	34	67	160	52	170
6	25	143	64	125	76	136	1	93
7	198	71	150	29	101	162	23	161
8	16	155	47	175	43	168	89	172
9	120	58	45	166	51	115	72	111
10	65	77	19	82	137	38	149	8
11	102	4	31	164	144	59	173	78
12	35	20	108	92	12	124	44	131

TABLE de MUSIQUE. 5.

<https://www.youtube.com/watch?v=Jtpb1DkPx7I>

2012

ALVA NOTO
Carsten Nicolai (Chemnitz/ Karl-Marx-Stadt, 1965)
<http://www.raster-noton.net/>

<http://www.alvanoto.com/?a1=video&a2=index>

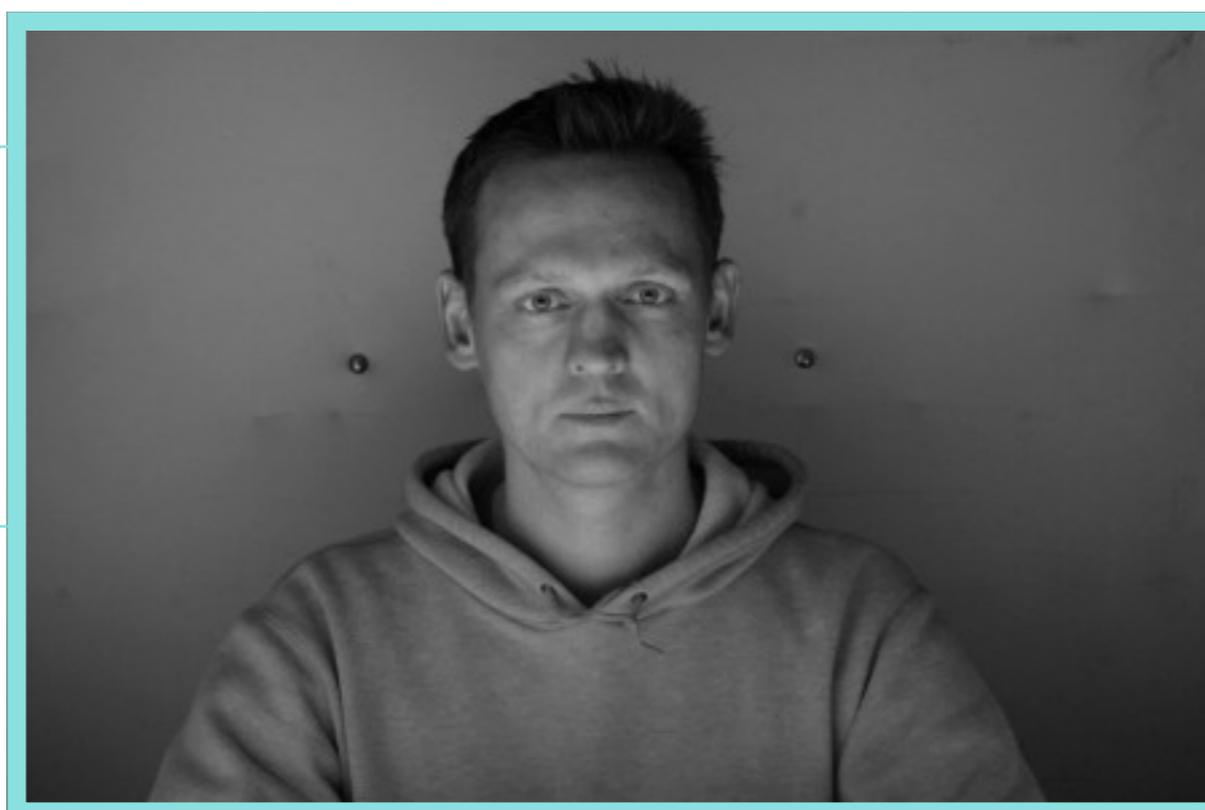
"IN MY OPINION THE EMPHASIS OF SELF-GENERATING PROCESSES IS A REACTION TO THE CLAIM TO PLAN EVERYTHING. MANY OF MY WORKS UNDERLIE A RULE AND INTRODUCE A MODEL AS ORGANIZING SCHEME TO RECOGNIZE CHAOTIC MOVEMENTS. I AM INTERESTED IN BOTH MOMENTS, THEY LIE REALLY CLOSE TOGETHER. (...)"

1334

KARESANSUI
Japanese rock garden

1920

WOLFGANG METZGER
Laws of Seeing



1963

BRUNO MUNARI
I colori della Luce
(+ LUCIANO BERIO)

<https://www.youtube.com/watch?v=c0JHbCRWffM>

1996

TAKASHI IKEGAMI ,
TAKASHI HASHIMOTO
Active Mutation in Self-reproducing Networks of Machines and Tapes

21/07/2012 - 6/01/2013
CARSTEN NICOLAI

UNIDISPLAY / CURATED BY CHIARA BERTOLA AND ANDREA LISSONI
HangarBicocca

www.youtube.com/watch?v=87ABUdrJVJ8

2012

ALVA NOTO

Carsten Nicolai (Chemnitz/ Karl-Marx-Stadt, 1965)

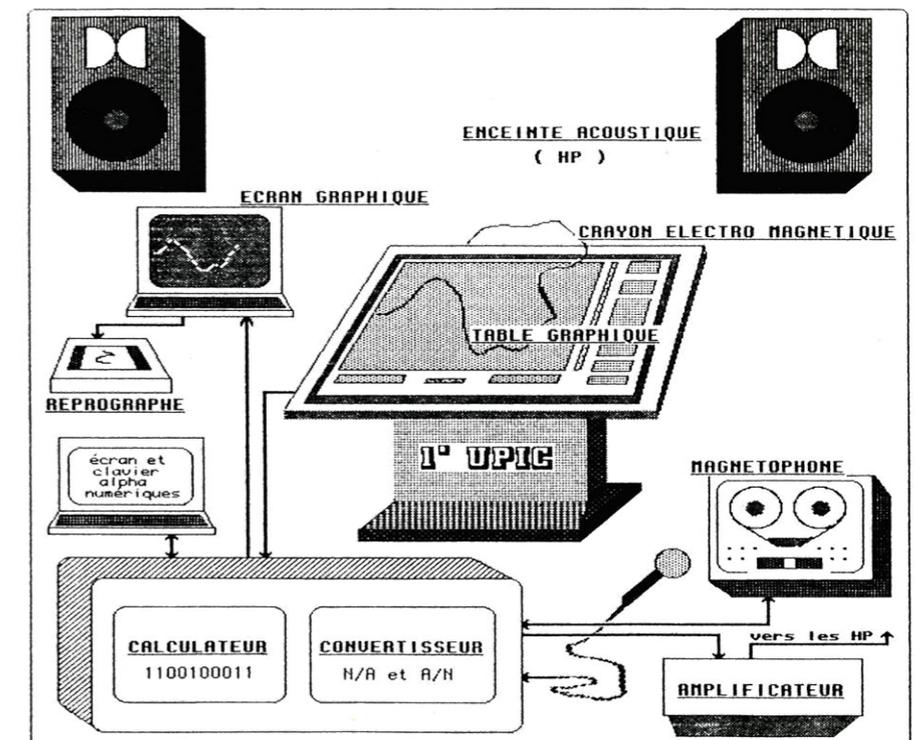
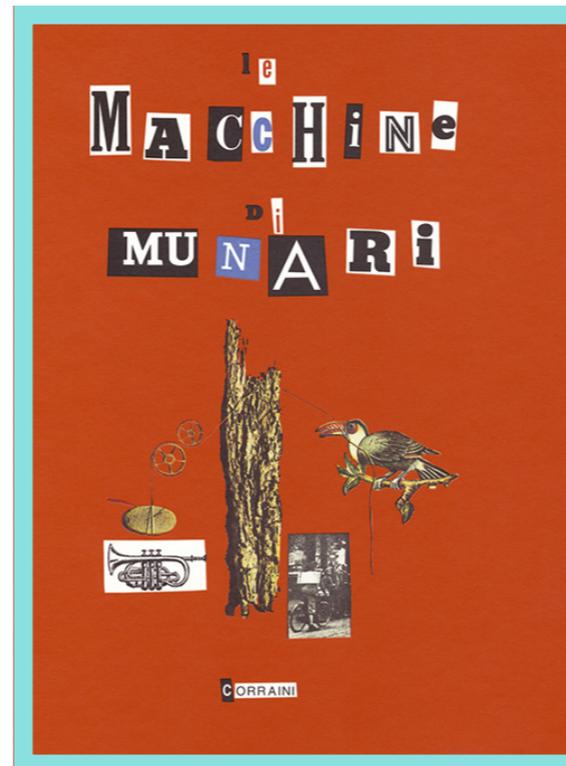
<http://www.raster-noton.net/>

1963

BRUNO MUNARI
I colori della Luce
SEMIOTICA

(+ LUCIANO BERIO)

"Avevamo fatto sonorizzare da Berio questo film a luce polarizzata perché i colori della luce sono senza "timbro" come i suoni generati elettronicamente. Purezza assoluta dei colori assieme alla purezza dei suoni elettronici."



1977

<https://www.youtube.com/watch?v=c0JHbCRWffM>

2012

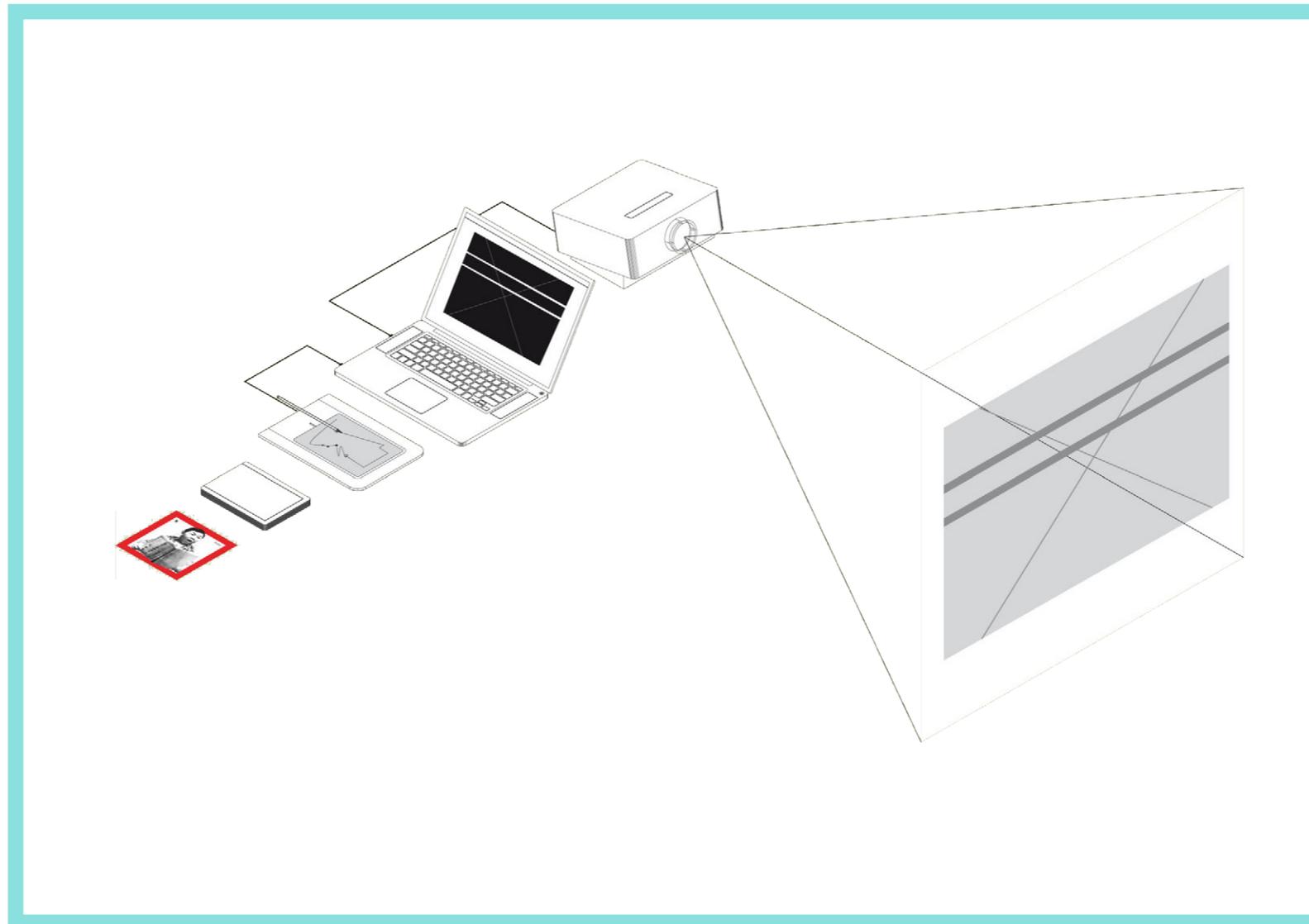
ALVA NOTO
Carsten Nicolai (Chemnitz/ Karl-Marx-Stadt, 1965)
<http://www.raster-noton.net/>

2013

PRODUZIONE O RI-PRODUZIONE

"Reproduction is to the digital world what the hot-air balloon once was to aviation."

Usando le tecnologie digitali siamo capaci di introdurre nuove forme di produzione e non di riproduzione



<https://www.vimeo.com/62926858>



```
import ddf.minim.*;
import ddf.minim.ugens.*;

Minim minim;
AudioOutput out;
Oscil wave;

boolean sketchFullScreen()
{return true;}

void setup()
{size(displayWidth, displayHeight, P3D);
 minim = new Minim(this);
 out = minim.getLineOut();
 wave = new Oscil( 440, 0.5f, Waves.SINE );
 wave.patch( out );}

void draw()
{background(0);
 stroke(255);
 for(int i = 0; i < out.bufferSize() - 1; i++)
 {line( 0, 50 + out.left.get(i)*10, width, 50 + out.right.get(i+1)*10 );
  line( width, 50 + out.right.get(i)*100, 0, 50 + out.left.get(i+1)*100 );}}

void mouseMoved()
{float modulateAmount = map( mouseY, 0, height/2, 50, 1 );
 float modulateFrequency = map( mouseX, 0, 800, 0.1, 400);

 wave.frequency.setLastValue( modulateFrequency );
 wave.amplitude.setLastValue( modulateAmount );}
```

```
import ddf.minim.*;
import ddf.minim.ugens.*;
```

```
void setup()
```

```
wave = new Oscil( 440, 0.5f, Waves.SINE );
```

```
void draw()
```

```
{background(0);
 stroke(255);
 for(int i = 0; i < out.bufferSize() - 1; i++)
 {line( 0, 50 + out.left.get(i)*10, width, 50 + out.right.get(i+1)*10 );
  line( width, 50 + out.right.get(i)*100, 0, 50 + out.left.get(i+1)*100 );}}
```

```
void mouseMoved()
```

```
float modulateAmount = map( mouseY, 0, height/2, 50, 1 );
 float modulateFrequency = map( mouseX, 0, 800, 0.1, 400);
```

OOO - OBJECT ORIENTED ONTOLOGY.

