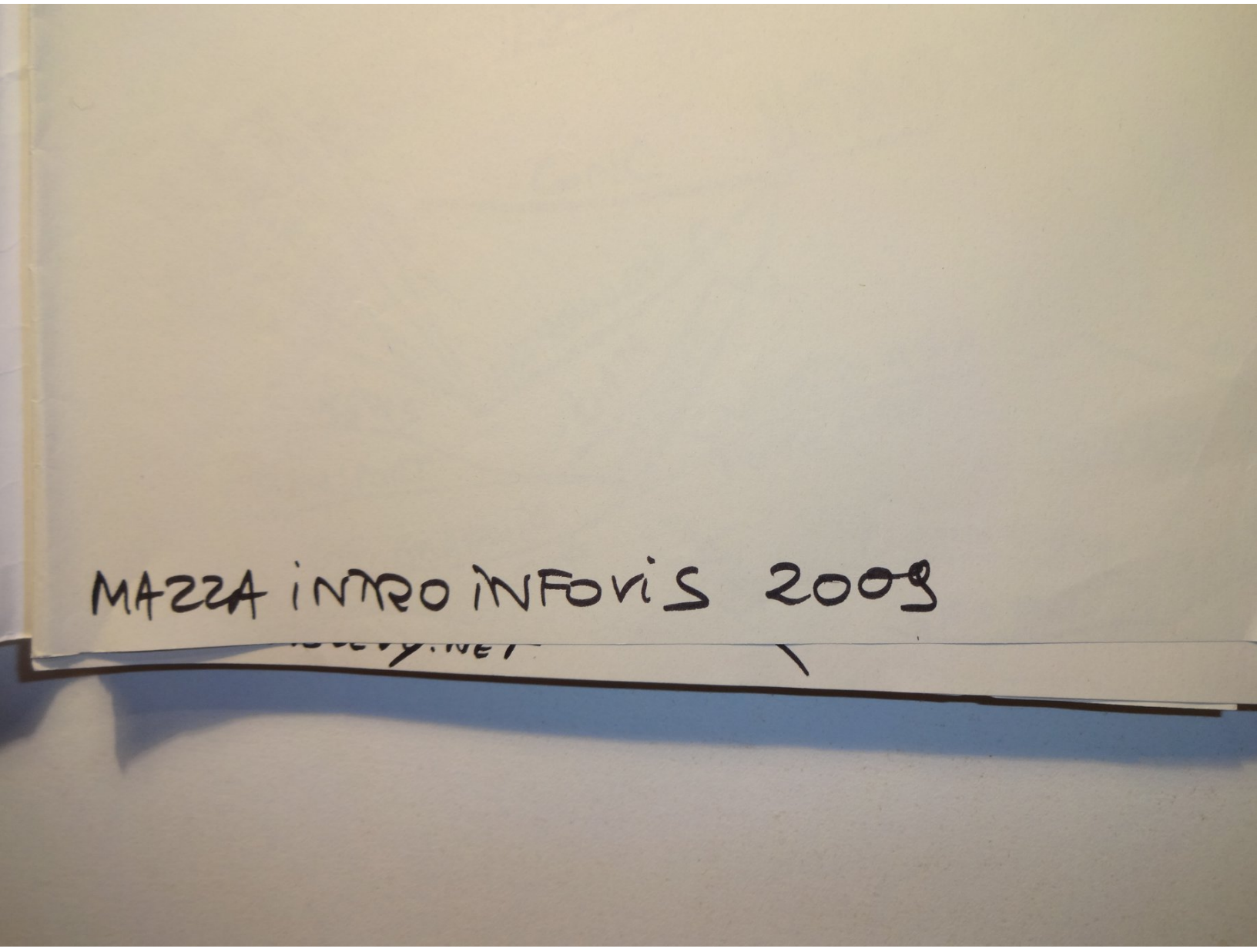
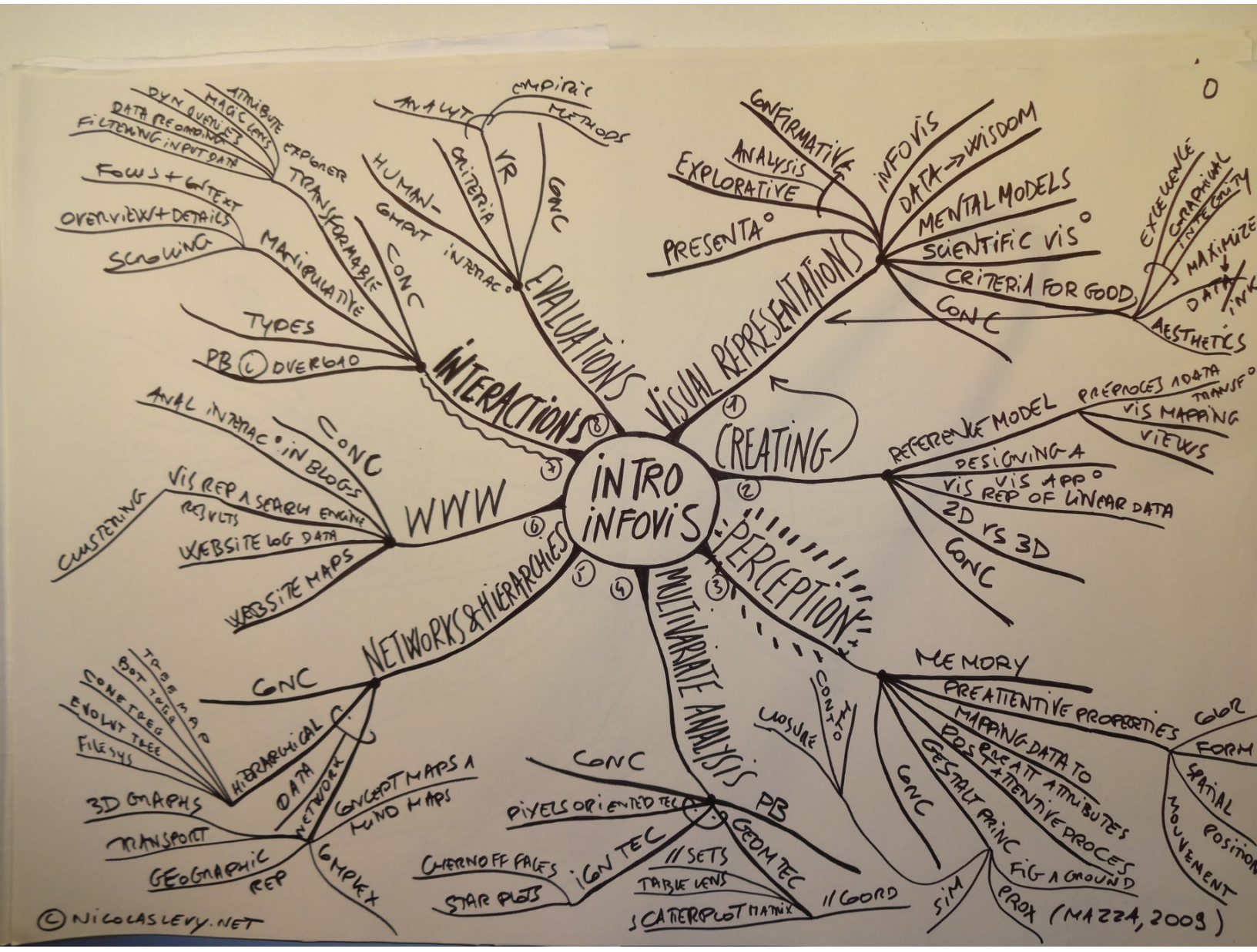
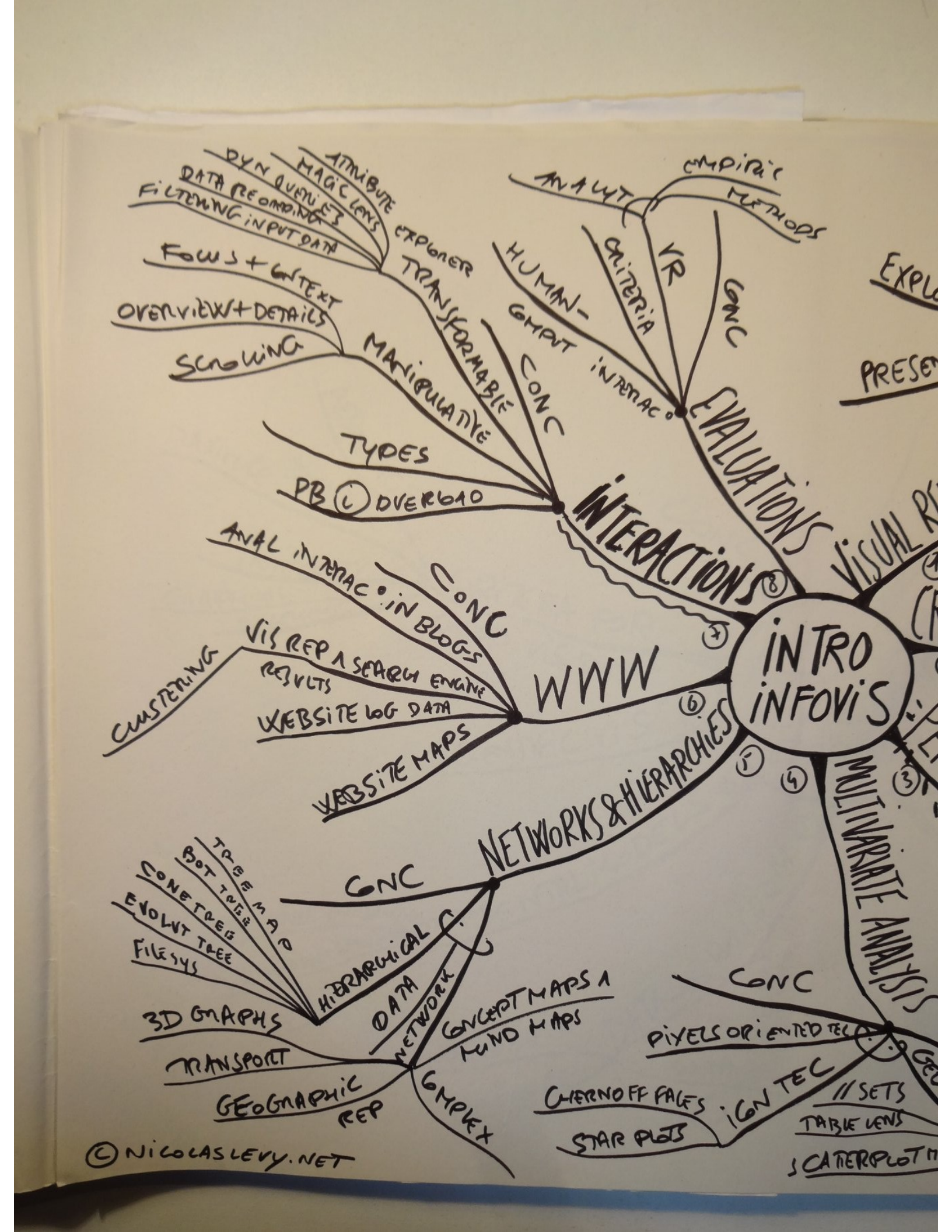
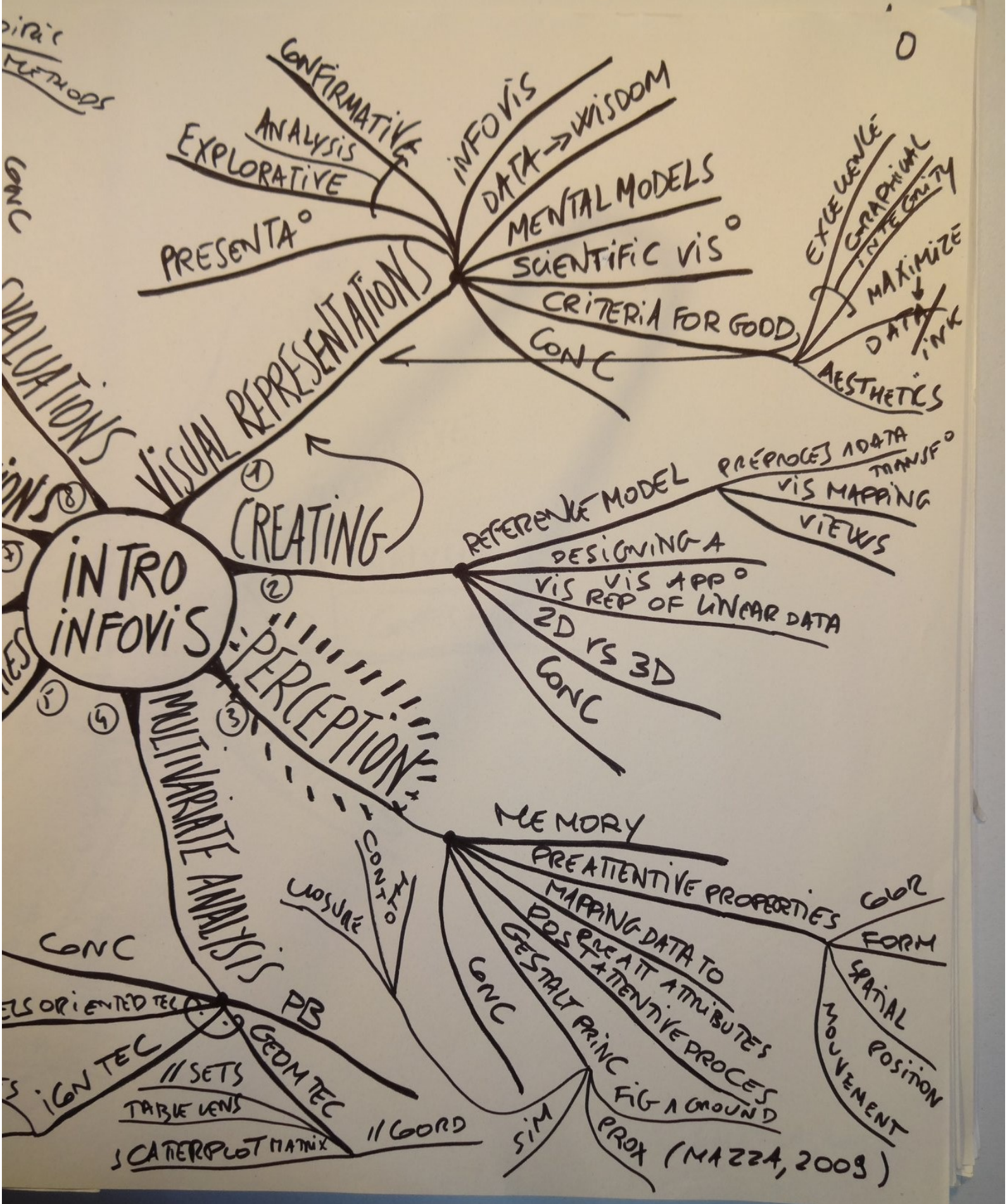
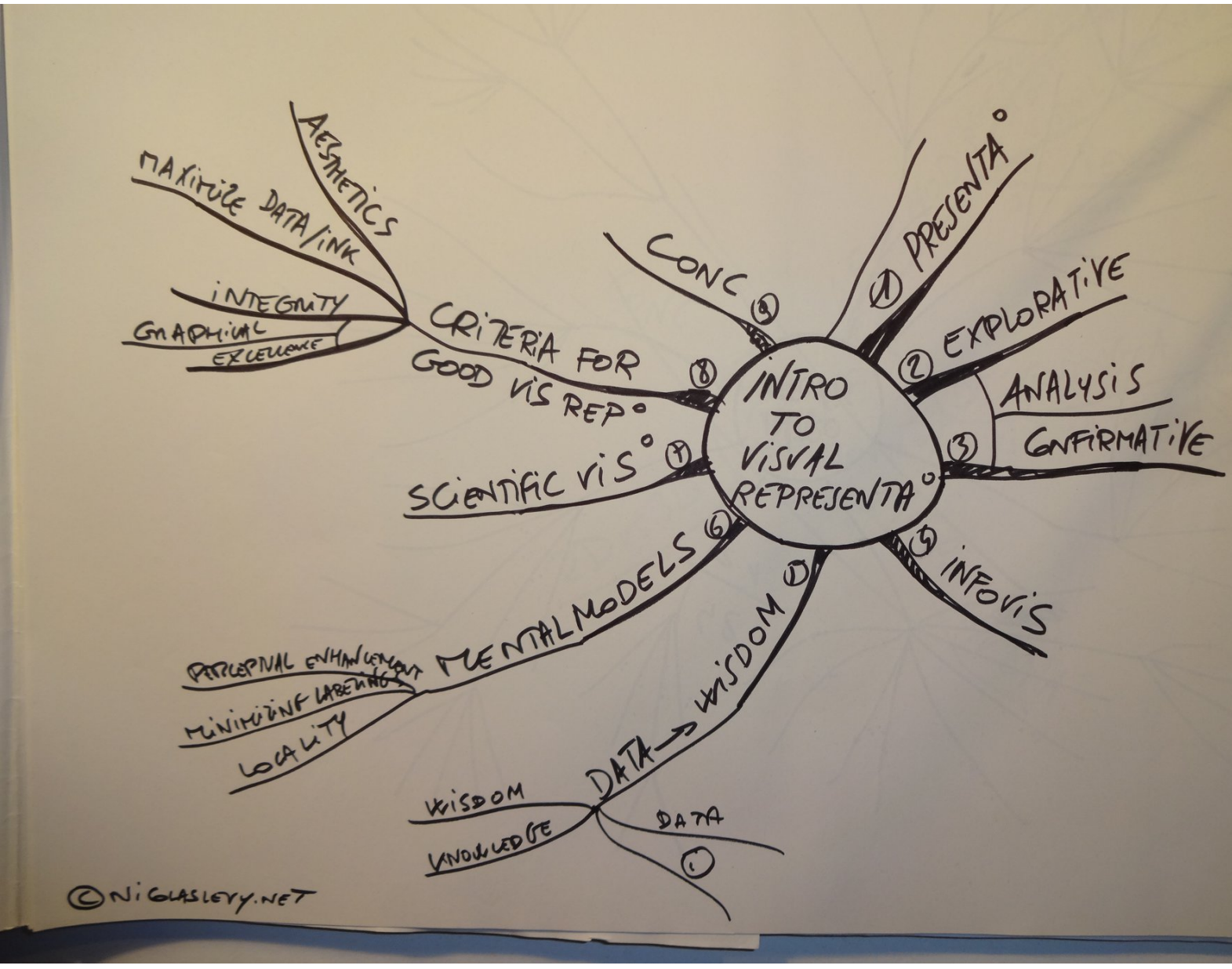
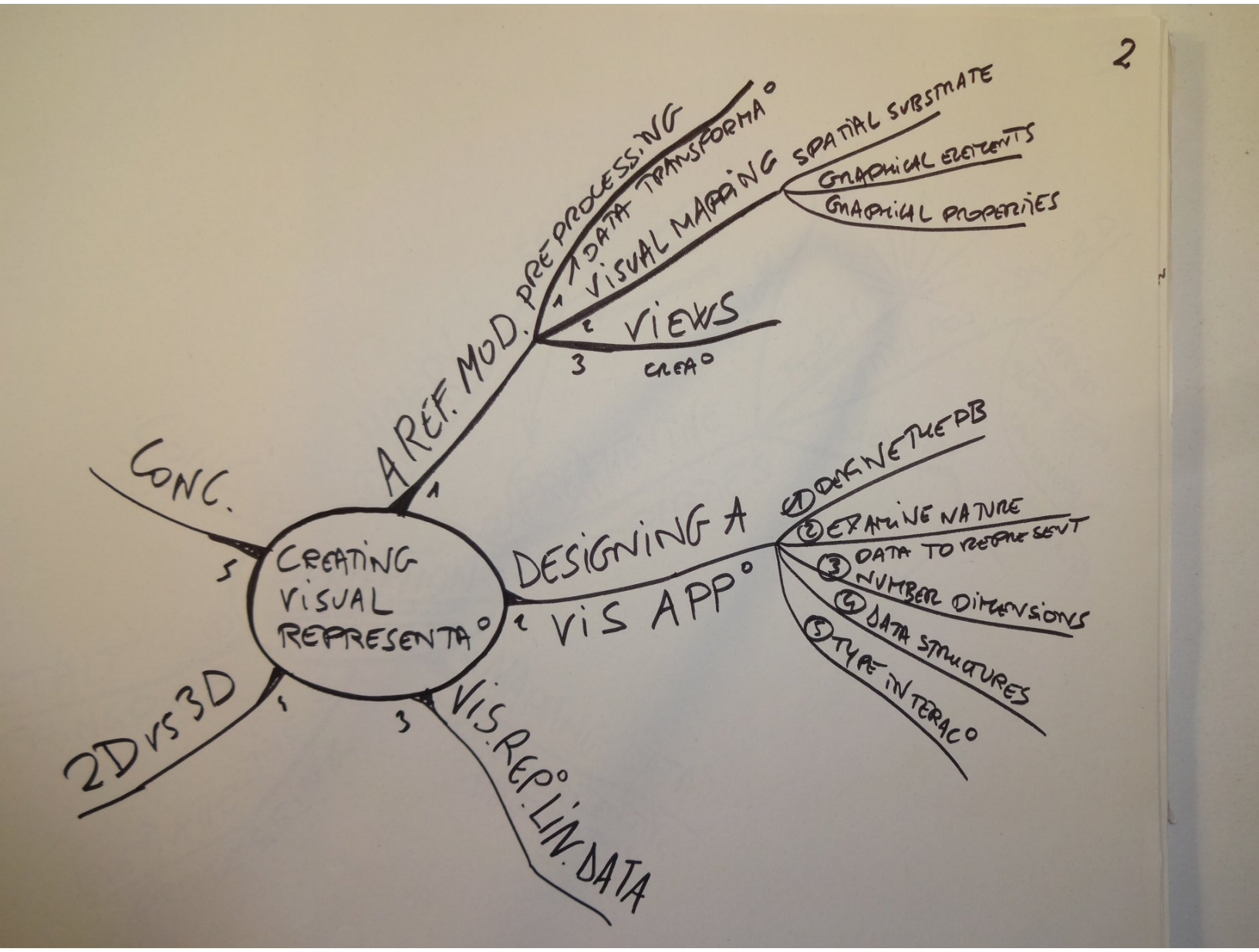

MAZZA INTRO INFOVIS 2009

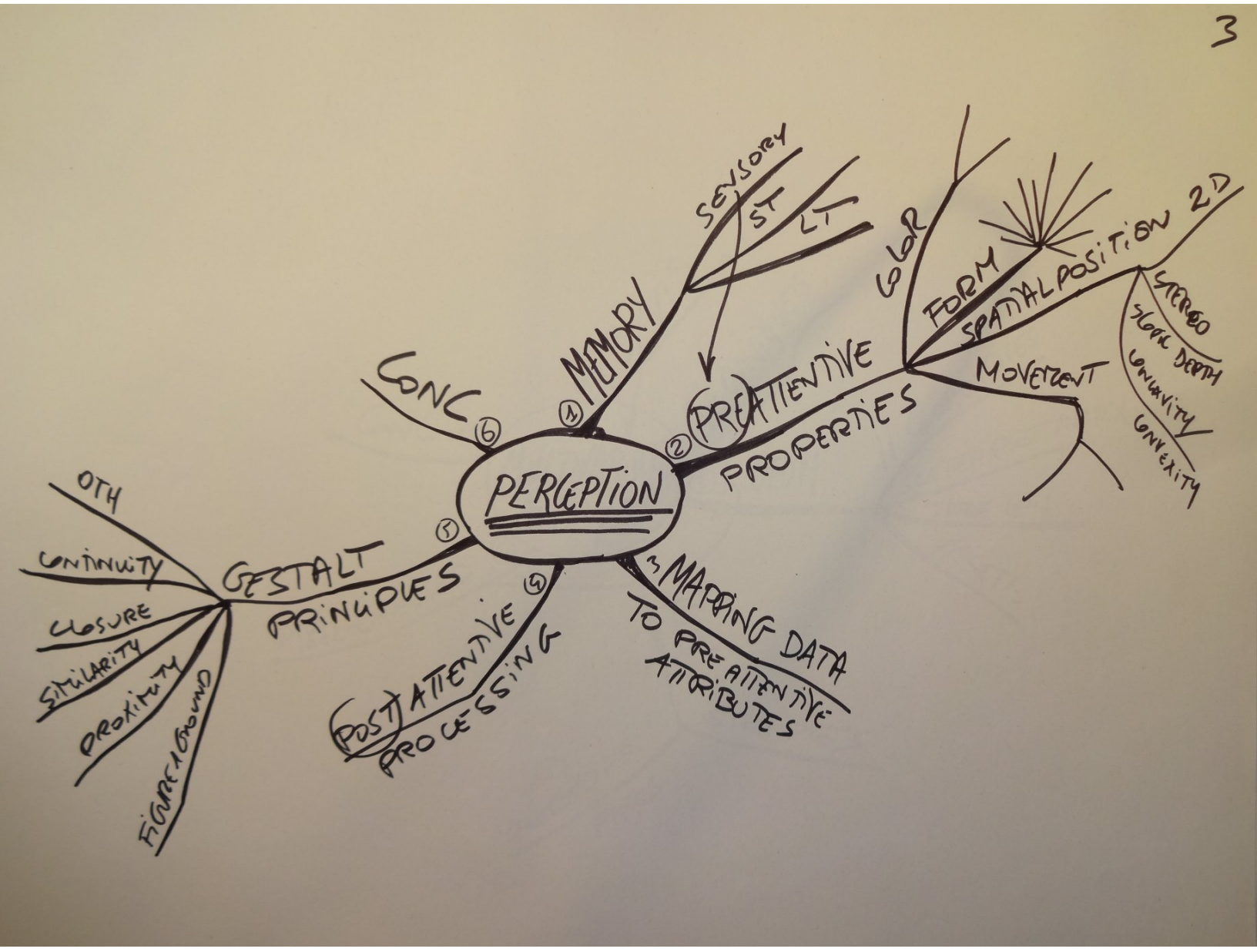

INTRO INFOVIS
1 CREATING
2 PERCEPTION
3 VISUAL REPRESENTATIONS
4 INTERACTIONS
5 EVALUATIONS
6 WWW