**MATERIALISM
NON-HUMAN CENTERED VIEW**

La OOO mette gli oggetti (things) al centro del suo studio. Tutto esiste e ha stesso valore, dal DVD al bonobo. La speculazione è il mezzo usato per caratterizzare come gli oggetti esistono e interagiscono.

Nel pensiero contemporaneo, le cose (things) sono prese sia come aggregazione di bit sempre più piccoli (naturalismo scientifico) o come costruzioni del comportamento umano e della società (il relativismo sociale). La OOO dirige un percorso tra i due, attirando l'attenzione alle cose a tutte le scale (dagli atomi alle alpaca), e meditando la loro natura e le relazioni tra loro e noi.

TESTING ONE-OFF IDEAS

In ambito computazionale esiste un paradigma di programmazione che permette di definire oggetti software in grado di interagire gli uni con gli altri attraverso lo scambio di messaggi

IDE



2005

WORLD WIDE WRONG EXHIBITION
Jodi (Joan Heemskerk and Dirk Paesmans) -
Amsterdam

<http://vimeo.com/89343206>

untitled-game.org

GLITCH





```

import ddf.minim.*;
import ddf.minim.ugens.*;

Minim minim;
AudioOutput out;

boolean sketchFullScreen()
{return true;}

void setup()
{size(displayWidth, displayHeight, P3D);
 minim = new Minim(this);
 out = minim.getLineOut();}

void draw()
{background(0);
 stroke(255);
 strokeWeight(5);
 random(0);
 for(int i = 0; i < out.bufferSize() - 1; i++){
  frameRate(30); float p = random (500);
  strokeWeight(0.1);
  noFill();
  ellipse(width/2,height/2,out.right.get(i)*2000,out.right.get(i+1)*2000);}}

void keyPressed()
{
 if ( key == 'a' ) out.playNote(0,5,250);
 if ( key == 'b' ) out.playNote(0,2,5,253);
 if ( key == 'c' ) out.playNote(0,2,5,256);
 if ( key == 'd' ) out.playNote(0,2,5,259);
 if ( key == 'e' ) out.playNote(0,5,262);
 if ( key == 'f' ) out.playNote(0,2,5,265);
 if ( key == 'g' ) out.playNote(0,2,5,268);
 if ( key == 'h' ) out.playNote(0,2,5,271);
 if ( key == 'i' ) out.playNote(0,5,274);
 if ( key == 'j' ) out.playNote(0,3,277);
 if ( key == 'k' ) out.playNote(0,2,5,280);
 if ( key == 'l' ) out.playNote(0,2,5,283);
 if ( key == 'm' ) out.playNote(0,2,5,286);
 if ( key == 'n' ) out.playNote(0,2,5,289);
 if ( key == 'o' ) out.playNote(0,5,292);
 if ( key == 'p' ) out.playNote(0,2,5,295);
 if ( key == 'q' ) out.playNote(0,2,5,298);
 if ( key == 'r' ) out.playNote(0,2,5,301);
 if ( key == 's' ) out.playNote(0,2,5,304);
 if ( key == 't' ) out.playNote(0,2,5,307);
 if ( key == 'u' ) out.playNote(0,5,310);
 if ( key == 'v' ) out.playNote(0,2,5,313);
 if ( key == 'w' ) out.playNote(0,2,5,316);
 if ( key == 'x' ) out.playNote(0,2,5,319);
 if ( key == 'y' ) out.playNote(0,3,322);
 if ( key == 'z' ) out.playNote(0,2,5,325);
 if ( key == ' ' ) out.playNote(0,2,5,80);
 if ( key == 'à' ) out.playNote(0,5,328);
 if ( key == 'è' ) out.playNote(0,5,331);
 if ( key == 'ì' ) out.playNote(0,5,334);
 if ( key == 'ò' ) out.playNote(0,5,337);
 if ( key == 'ù' ) out.playNote(0,5,340);
 if ( key == '.' ) out.playNote(0,2,5,440);
 if ( key == ',' ) out.playNote(0,2,5,399);
}

```

```

import ddf.minim.*;
import ddf.minim.ugens.*;

```

```
void setup()
```

```
void draw()
```

```

noFill(0);
ellipse width/2,height/2,out.right.get(i)*2000,out.right.get(i+1)*2000);}}

```

```

void keyPressed()
{
 if ( key == 'a' ) out.playNote(0,5,250);
}

```

2012

ALVA NOTO

Carsten Nicolai (Chemnitz/ Karl-Marx-Stadt, 1965)

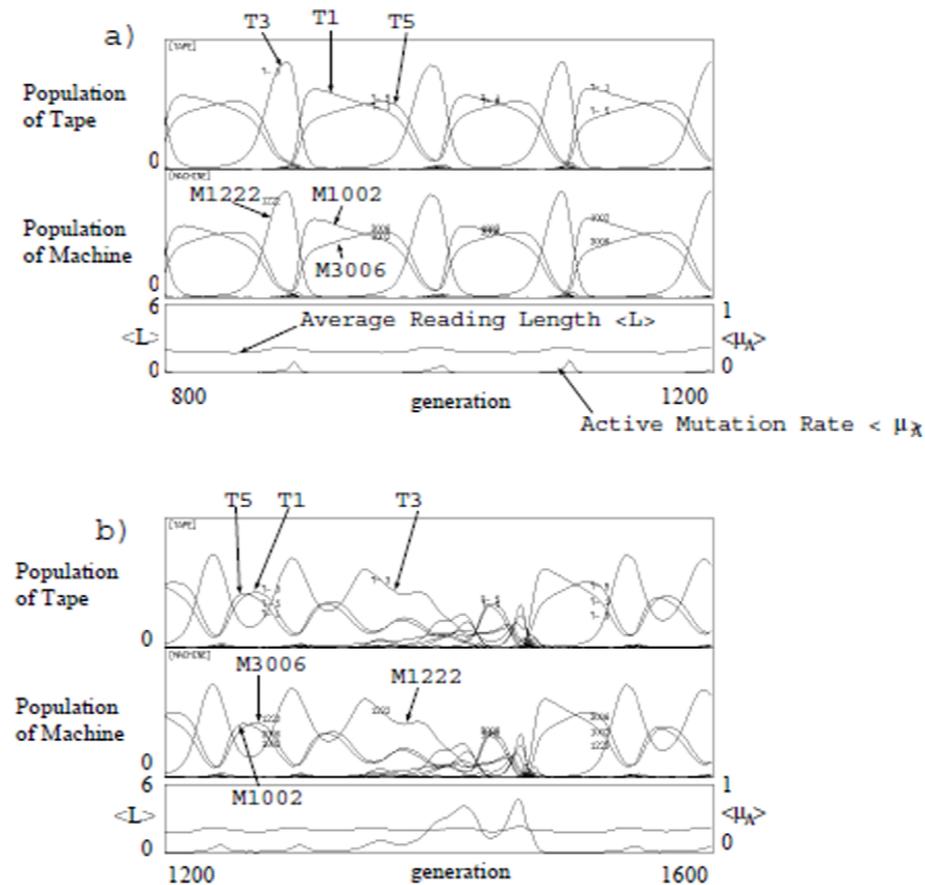
<http://www.raster-noton.net/>

1996

TAKASHI IKEGAMI,
TAKASHI HASHIMOTO
Active Mutation in Self-reproducing Networks of Machines and Tapes

ERRORE e MUTAZIONE

Graduale trasformazione del suono quando è copiato costantemente.
La de-composizione e ri-composizione della fonte musicale causa errori e risultati di mutazione auto-generata.
Applicando la regola ad un sistema cibernetico si descrive la formazione di nuovi pattern nella fase di loop.



1969

ALVIN LUCIER
I am sitting in a room

2012

ALVA NOTO

Carsten Nicolai (Chemnitz/ Karl-Marx-Stadt, 1965)

<http://www.raster-noton.net/>

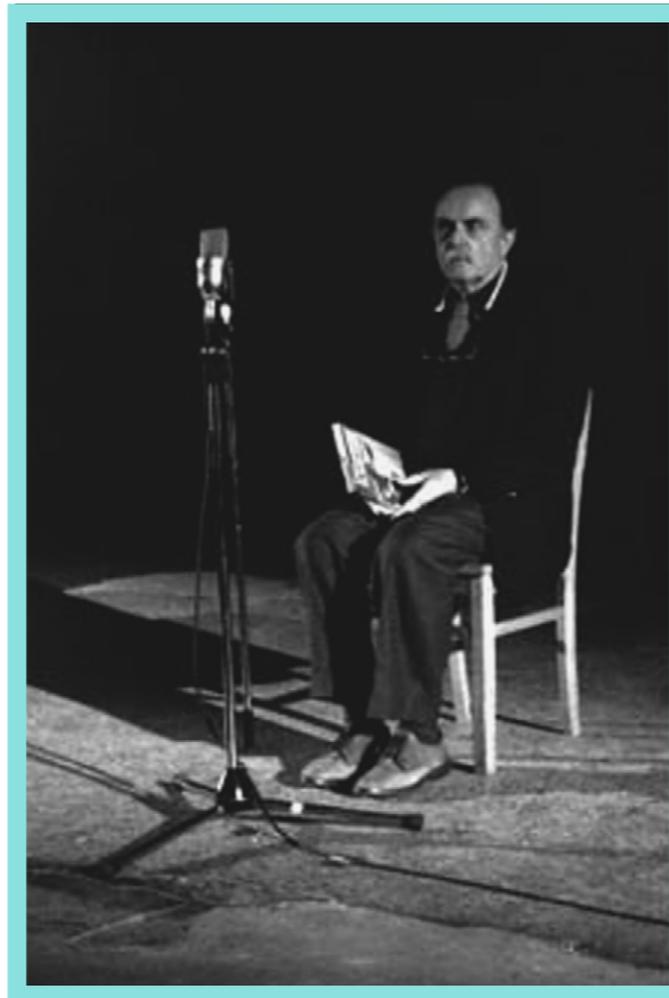
1969

ALVIN LUCIER

I am sitting in a room

ERRORE e MUTAZIONE

"Io sono seduto in una stanza diversa da quella in cui vi trovate voi adesso. Sto registrando il suono della mia voce che parla e poi lo riprodurrò più volte all'interno della stanza, fino a quando le frequenze di risonanza della stanza si rinforzeranno a tal punto che qualunque sembianza del mio discorso, a eccezione forse del ritmo, andrà distrutta. Ciò che sentirete allora saranno le naturali frequenze di risonanza della stanza articolate dal discorso. Ritengo questa attività non tanto una dimostrazione di un fatto fisico, quanto piuttosto un modo per annullare ogni irregolarità presente nel mio discorso."



https://www.youtube.com/watch?v=TSR2LSuzP_M

1893

ERIK SATIE

Vexations - la musica d'arredo

**PAVIMENTO PIASTRELLATO ACUSTICO
TAPPEZZERIA IN FERRO BATTUTO**

La musica d'arredo ha l'unico scopo di creare vibrazioni, ha lo stesso scopo della luce e del calore: una comodità in ogni forma.

OGGETTI D'USO MUSICALE -
NON OPERE DA INTERPRETARE

CONTINUE A PARLARE!
CAMMINATE IN GIRO!
NON ASCOLTATE

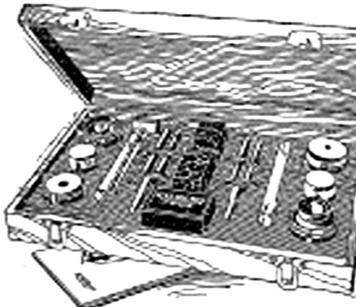
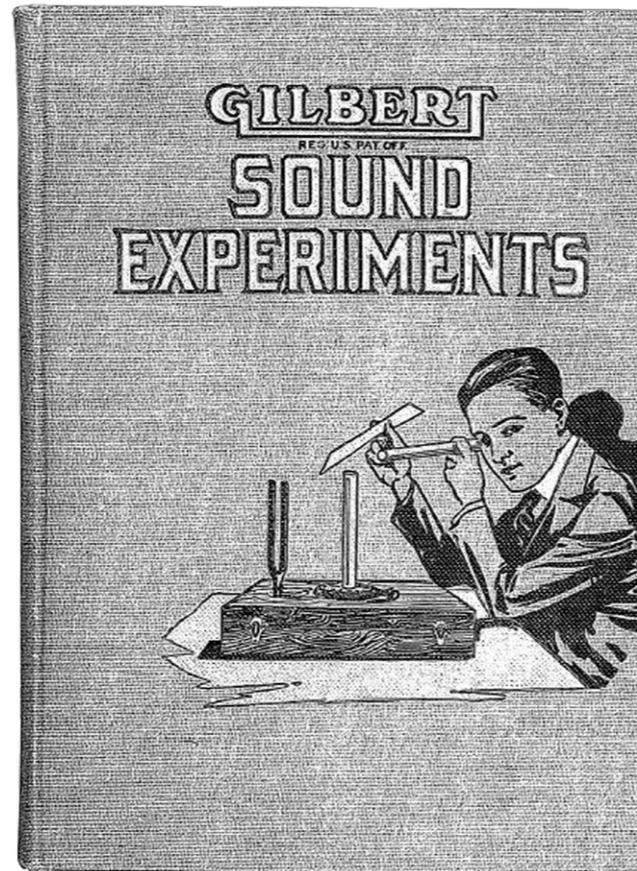


Tate Gallery

www.youtube.com/watch?v=dBhjGidL5cM

1909

ALFRED C. GILBERT
Gilbert Sound Experiments -
A new and fascinating play for boys



WHAT IS SOUND?

Do you know that hearing is just feeling with the ear? That in reality, the thing we call sound, which we think of as a noise or as a musical note, is just an impression on the brain? Very few boys know this, and if you would like to be one of the few that do, you surely want an outfit of

**Gilbert
Sound Experiments**

With one of these outfits you can find out just what sound is—how it is produced—why some pianos sound better than others—why a violin produces a musical tone, and many other things, including a number of startling table rapping tricks with which you can astonish your friends. A big book of instructions tells you how to perform every experiment. Get one of these outfits today. The best toy dealer in your town should have it; if not, write us and we'll tell you where you can get it.

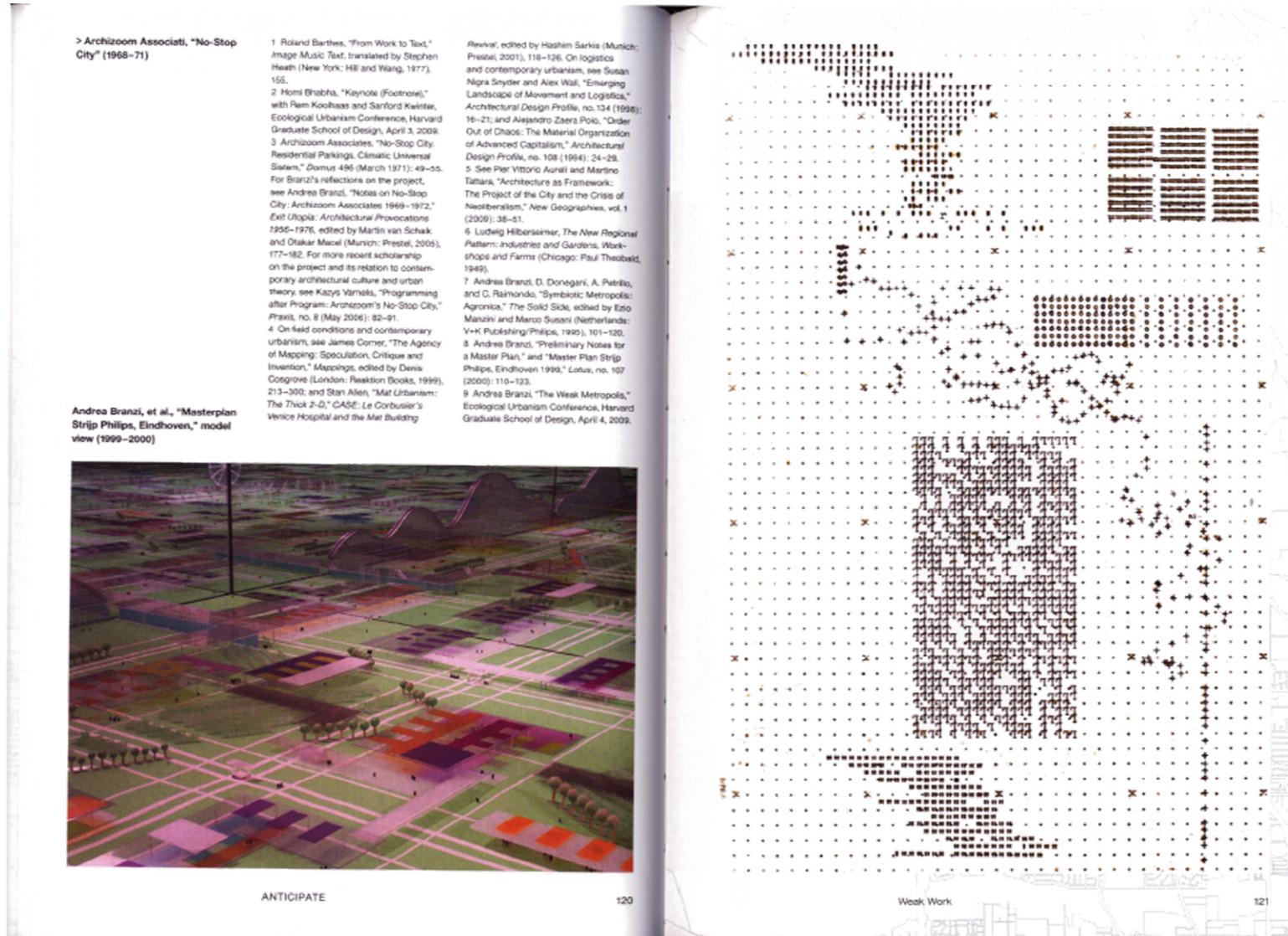
THE A. C. GILBERT COMPANY
512 BLATCHLEY AVE. NEW HAVEN, CONN.
In Canada: The A. C. Gilbert-Messier Co., Limited, Toronto
In England: The A. C. Gilbert Co., 125 High Holborn, London, W. C. 2

INDEX

- * "To" and "Fro" Motion
- * Origin of sound
- * Transmission of sound
- * Intensity, Pitch, Quality
- * Reflection, Refraction, Interference and Resonance
- * How we hear sound
- * Modern inventions

1971

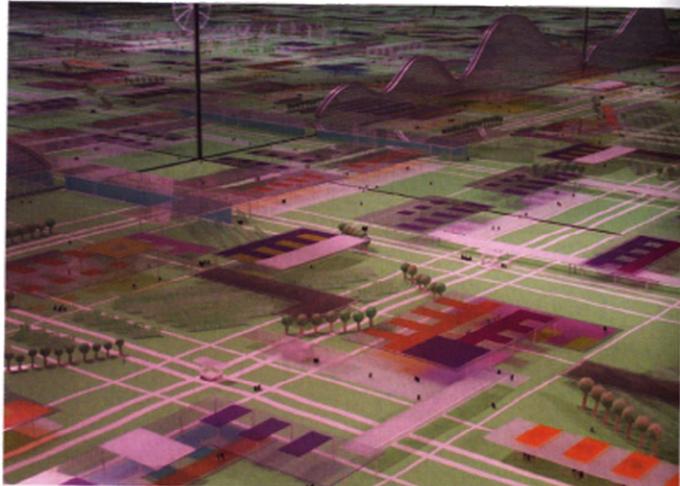
ANDREA BRANZI - ARCHIZOOM
The Weak Metropolis



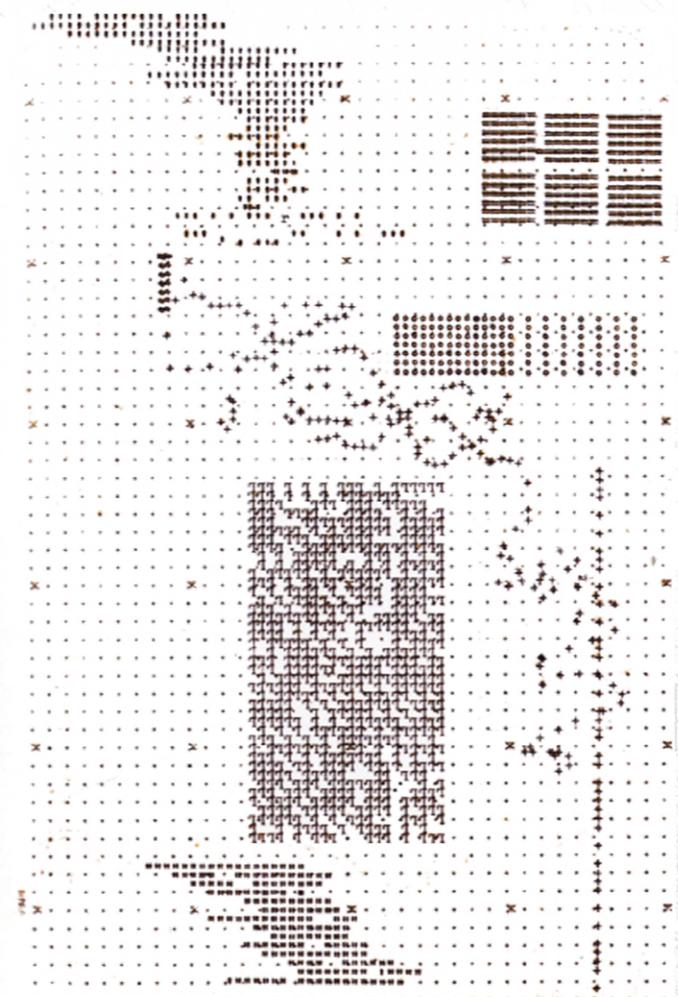
> Archizoom Associati, "No-Stop City" (1968-71)

- 1 Roland Barthes, "From Work to Text," *Image Music Text*, translated by Stephen Heath (New York: Hill and Wang, 1977), 155.
- 2 Homi Bhabha, "Keynote (Footnote)," with Rem Koolhaas and Sanford Kwinter, *Ecological Urbanism Conference*, Harvard Graduate School of Design, April 3, 2009.
- 3 Archizoom Associati, "No-Stop City: Residential Parkings," *Cinematic Universal System*, Domus 486 (March 1971): 49-55. For Branzi's reflections on the project, see Andrea Branzi, "Notes on No-Stop City: Archizoom Associates 1969-1972," *Exit Utopia: Architectural Provocations 1956-1976*, edited by Martin van Schaik and Otakar Macel (Munich: Prestel, 2005), 177-182. For more recent scholarship on the project and its relation to contemporary architectural culture and urban theory, see Kazys Varnelis, "Programming after Program: Archizoom's No-Stop City," *Frank*, no. 8 (May 2006): 82-91.
- 4 On field conditions and contemporary urbanism, see James Corner, "The Agency of Mapping: Speculation, Critique and Invention," *Mappings*, edited by Denis Cosgrove (London: Reaktion Books, 1999), 213-300; and Stan Allen, "Mat Urbanism: The Thick 2-D," *CASE: Le Corbusier's Venice Hospital and the Mat Building Revival*, edited by Hashim Sarkis (Munich: Prestel, 2001), 118-126. On logistics and contemporary urbanism, see Susan Nigra Snyder and Alex Wai, "Emerging Landscape of Movement and Logistics," *Architectural Design Profile*, no. 134 (1998): 16-21; and Alejandro Zaera Polo, "Order Out of Chaos: The Material Organization of Advanced Capitalism," *Architectural Design Profile*, no. 108 (1994): 24-29.
- 5 See Pier Vittorio Aulenti and Martino Tullias, "Architecture as Framework: The Project of the City and the Crisis of Neoliberalism," *New Geographies*, vol. 1 (2009): 38-61.
- 6 Ludwig Hilberseimer, *The New Regional Pattern: Industries and Gardens, Workshops and Farms* (Chicago: Paul Theobald, 1949).
- 7 Andrea Branzi, D. Doregani, A. Petillo, and C. Raimondo, "Symbiotic Metropolis: Agrionica," *The Solid Side*, edited by Edo Manzi and Marco Susani (Netherlands: V+K Publishing/Philips, 1995), 101-120.
- 8 Andrea Branzi, "Preliminary Notes for a Master Plan," and "Master Plan Strip Philips, Eindhoven 1999," *Lotus*, no. 107 (2000): 110-123.
- 9 Andrea Branzi, "The Weak Metropolis," *Ecological Urbanism Conference*, Harvard Graduate School of Design, April 4, 2009.

Andrea Branzi, et al., "Masterplan Strip Philips, Eindhoven," model view (1999-2000)



ANTICIPATE



Weak Work

<http://vimeo.com/11699919>

1967

JACQUES BERTIN La sémiologie graphique - Paris



LA GRAPHIQUE DANS LA CIVILISATION DE L'INFORMATIQUE

L'imagination n'est plus nécessaire pour voir l'homme faire apparaître sur l'écran de visualisation, sous forme numérique ou sous la forme de réseaux, de diagrammes ou de cartes tous les éléments de l'hypothèse qu'il souhaite vérifier, et procéder aux expériences nécessaires. Grâce à l'écran, il n'est plus besoin d'anticipation pour voir la graphique occuper une place de choix dans les domaines les plus variés : architecture, constructions, médecine, biologie, pédagogie, météorologie, électronique, espace, et bientôt dans l'administration, l'urbanisme et les sciences humaines où elle fournit une base lumineuse aux recherches « interdisciplinaires » et contribue ainsi aux profondes mutations que ces recherches préparent.

Il n'existe pas de domaine où l'information ne prolifère, où sa réduction logique ne soit l'objectif à atteindre et où l'analyse matricielle ne s'applique. Et il ne semble pas non plus qu'il y ait de systèmes de perception plus puissant que la vision. On comprend ainsi que la visualisation et ses lois soient l'objet de recherches dont le premier résultat est la mise en évidence de deux « langages » logiques et opérationnels indépendants : la mathématique et la graphique, qui ont chacun leurs propriétés mais aussi leurs lois impératives et entre lesquels se partage désormais le traitement de l'information.

Costruire una rappresentazione grafica consiste in una trascrizione di qualsiasi informazione attraverso il rispetto di ogni variabile visuale, in accordo con la sua IMMAGINE NATURALE, o nella maniera per cui non serva interpretazione.