7 NETWORKS & HIERARCHIES
8 MULTIVARIATE ANALYSIS
REFERENCE MODEL
PREPROCESS DATA
TRANSFO°
VIS MAPPING
VIEWS
DESIGNING A VIS APP°
VIS REP OF LINEAR DATA
2D VS 3D
CONC
CONFIRMATIVE
ANALYSIS
EXPLORATIVE
PRESENTA°
INFOVIS
DATA -> WISDOM
MENTAL MODELS
SCIENTIFIC VIS°
CRITERIA FOR GOOD
CONC
EXCELLENCE
GRAPHICAL INTEGRITY
MAXIMIZE DATA / INK
AESTHETICS
ANALYT
EMPIRIC METHODS
VR
CRITERIA
CONC
HUMAN-COMPT INTERAC°
CONC
ATTRIBUTE EXPLORER
MAGIC LENS
DYN QUERIES
DATA RECORDING
FILTERING INPUT DATA
TRANSFORMABLE
FOVS + FOCUS + CONTEXT
OVERVIEW + DETAILS
SCROLLING
MANIPULATIVE
TYPES
PB (1) OVERLAO
ANAL INTERAC° IN BLOGS
CONC
VIS REP A SEARCH ENGINE RESULTS
WEBSITE LOG DATA
WEBSITE MAPS
CLUSTERING
CONC
TREEMAP
BOT TOP
CONE TREE
EVOLVT TREE
FILESYS
HIERARCHICAL
DATA
NETWORK
3D GRAPHS
TRANSPORT
GEOGRAPHIC REP
CONCEPT MAPS & MIND MAPS
COMPLEX
CONC
PIXELS ORIENTED TEC