IL REDATTORE DEVE ANTEPORRE LA CONOSCENZA DELLA STRUTTURA X,Y,Z DELL'IMMAGINE NATURALE ALL'USO DELLE VARIABILI VISUALI

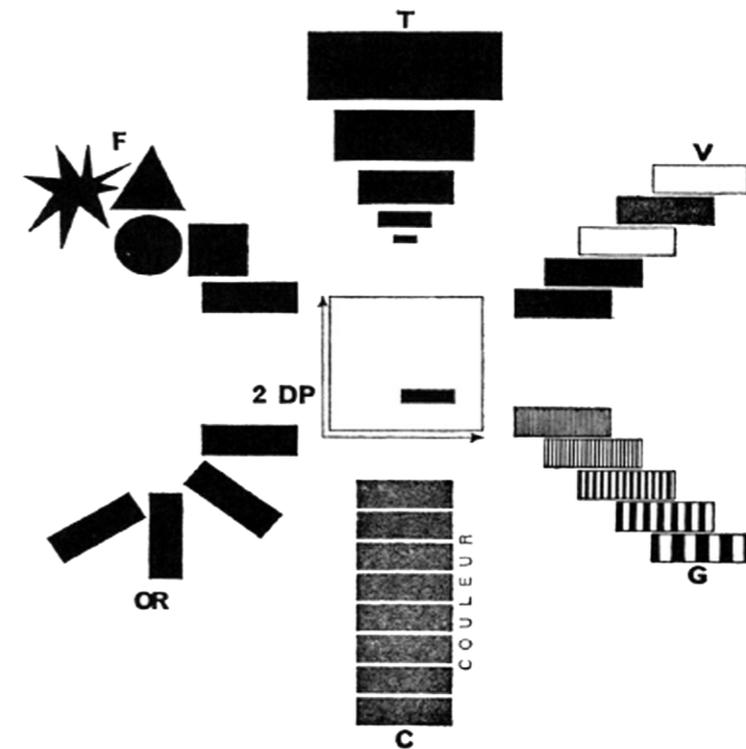
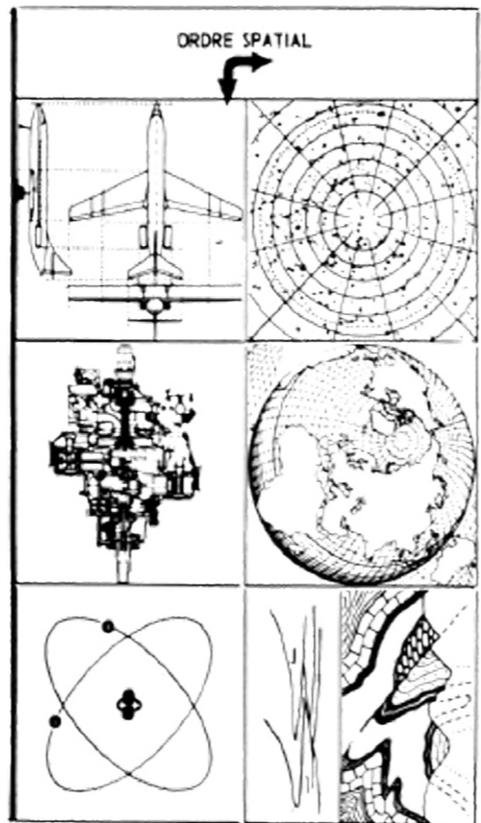


Fig. 8. Les huit variables visuelles.

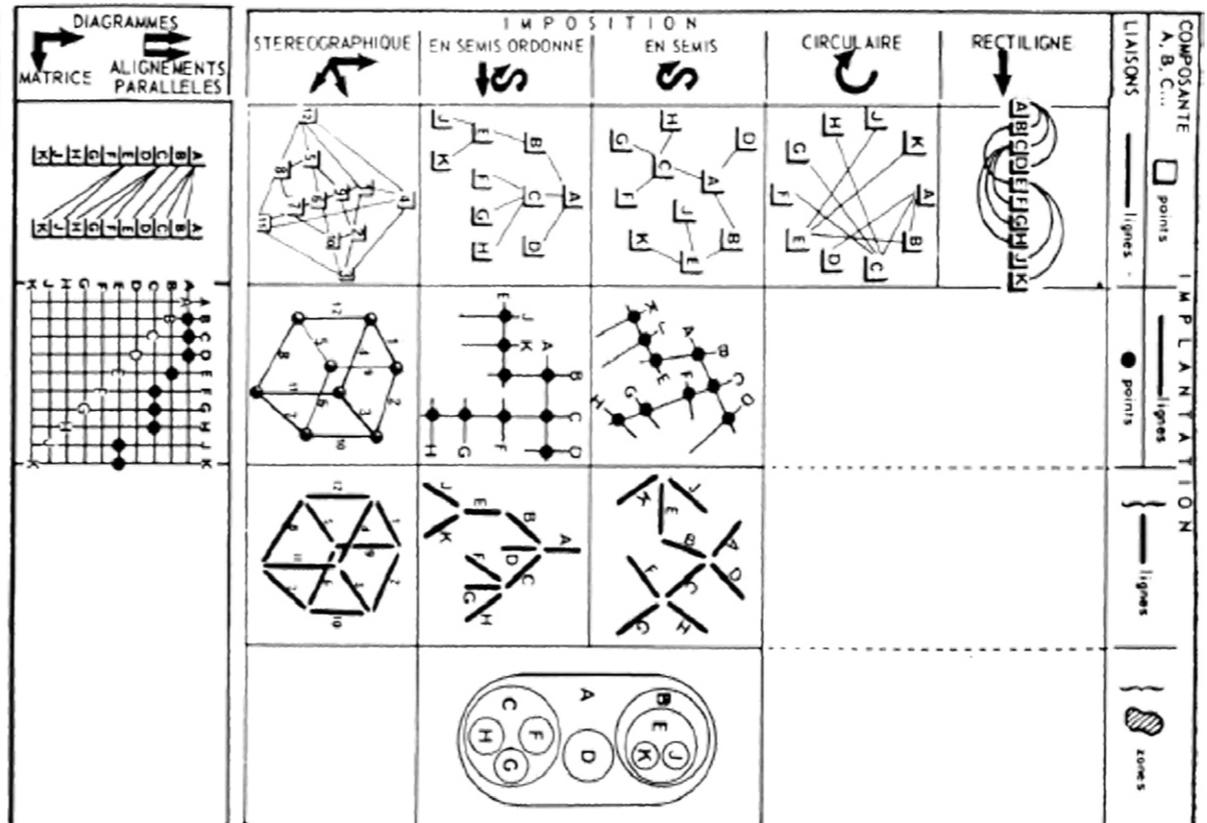
NIVEAUX D'ORGANISATION DES VARIABLES VISUELLES	
DIMENSIONS DU PLAN	≡ ≠ ○ ⊙
TAILLE	≡ ≠ ○ ⊙
VALEUR	≡ ≠ ○ ⊙
GRAIN	≡ ≠ ○ ⊙
COULEUR	≡ ≠ ○ ⊙
ORIENTATION	≡ ≠ ○ ⊙
FORME	≡ ≠ ○ ⊙

Fig. 9. Propriétés significatives des variables visuelles.

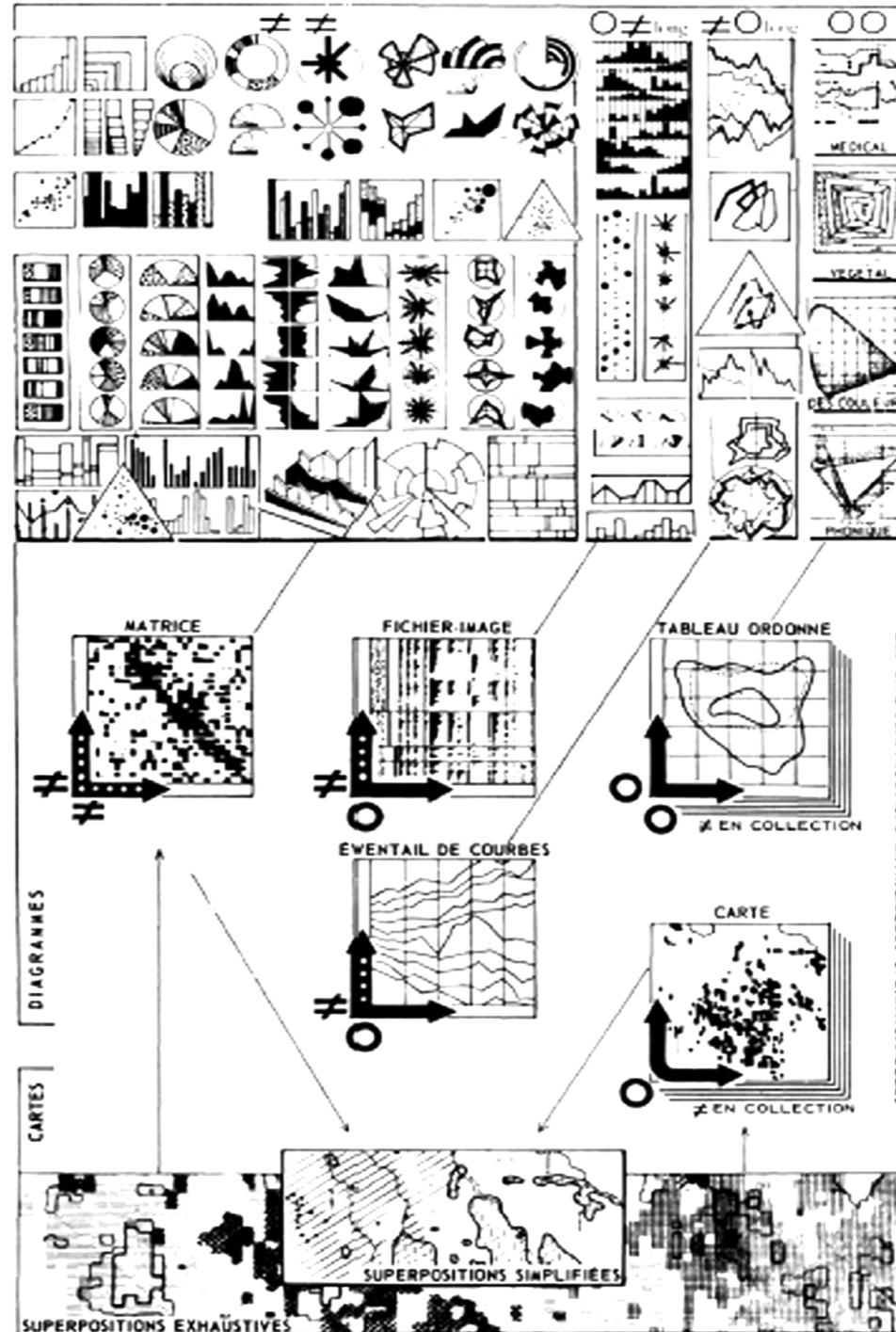
CARTES (réseaux ordonnés)

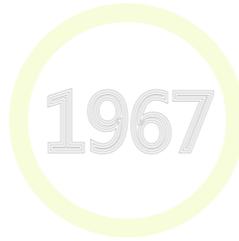


RESEAUX (ordonnables)



Diagrammes : constructions graphiques des RELATIONS ENTRE PLUSIEURS COMPOSANTES





MAPPA

TESTO CHE SEMANTIZZA L'ESPERIENZA DEL TERRITORIO
TRAMITE LA RI-COMBINAZIONE DI STORIA, GEOGRAFIA E
CONNESSIONE ALLO SPAZIO AUMENTATO

TRAITEMENT GRAPHIQUE D'UNE INFORMATION

IMMERSIVE VIRTUAL ENVIRONMENT

NO SPACE - NO TIME

ANATOMY OF A DWELLING

IN THE GEOLOGICAL PRESENT

PATTERN PLAN

TIME SOUND

Joseph Byrd, The Defense of the American Continent From the Viceroy's Invasion

ENTANGLED EARTH
-SCIENCE-ECOLOGY-
-SOCIOLOGY-POWER-

NEW ^BLUE MARBLE^

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    }
  }
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      png "marscy12.png"
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      bump_size 10
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    diffuse 1
    specular 0.2
    roughness .2
  }
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}

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SPHEROIDS

RYTHMS + TIME
SPATIAL ORDER

PHYSICAL COMPUTING

ZONE 4 3 2 1

Bertin Jacques, Lambertagne Robert, Vergnaud Francis. Traitement graphique d'une information: les marches royales de France et de Grande Bretagne (1697-1747). In: Annales. Economies, Sociétés, Civilisations. 22e année, N. 5, 1967, pp. 991-1004.

1966

KENNETH GABURO
Never

Colgate University & the Colgate
University Chorus.
Pezzo per cinque VOCI maschili

NEVER

Composed 1966
by Kenneth Gaburo
Kenneth Gaburo

A handwritten musical score for the piece 'Never' by Kenneth Gaburo. The score is written on multiple staves, showing complex rhythmic patterns and melodic lines. The notation includes various note values, rests, and dynamic markings. The title 'NEVER' is written in large, bold, black letters at the top left. The composer's name 'Kenneth Gaburo' is written in cursive at the top right. The score is densely packed with musical symbols and lines, indicating a highly complex and rhythmic composition.

1962

GERARDO GANDINI
Mutantes I

Pezzo per flauto, clarinetto, percussioni,
piano, violino, viola, violoncello
FORMA MUSICALE

A handwritten musical score for the piece 'Mutantes I' by Gerardo Gandini. The score is written on multiple staves, showing musical notation for various instruments. The notation includes notes, rests, and dynamic markings. The Roman numeral 'IV' is written at the top left of the score. The score is densely packed with musical symbols and lines, indicating a complex and rhythmic composition. The instruments listed in the text above are flute, clarinet, percussion, piano, violin, viola, and cello.