GEOM TEC
PB
CHERNOFF FACES
STAR PLOTS
ICON TEC
// SETS
TABLE LENS
SCATTERPLOT MATRIX
// COORD
CONTO
CLOSURE
MEMORY
PREATTENTIVE PROPERTIES
MAPPING DATA TO POSTATTENTIVE ATTRIBUTES
POSTATTENTIVE PROCESS
GESTALT PRINC
FIG & GROUND
PROX (MAZZA, 2009)
SIM
CONC
COLOR
FORM
SPATIAL POSITION
MOVEMENT
© NICOLAS LEVY. NET

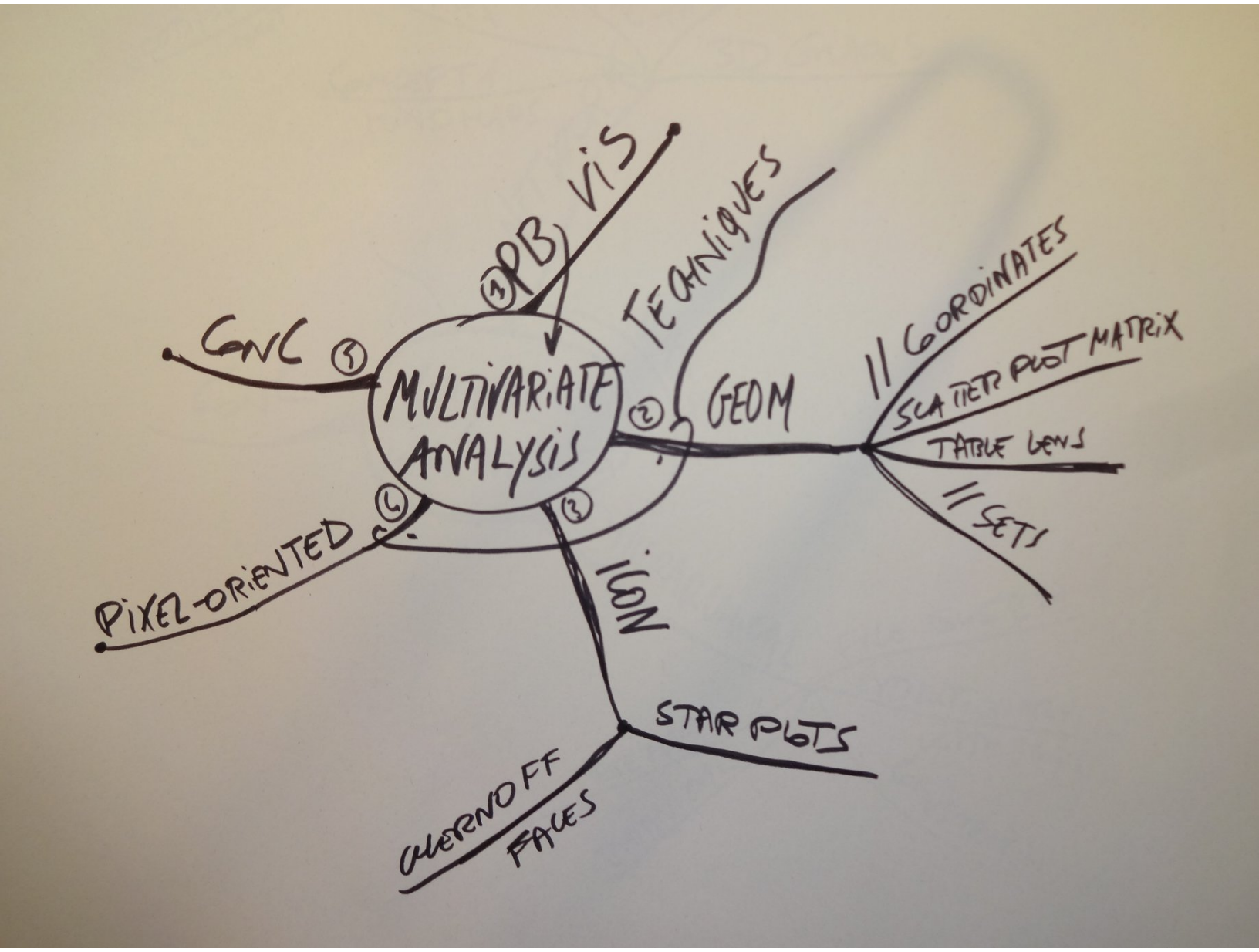

INTRO INFOVIS
INTERACTIONS
EVALUATIONS
WWW
NETWORKS & HIERARCHIES
MULTIVARIATE ANALYSIS
TRANSFORMABLE
MANIPULATIVE
EXPLORER
ATTRIBUTE
MAGIC LENS
DYN QUERIES
DATA RECORDING
FILTERING INPUT DATA
FOCUS + CONTEXT
OVERVIEW + DETAILS
SCROLLING
TYPES
PB (L) OVERLAP
CONC
HUMAN-COMPUT INTERAC
ANALYT
EMPIRIC METHODS
CRITERIA
VR
CONC
ANAL INTERAC IN BLOGS
CONC
VIS REP / SEARCH ENGINE RESULTS
WEBSITE LOG DATA
WEBSITE MAPS
CLUSTERING
CONC
TREEMAP
BOT TREE
CONE TREE
EVOLVT TREE
FILESYS
HIERARCHICAL
DATA
NETWORK
CONCEPT MAPS / MIND MAPS
COMPLEX
3D GRAPHS
TRANSPORT
GEOGRAPHIC REP
CONC
PIXEL ORIENTED TEC
CHERNOFF FACES
STAR PLOTS
IGN TEC
// SETS
TABLE LENS
SCATTERPLOT M
PRESEN
VISUAL R
© NICOLAS LEVY. NET

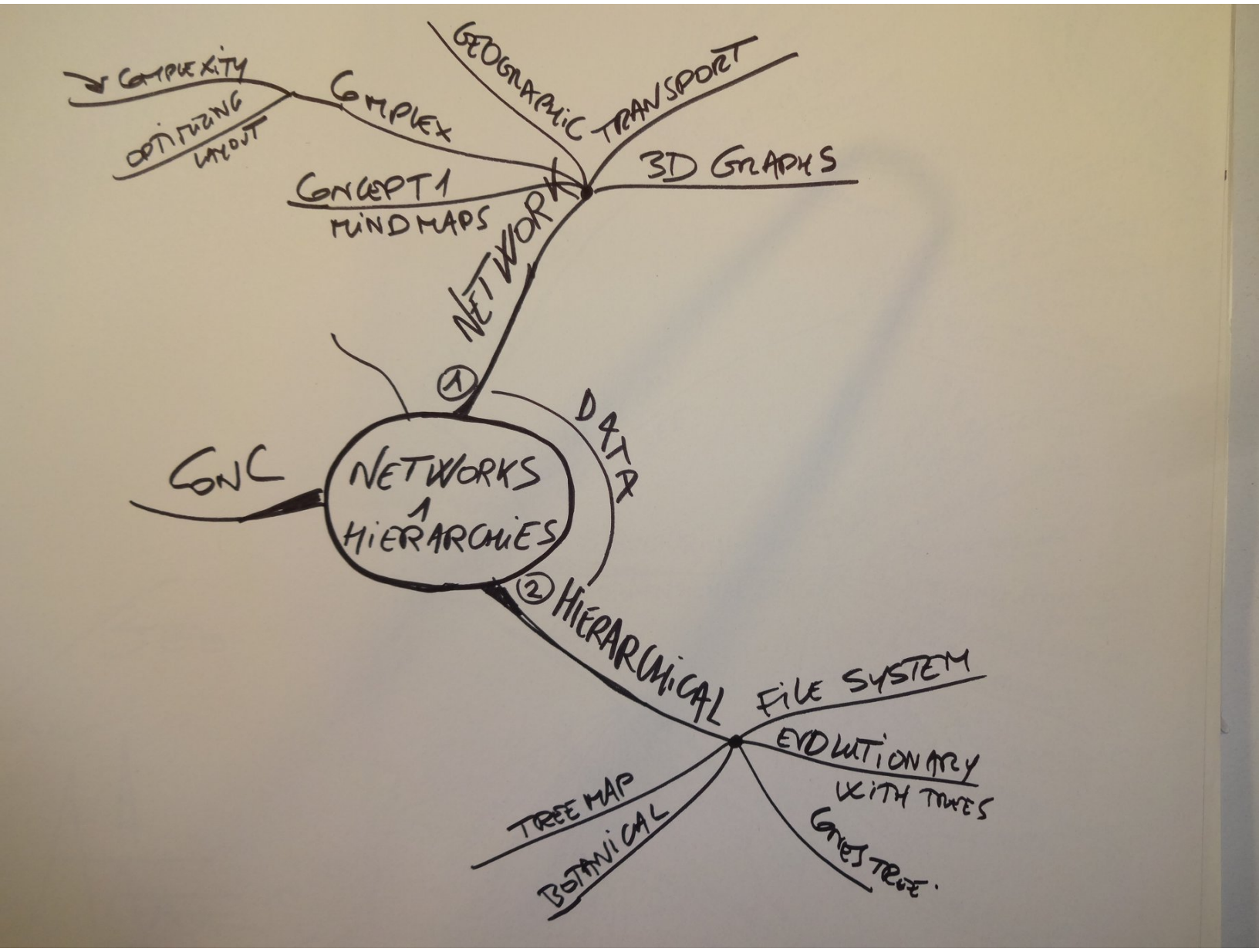

INTRO INFOVIS
VISUAL REPRESENTATIONS
CREATING
PERCEPTION
MULTIVARIATE ANALYSIS
EVALUATIONS
INFOVIS
DATA -> WISDOM
MENTAL MODELS
SCIENTIFIC VIS°
CRITERIA FOR GOOD
CONC