1960

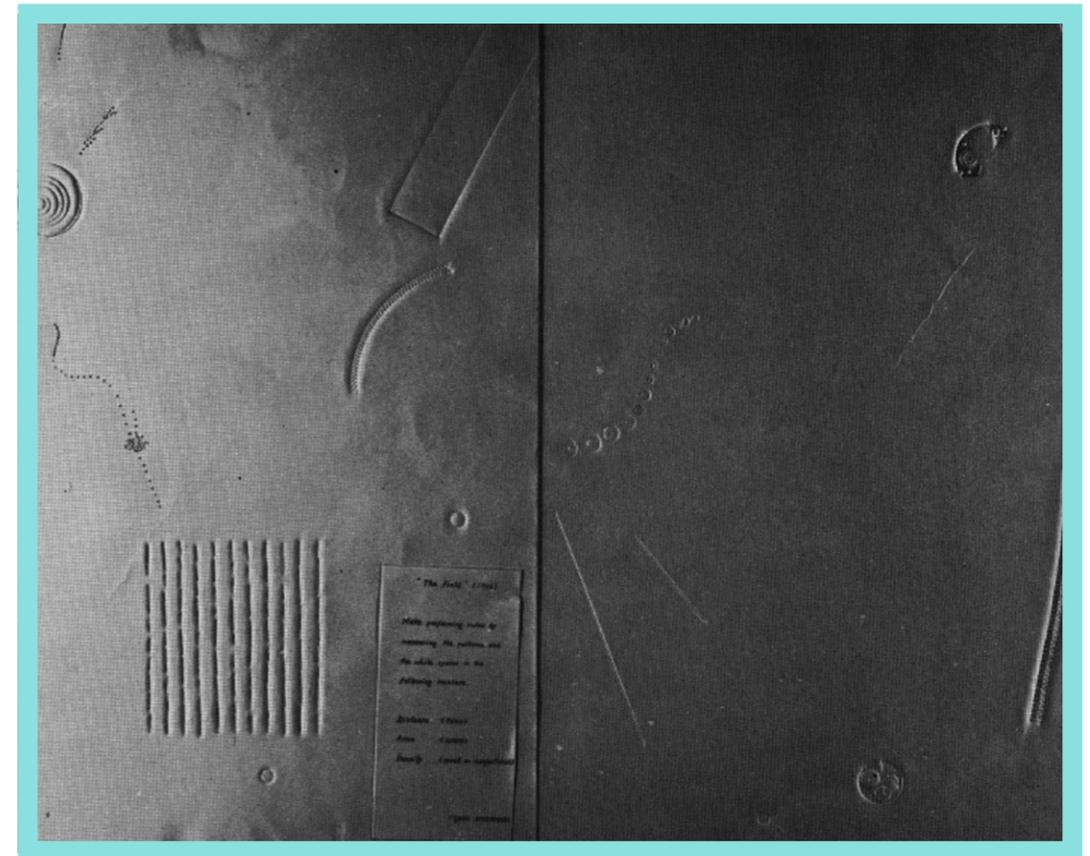
ROMAN HAUBENSTOCK-RAMATI
Mobile for Shakespeare

Pezzo per soprano o mezzo soprano,
 piano, celesta, vibrafono e percussioni
 SUONO COME PROGRESSIONE /
 NOTAZIONE FLUIDA non lineare a celle
 componibili

1966

TOSHI ICHIYANAGI / FLUXUS
The Field

Pezzo per shakuhachi *flauto e orchestra
 IMPROVVISAZIONE /
 sfida l'esecutore a calibrare i propri suoni e
 silenzi su una partitura abbozzata



1977

ATARI 2600



<http://youtu.be/YS-HYWRdb2g>

2004



CROSS-PLATFORM GAME CREATION SYSTEM
IDE * Integrated Development Environment

(mobile devices, web browsers, desktops, and consoles)

2014



```

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<script src="//code.jquery.com/jquery-2.1.1.min.js"></script>

<!-- Load the Sounds of Street View code -->
<script src="js/sosv.min.js"></script>

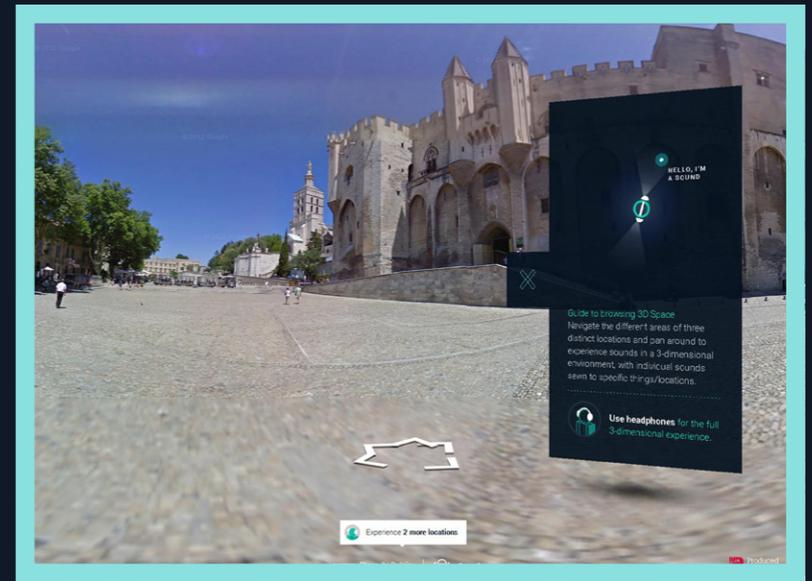
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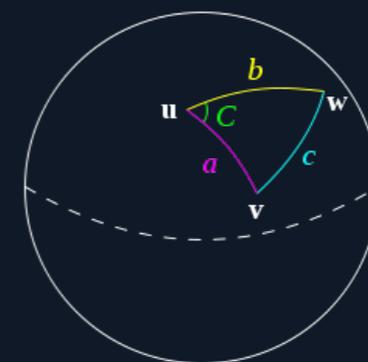
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This is the heading position value where your application will start upon load (ie. which direction the user is facing)



FORMULA DELL'EMISENOVERSO

1979

JOY DIVISION

Unknown Pleasures - Peter Saville

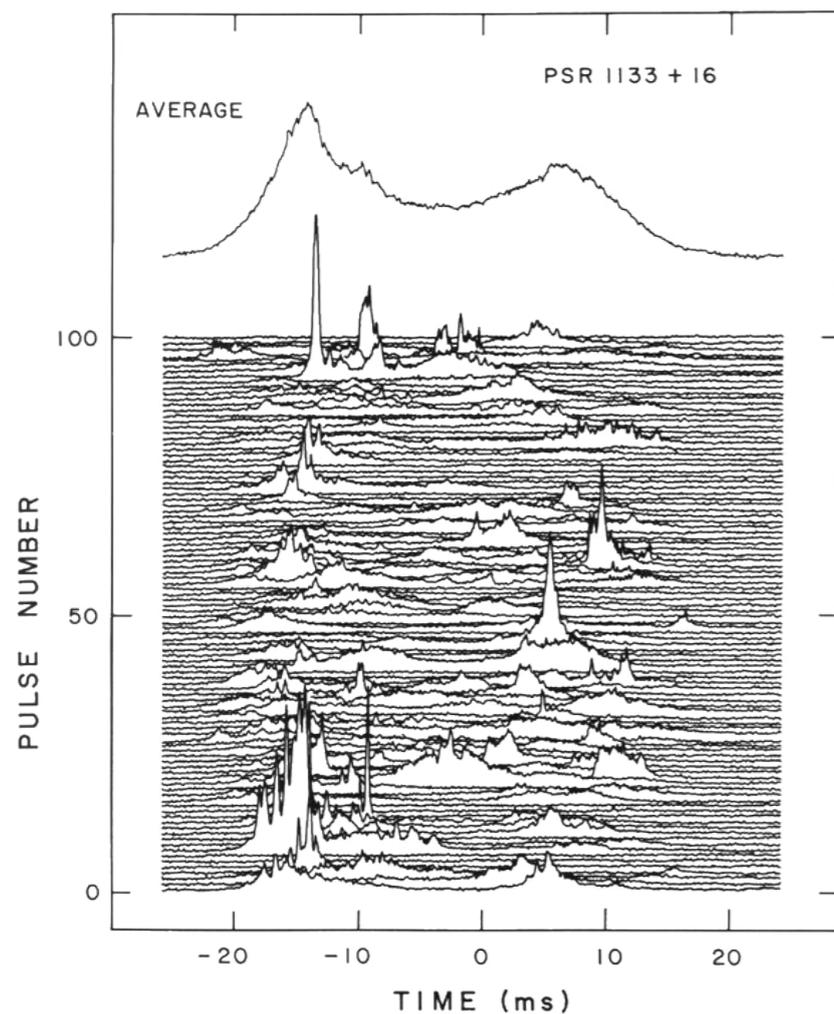
"100 consecutive pulses from the pulsar CP 1919"

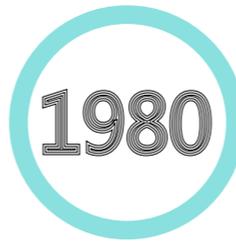
PULSAR pulsating radio star

Neutron star that emits a beam of electromagnetic radiation

PULSAR PSR B1919+21

- ° The pulsar was first discovered in 1967 by Jocelyn Bell Burnell;
- ° The image of its radio pulses first appeared in an American Scientific in 1971;
- ° It's not clear whether the research team that discovered the pulsar created the graph, or if Ostriker (or someone else) just pieced together the data.





ALVIN LUCIER

Music On A Long Thin Wire

Music on a Long Thin Wire



Extend a long metal wire (#1 music wire or equivalent) across a lengthways down a performance space. Affix both ends to the far edges of the tops of tables, or other similar platforms and tighten them with clamps, hanging weights over pulleys, or other tension-creating devices. Route the ends of the wire to the outputs of an amplifier, forming a current-carrying loop. Insert wood, metal, or other resonant bridges under the wire at both ends. Set a large magnet down on the table at one end; adjust the height of the wire so that it passes directly between the poles of the magnet. Attach microphones to the bridges and route them through amplifiers to loudspeakers.

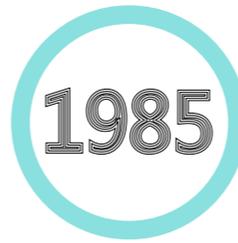
Drive the wire with a sine wave oscillator, causing it to vibrate from the interaction between the current in the wire and the magnetic field across it, in ways determined by the frequency and amplitude of the driving signal and the length, size, weight and tension of the wire.

Pick up the sounds of the vibrating wire with the microphones on the resonant bridges and amplify them for stereo listening through the loudspeakers.

Light the wire so that the modes of vibration are visible to viewers.

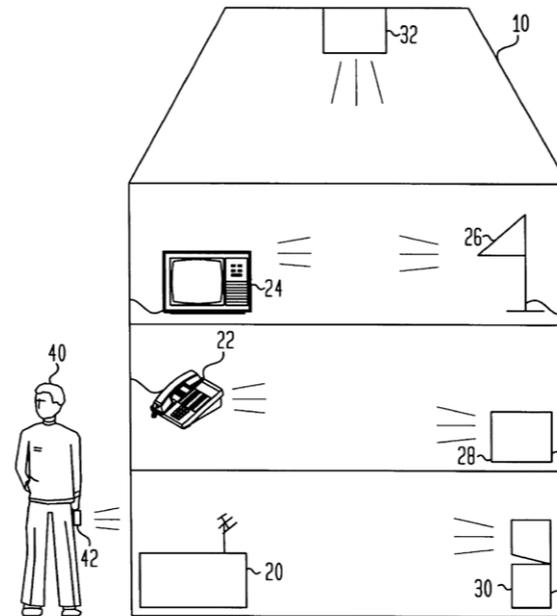
Alvin Lucier

https://www.youtube.com/watch?v=dwE4Jwk_zeI



DENISE SUMIKAWA
Guidelines for the integration of audio cues into
computer user interfaces

EARCON



AUDITORY ICON

EARCON

```
public int addSpeech (String text, String filename)
```

Adds a mapping between a string of text and a sound file. Using this, it is possible to add custom pronunciations for a string of text. After a call to this method, subsequent calls to [speak\(String, int, HashMap\)](#) will play the specified sound resource if it is available, or synthesize the text if it is missing.

Parameters

text The string of text. Example: "south_south_east"
filename The full path to the sound file (for example: "/sdcard/mysounds/hello.wav")

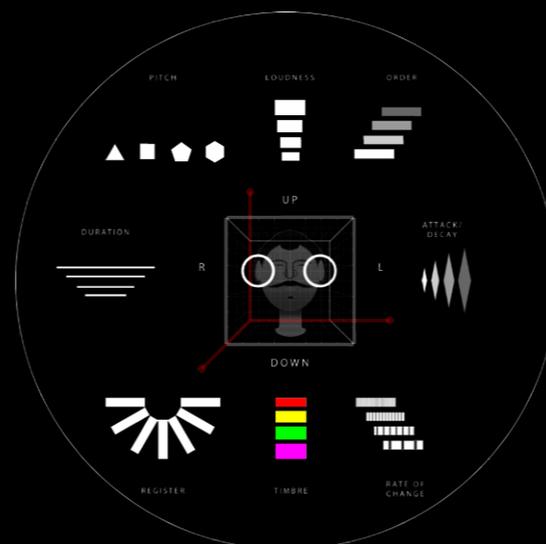
Returns

Code indicating success or failure. See ERROR and SUCCESS



JACQUES BERTIN
La sémiologie graphique - Paris

SOUND OF THINGS È UN'ESPERIENZA INTERDISCIPLINARE DI RAPPRESENTAZIONE DEL SUONO E DI DATA VISUALIZATION ATTRAVERSO TECNOLOGIE DI SPAZIALIZZAZIONE DEL SUONO, REALTÀ AUMENTATA, SONIFICAZIONE, MUSIFICAZIONE.



TRASFORMARE LE INFORMAZIONI IN PATRIMONIO CULTURALE

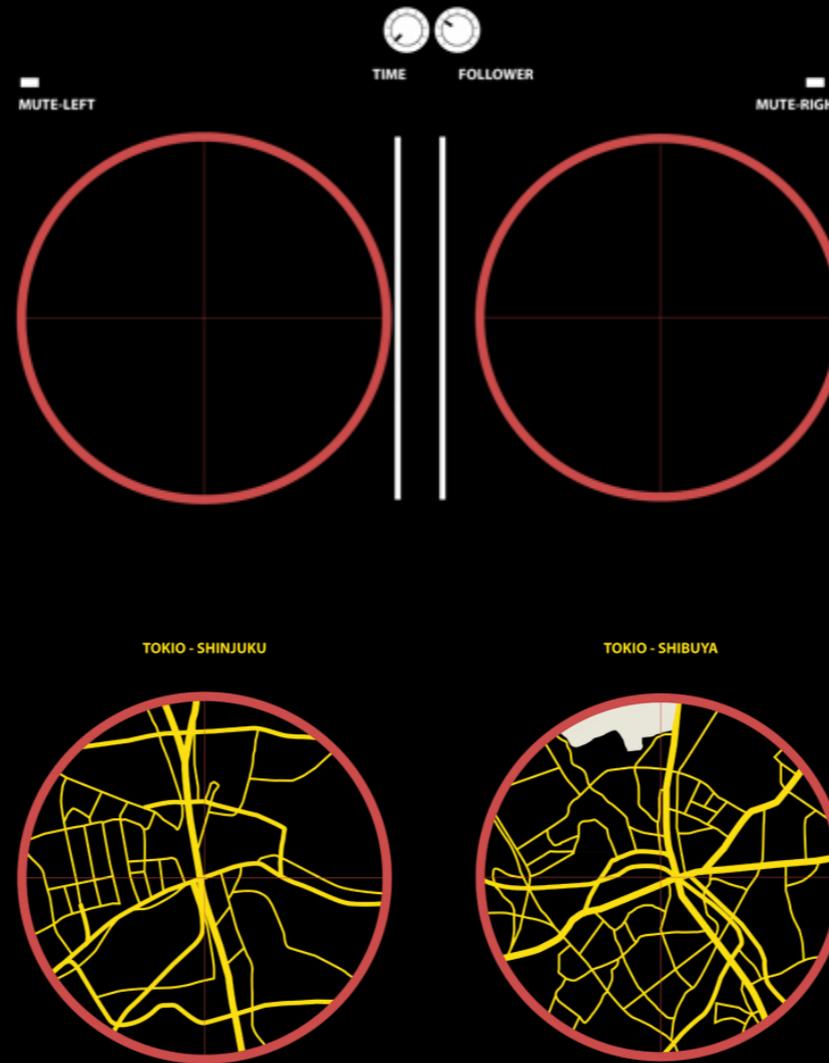
VISUALIZZAZIONE DEI DATI DA "DIGITAL THINGS":

QUANTIFICARE e QUALIFICARE i dati > INTERPRETAZIONE dell'ascoltatore.

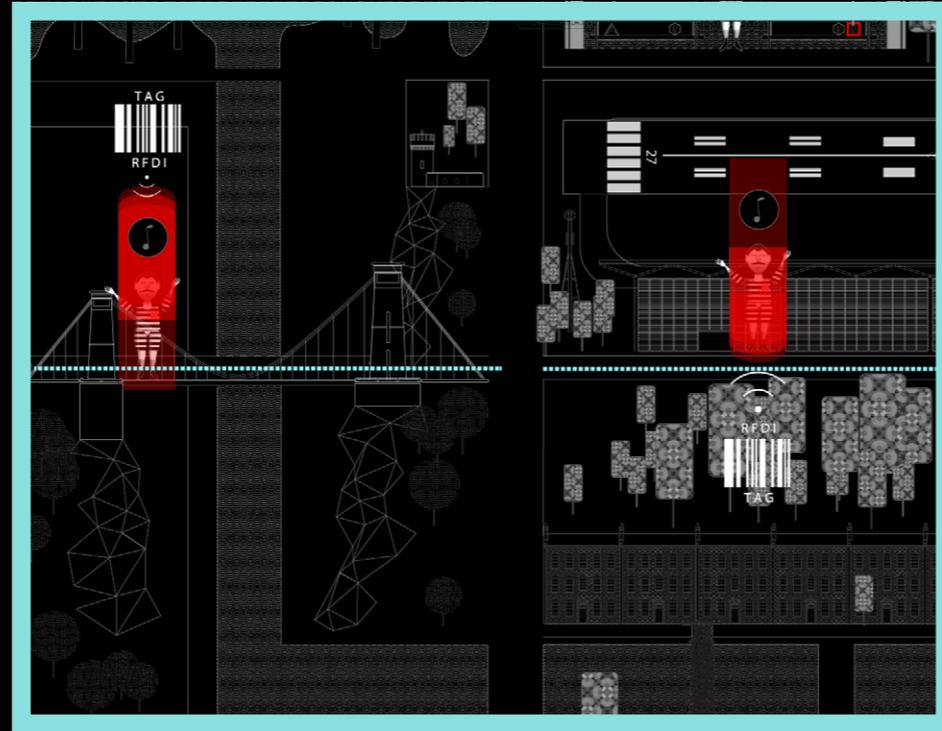
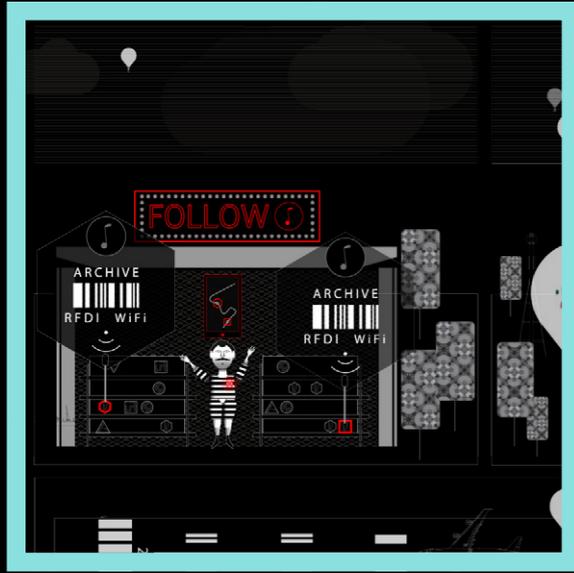
SONIFY GEO-LOCATED TWEETS

La proliferazione dei mobile social networks ha il potenziale di trasformare i modi di interazione nello spazio pubblico, costruendo nuove pratiche sociali e spaziali. Comprendere lo SPAZIO e il TEMPO nelle attività che coinvolgono il rapporto con la Rete, significa descrivere le socio-dinamiche del distretto urbano e dare soluzioni nel campo dell'urban computing.

2013



http://www.soundofthings.org/VID/SonifyTweet_1_1.mp4



SoT RETAIL, SMART COMMERCIAL BUILDING.

OBJECT ID: Implementing the Internet of Things in Retail has many advantages: with RFID-equipped items and smart shelves that track the present items in real time, a retailer can optimize many applications, like automatically checking of goods receipt, real time monitoring of stocks, tracking out-of-stocks or the detection of shoplifting. In the shop, IoT offers many applications like guidance in the shop according to a preselected shopping list, fast payment solutions like automatically check-out using biometrics, detection of potential allergen in a given product, personalized marketing if accepted, verification of the cool chain, etc. By tagging items and containers, greater transparency can be gained about the status of the shop floor, the location and disposition of lots and the status of production machines. In this environment a smart shopping cart plays the central role. This cart is communicating with the customer's handset using NFC and is also linked remotely to the store back office system using WiFi. The cart has proximity antennas to read smart tags, and a display to communicate with the customer. When customers enter the store, they can log-in into the loyalty system of the store which stores a shopping list for them that they may have prepared at home, using the store's website. The cart's screen also provides orientation about the location of the desired products.

AUDITORY DISPLAY FUNCTION: alarms, alerts, warnings

CLASS OF INTERACTION: active sound > intentional active sounds, full sonification

MODEL BASED: sound recording data, general acoustical data, abstract data

DATA PROPERTIES AND NOTES: quantitative (numerical), qualitative (verbal)

SoT AUTOMOTIVE, VEHICLE-TO-VEHICLE and VEHICLE-TO-INFRASTRUCTURE COMMUNICATION

OBJECT ID: Vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications with Dedicated Short Range Communication (DSRC), will significantly advance Intelligent Transportation Systems (ITS) applications such as vehicle safety services and traffic management and will be fully integrated in the IoT infrastructure. The vehicle itself is also considered as a 'thing', enabling it to make automatic emergency calls or breakdown calls when appropriate, collecting as much data as possible from surrounding 'things', such as the vehicle parts itself, the supporting transportation infrastructure (road/ rail/ etc.), other vehicles in the vicinity, sensors in the load it is carrying (humans, goods, etc).

AUDITORY DISPLAY FUNCTION: alarms, alerts, warnings, art, entertainment, leisure

CLASS OF INTERACTION: active sound > intentional active sounds/ passive sound > external source, full sonification

MODEL BASED: sound recording data, general acoustical data, abstract data

DATA PROPERTIES AND NOTES: quantitative (numerical), qualitative (verbal)

SoT TOURISM, LEISURE, ART, ENTERTAINMENT, SPORT.

OBJECT ID: Ad-hoc news gathering using the IoT, based on location. In a future scenario, it can be envisaged that news gathering could happen by querying the internet of things, to see which multi-media-capable devices are present at a certain location, and sending them a offer to collect multimedia footage about a certain event. Near field communication tags can be attached to posters and provide more information by connecting the reader to an URI address, which provides more information related to the poster (for mobile proximity marketing, mobile tourism or mobile loyalty programs).

AUDITORY DISPLAY FUNCTION: tourism/guide > art, entertainment, leisure, sport

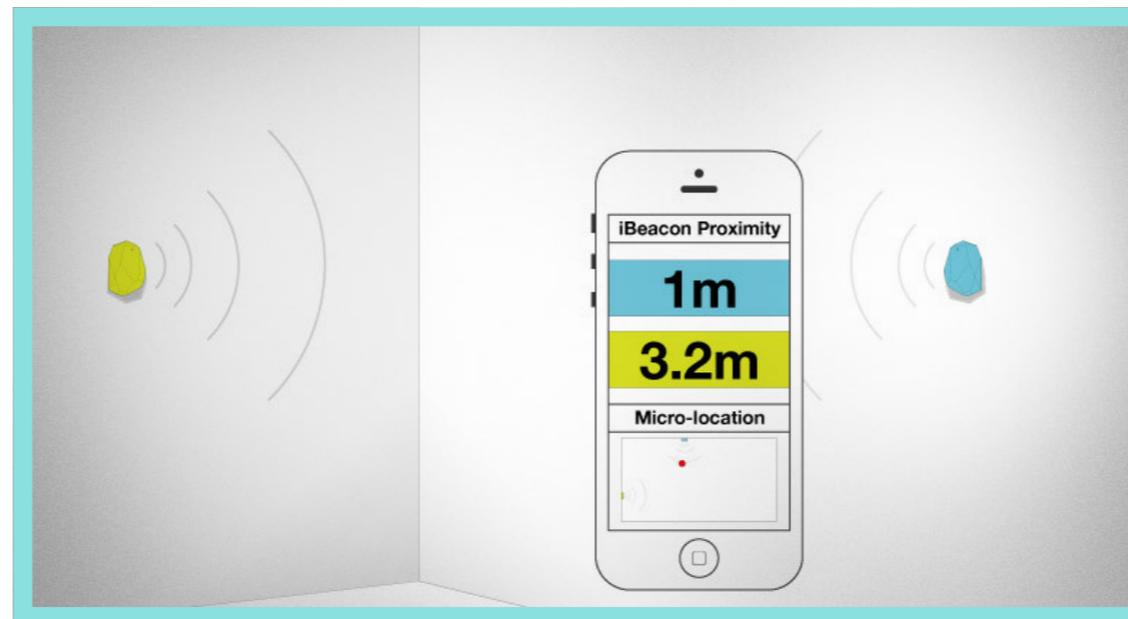
CLASS OF INTERACTION: active sound > intentional active sounds/ passive sound > external source, full sonification

MODEL BASED: sound recording data, general acoustical data

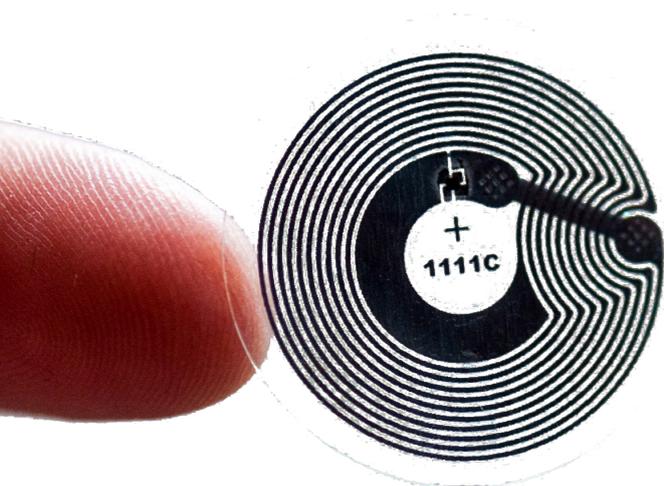
DATA PROPERTIES AND NOTES: qualitative (verbal)

2014

iBEACON
Bluetooth low energy - BLE



Indoor positioning system - APPLE inc



NEAR FIELD COMMUNICATION (NFC)

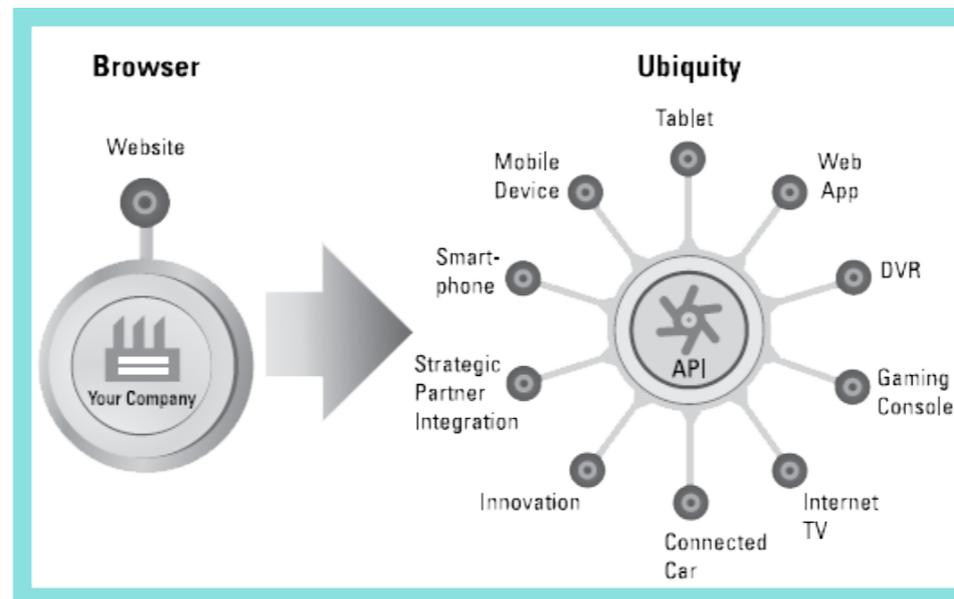
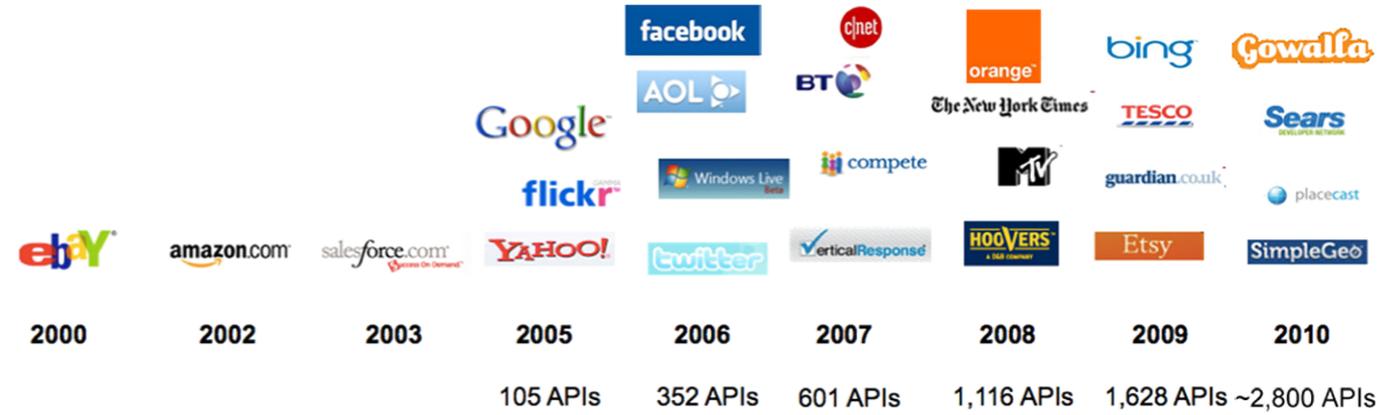
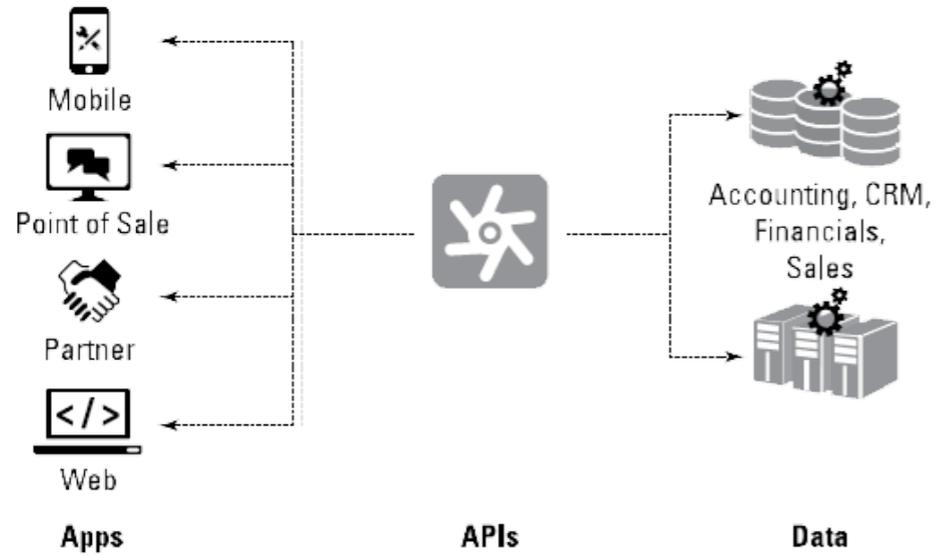
Induzione elettromagnetica

La tecnologia NFC opera alla frequenza di 13,56 MHz e può raggiungere una velocità di trasmissione massima di 424 kbit/s.

2000

EBAY APPLICATION PROGRAM INTERFACE (API)

Do you wear a Fitbit or Nike FuelBand? Have you ever used a Twitter or Facebook app or bought anything online? Do you use Google Analytics? If you answered "yes" to any of these, you're already benefiting from APIs!





FOURSQUARE FOR DEVELOPERS

id A unique string identifier for this venue.

name The best known name for this venue.

contact An object containing none, some, or all of **twitter**, **phone**, and **formattedPhone**. All are strings.

location An object containing none, some, or all of **address** (street address), **crossStreet**, **city**, **state**, **postalCode**, **country**, **lat**, **lng**, and **distance**. All fields are strings, except for **lat**, **lng**, and **distance**.

categories An array, possibly empty, of **categories** that have been applied to this venue. One of the categories will have a field **primary** indicating that it is the primary category for the venue.

[...]

stats Contains **checkinsCount** (total checkins ever here), **usersCount** (total users who have ever checked in here), and **tipCount** (number of tips here).

url URL of the venue's website, typically provided by the venue manager.

hours Contains the **hours** during the week that the venue is open along with any named hours segments in a human-readable format.

popular Optional Contains the **hours** during the week when people usually go to the venue.

[...]

rating Numerical rating of the venue (0 through 10). Returned as part of an explore result, excluded in search results. Not all venues will have a rating.

specials If $v \geq 20120121$, a dictionary containing **count** and **items** array of **specials** at this venue. Otherwise, an array, possibly empty, of **specials** at this venue.

hereNow Information about who is here now. If present, there is always a **count**, the number of people here. If viewing details and there is a logged-in user, there is also a **groups** field with **friends** and **others** as **types**.

storeId The manager's internal identifier for the venue.

description Description of the venue provided by venue owner.

createdAt Seconds since epoch when the venue was created.

tips Contains the total count of tips and groups with friends and others as groupTypes. Groups may change over time.

[...]

tags An array of string tags applied to this venue.

beenHere Contains count of the number of times the acting user has been here. Absent if there is no acting user.

shortUrl A short URL for this venue.

canonicalUrl The canonical URL for this venue.

specialsNearby An array of **specials** near this venue.

photos A **count** and **groups** of **photos** for this venue. Group types are **checkin** and **venue**.

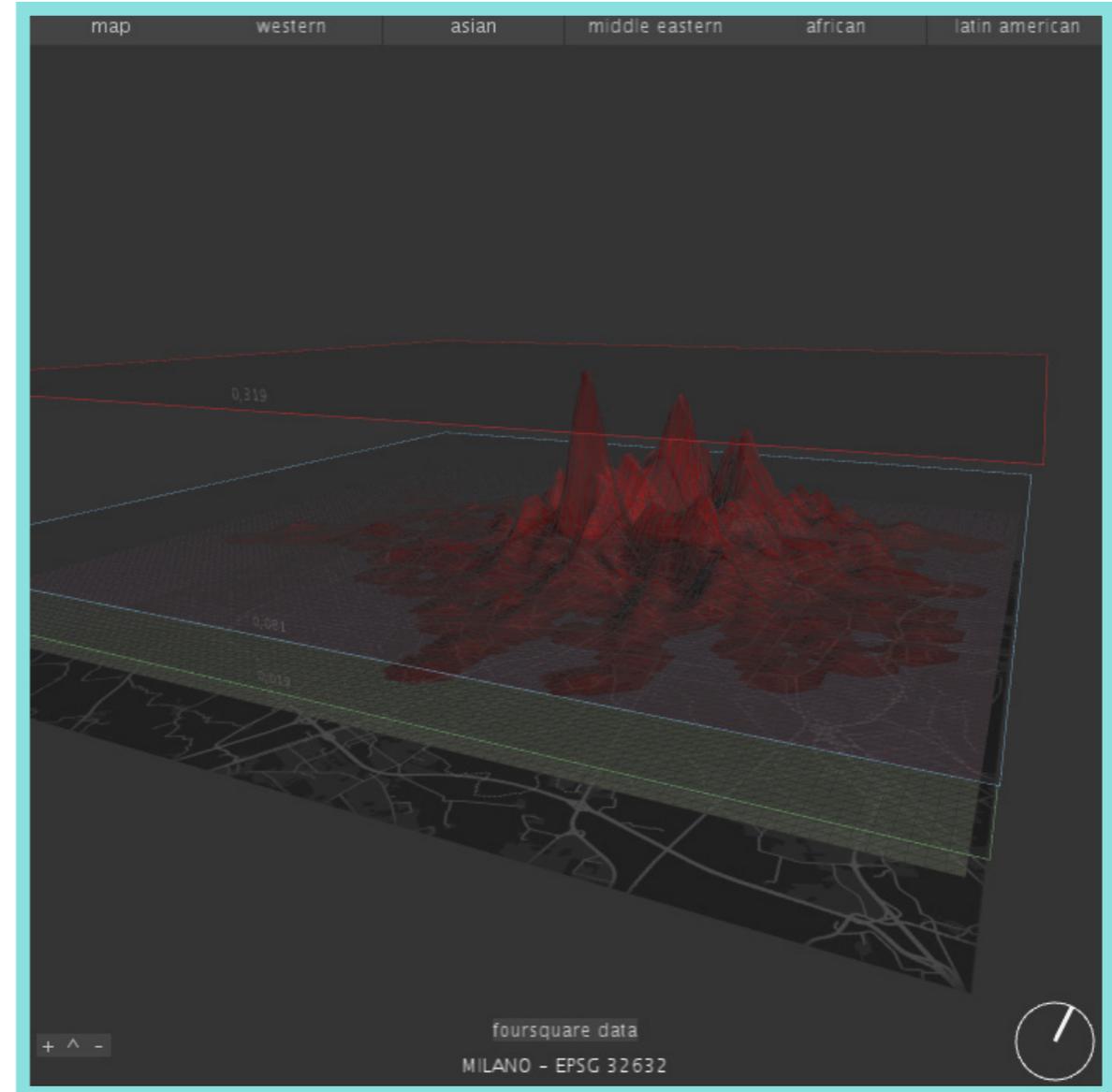
likes The **count** of users who have liked this venue, and **groups** containing any **friends** and **others** who have liked it. The groups included are subject to change.

like Indicates if the current user has liked this venue.

dislike Indicates if the current user has disliked this venue.



EBAY APPLICATION PROGRAM INTERFACE (API)





NASA DATABASE



EBAY APPLICATION PROGRAM INTERFACE (API)

Data URL: http://goldsmr2.sci.gsfc.nasa.gov:80/opensap/MERRA_DIURNAL/MAIUNX

Global Attributes:
HDF_GLOBAL.HDFEOSVersion: HDFEOS_V2.14
HDF_GLOBAL.missing_value: 9.999999870e+14
HDF_GLOBAL.Conventions: CF-1.0
HDF_GLOBAL.title: MERRA reanalysis. GEOS-5.2.0
HDF_GLOBAL.history: File written by CFIO
HDF_GLOBAL.institution: Global Modeling and Assimilation Office, NASA

Variables: **TQV:** Array of 32 bit Reals [TIME = 0..23][YDim = 0..360][XDim = 0..539]

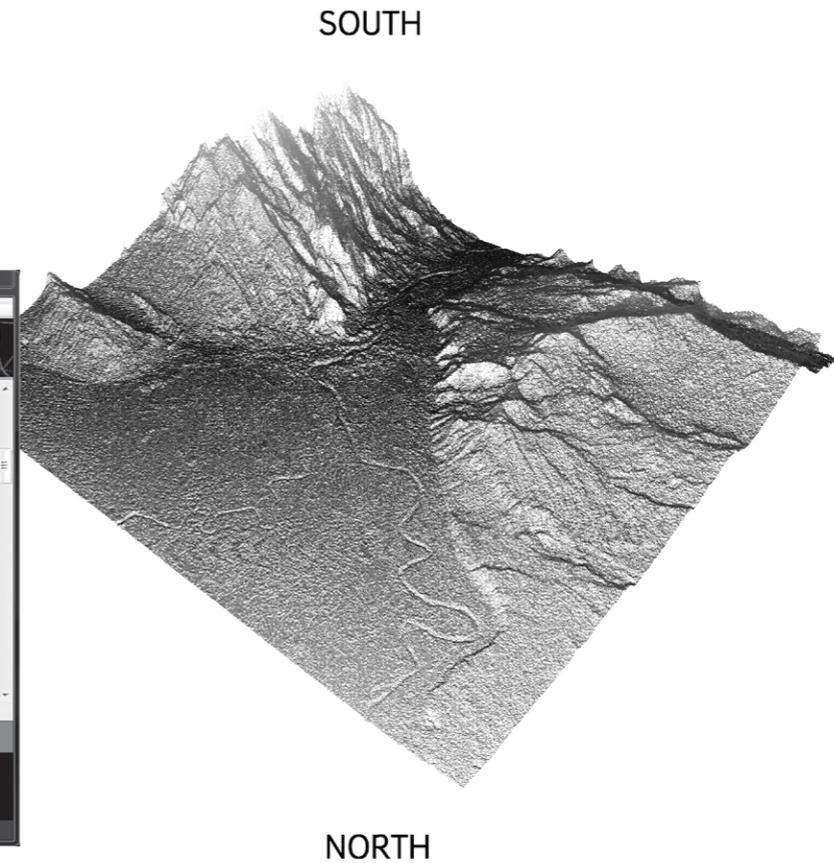
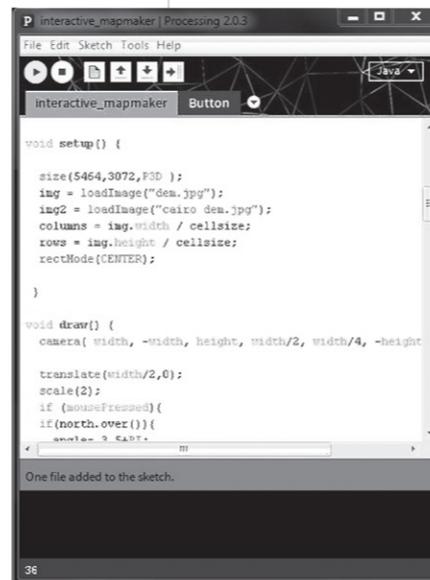
TIME: YDim: XDim:
_FillValue: 9.999999870e+14
long_name: Total Q vapor (Total precipitable water)
standard_name:
units: kg/m2
scale_factor: 1.000000000
add_offset: 0.000000000

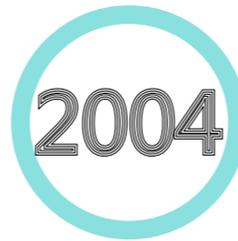
TQI: Array of 32 bit Reals [TIME = 0..23][YDim = 0..360][XDim = 0..539]

TIME: YDim: XDim:
_FillValue: 9.999999870e+14
long_name: Total cloud ice water
standard_name:
units: kg/m2
scale_factor: 1.000000000
add_offset: 0.000000000

TQL: Array of 32 bit Reals [TIME = 0..23][YDim = 0..360][XDim = 0..539]

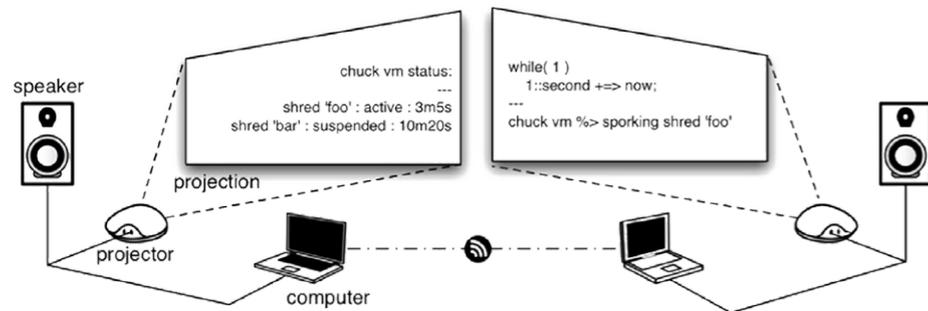
TIME: YDim: XDim:
_FillValue: 9.999999870e+14
long_name: Total cloud liquid water
standard_name:
units: kg/m2





TOPLAP Temporal Organisation for the Proliferation of Live Artistic Programming

Live coding - ALGORAVE



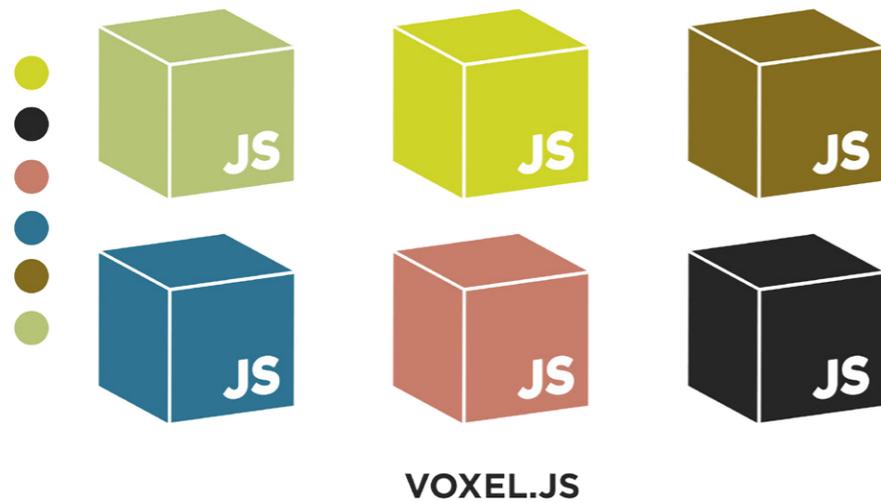
OPEN ON-THE-FLY AESTHETIC

On-the-fly programming (or live coding) is a style of programming in which the programmer/performer/composer augments and modifies the program while it is running, without stopping or restarting, in order to assert expressive, programmable control for performance, composition, and experimentation at run-time.

TECHNICAL + AESTHETIC ASPECTS



<http://youtu.be/Z-8DX7g2zEc>



VOXEL - Volumetric pixel

Elemento di volume che rappresenta l'intensità di segnale e/o colore nello spazio tridimensionale. Il valore del voxel può essere sintetizzato in un CUBO nello spazio o in un PUNTO di una griglia 3D con intervalli regolari.



<http://shama.github.com/voxel-snow>

```

var createEngine = require('voxel-engine');
var createTerrain = require('voxel-perlin-terrain');

// create the game
var game = createEngine({
  generateVoxelChunk: createTerrain({ scaleFactor: 10 }),
  chunkDistance: 2,
  materials: [
    'obsidian',
    ['whitewool', 'dirt', 'grass_dirt'],
    'grass',
    'plank'
  ],
  texturePath: './textures/',
  worldOrigin: [0, 0, 0],
  controls: { discreteFire: true }
});
var container = document.getElementById('container');
game.appendTo(container);

var createPlayer = require('voxel-player')(game);
var shama = createPlayer('textures/shama.png');
shama.yaw.position.set(0, 0, 0);
shama.possess();

var snow = require('./')({
  game: game,
  count: 2000,
  size: 20
});
game.on('tick', function() {
  snow.tick();
});

```

2008

U2
SL Live Concert in Second Life (2008.3.29)



νέμειν
nomadismo

DOVE
Second Life Dublin
QUANDO
2008.03.29

<https://www.youtube.com/watch?v=K4LE6VBAPd8>

STATO MODERNO

BISOGNO DI SEDENTARIETÀ FUNZIONALE ALLO SVILUPPO DELLA SOCIETÀ INDUSTRIALE E DELLO STATO-NAZIONE.

Corpo unito omogeneo, isotropo, dove la capitale è scelta per natura geometrica (euclidea) di un'estensione.

INCORPORA IL MODELLO GEOMETRICO.

SOCIETÀ POST-MODERNE

CRISI DEL MODELLO STANZIALE.

Il nomade, di oggi e di qualche millennio fa senza differenze, si distingue per non accumulare, ma per TRASMETTERE soltanto conoscenze, miti, tecniche, mentre gli utensili e le dimore sono di volta in volta fabbricati per non ostacolare gli spostamenti; oggi sono le **INFORMAZIONI** ad essere trasmesse, come conoscenze di cui si dispone e tecniche da padroneggiare, mentre il prodotto o il macchinario hanno perso il loro successo per lasciar spazio alle idee.

campo desertico FLUSSI

Il deserto è un'enorme mappa di segni per coloro che sono in grado di leggerli, per coloro che, cantando, sanno aprirsi la strada attraverso territori selvaggi.

(Chatwin, Le vie dei canti)

relazioni tra MEMORIA, SPAZIO, RAPPRESENTAZIONE

1977

www.youtube.com/watch?v=0fKBhvDjuy0

Charles and Ray Eames , Powers of Ten™

Pensare ad un mondo senza Stato vuol dire eliminare la scala e rendere spazio e tempo valori residuali.

La Rete ha spazi e tempi?

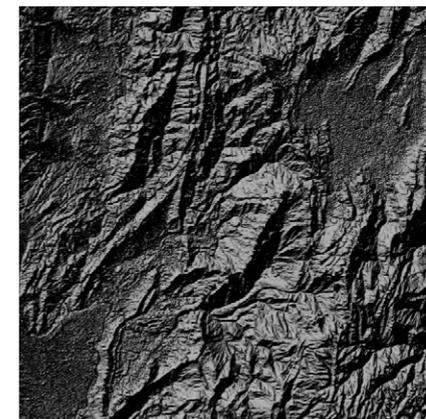
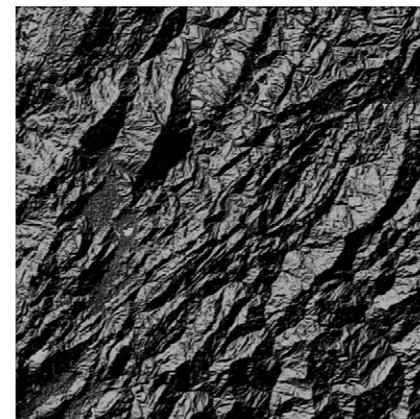
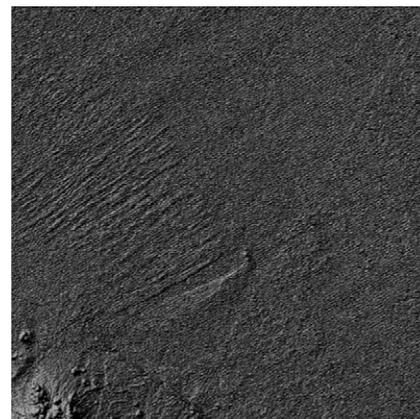
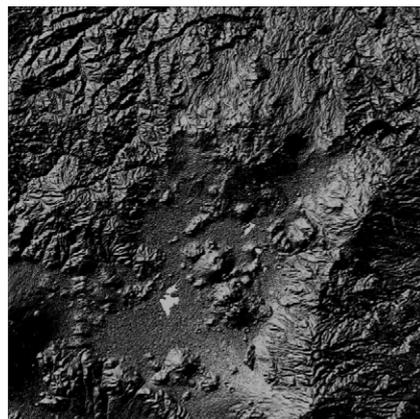
BYRD GLACIER - Antarctica



DASHT-E KAVIR- Iran

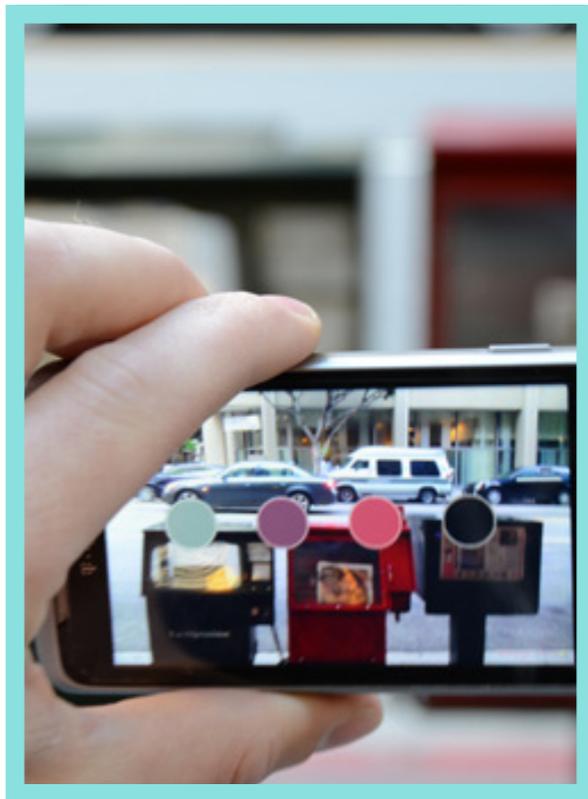


PORNOGEOGRAPHIES



La pornogeografia indaga le variabili che concorrono all'iper-mappatura del globo (cartografare desiderante) in relazione alla diffusione dei nuovi media e al consolidamento del suo ruolo performativo nella società iper-nomade.

DEVICE / APPLICATION



**OPEN HARDWARE /
OPEN SOFTWARE**



WEARABLE HARDWARE



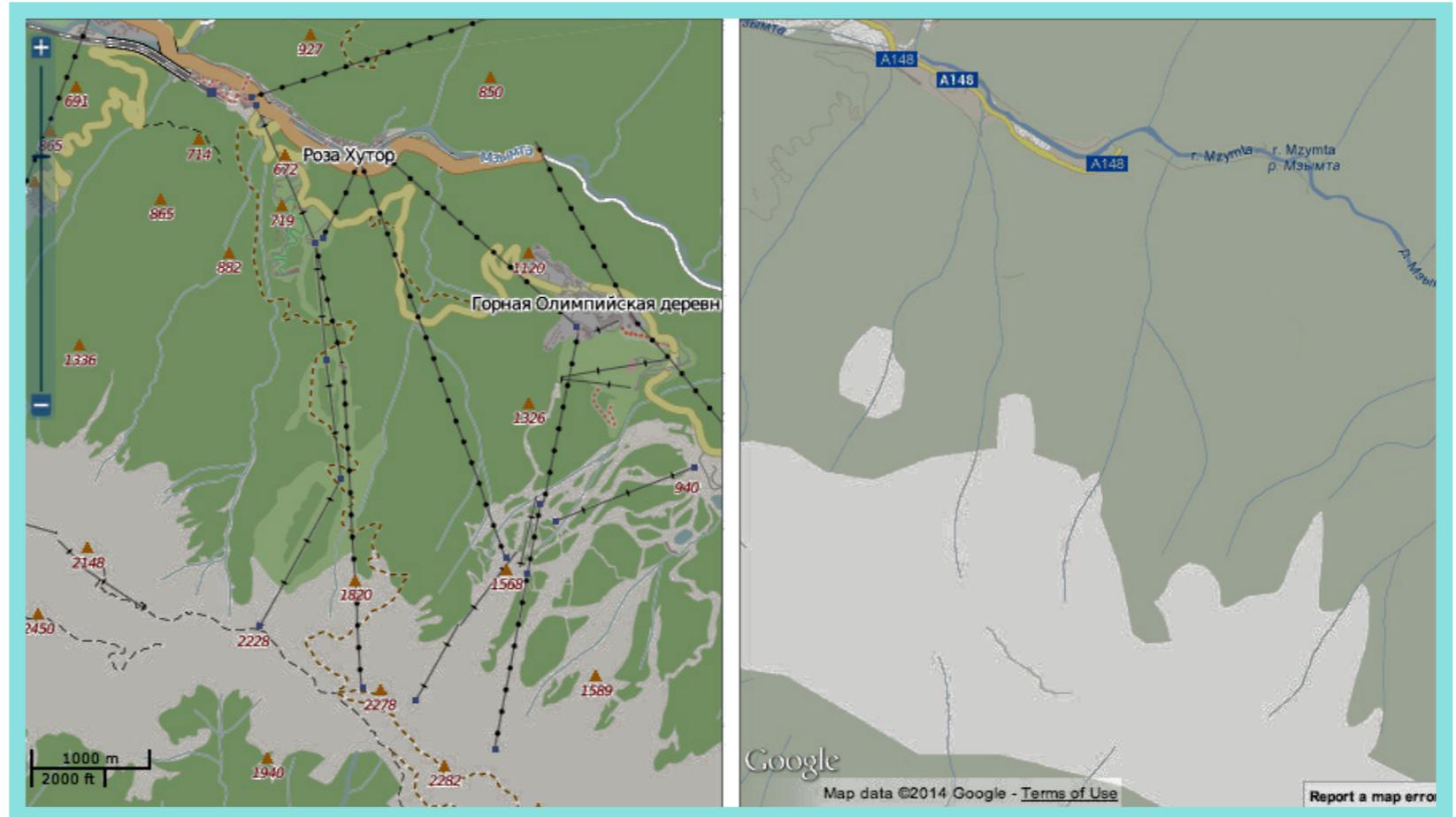
OPEN HARDWARE /
OPEN SOFTWARE



JOSM Java (J) OpenStreetMap (OSM)

OSM >
The project that creates and distributes FREE geographic data for the world. We started it because most maps you think of as free actually have LEGAL OR TECHNICAL RESTRICTIONS on their use, holding back people from using them in creative, productive, or unexpected ways.

OSM vs GOOGLE MAPS



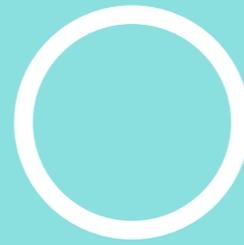
DEVICE / APPLICATION



Virtual Tour
unity

WEARABLE HARDWARE





contact us

hello@csplashsplash.com

ALESSANDRO MUSETTA