CONFIRMATIVE ANALYSIS
EXPLORATIVE
PRESENTA°
EXPRESSIVENESS
EFFECTIVENESS
GRAPHICAL INTEGRITY
MAXIMIZE DATA INK
AESTHETICS
REFERENCE MODEL
PREPROCESS DATA
TRANSF°
VIS MAPPING
VIEWS
DESIGNING A VIS APP°
VIS REP OF LINEAR DATA
2D VS 3D
CONC
MEMORY
PREATTENTIVE PROPERTIES
COLOR
FORM
SPATIAL POSITION
MOVEMENT
MAPPING DATA TO PREATTENTIVE ATTRIBUTES
POSTATTENTIVE PROCES
GESTALT PRINC
FIG & GROUND
PROX
SIM
CONC
CONTO
TEXTO
CLOSURE
CONC
PB
GEOM TEC
ILSETS
TABLE LENS
SCATTERPLOT MATRIX
ILGORD
IGN TEC
ELS ORIENTED TEC
(MAZZA, 2009)

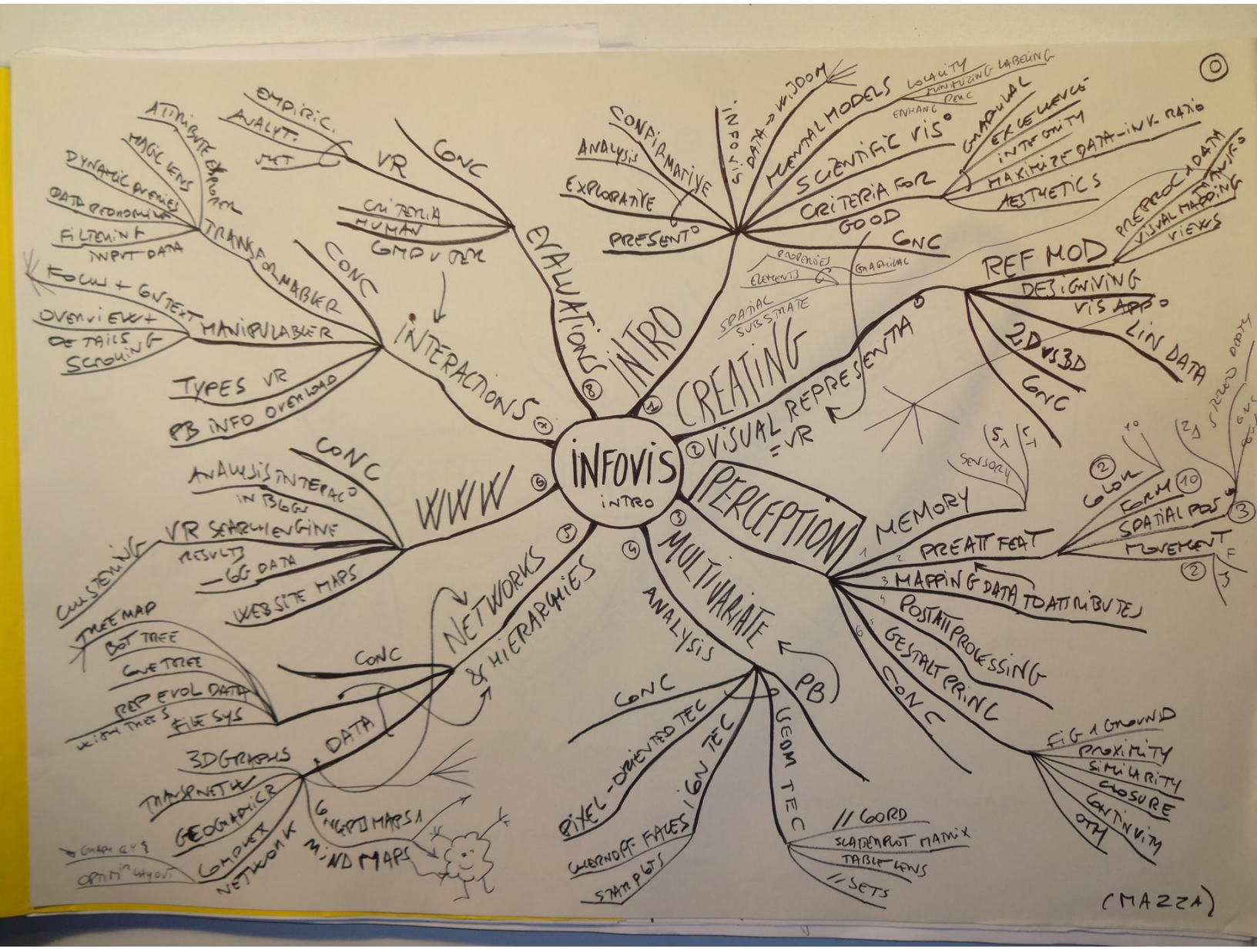


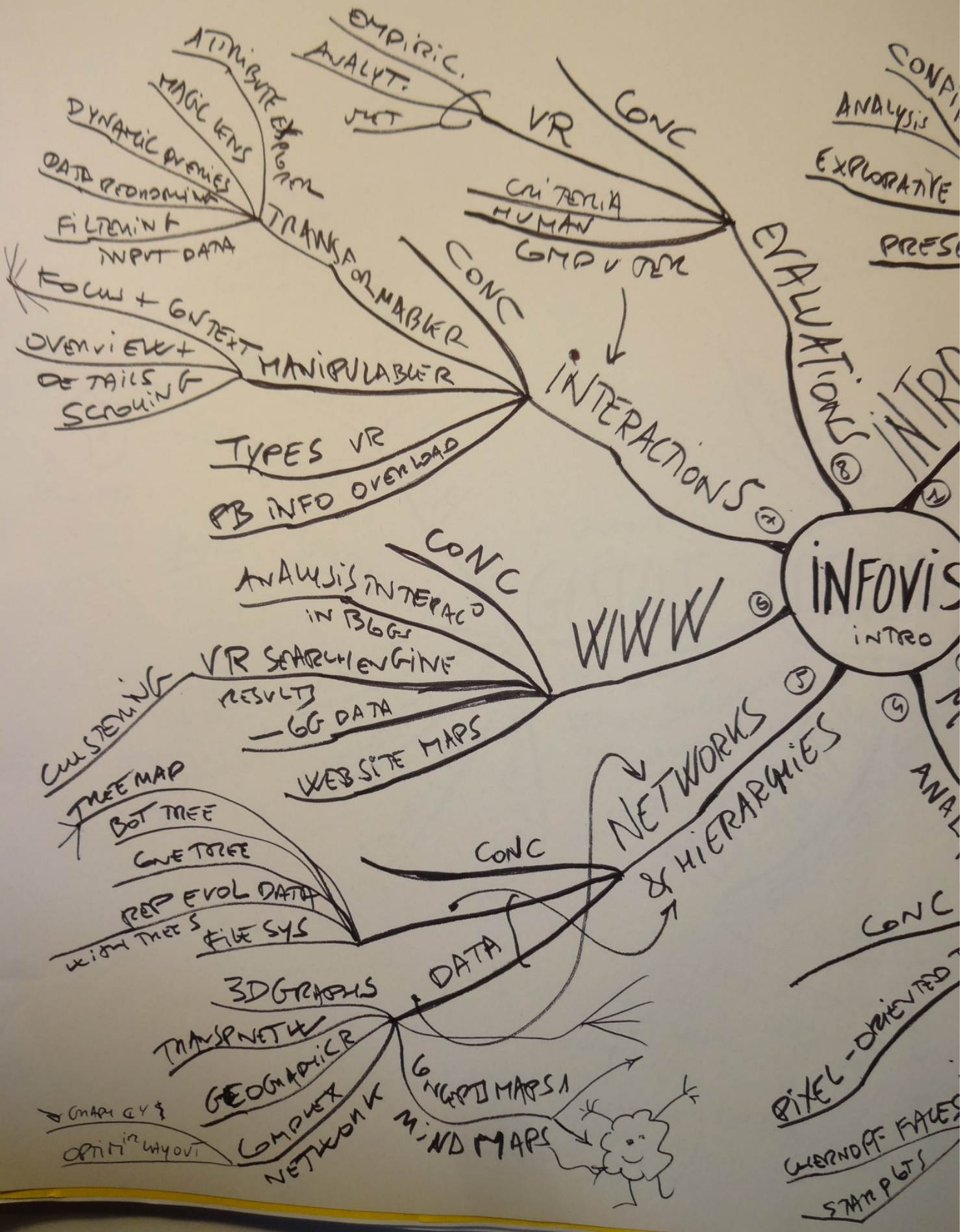

CREATING VISUAL REPRESENTA°
1 AREF. MOD. PRE PROCESS. NG
1 DATA TRANSFORMA°
2 VISUAL MAPPING
SPATIAL SUBSTRATE
GRAPHICAL ELEMENTS
GRAPHICAL PROPERTIES
2 VIEWS
3 CREA°
1 DESIGNING A VIS APP°
1 DEFINE THE DB
2 EXPLICIT NATURE
3 DATA TO REPRESENT
4 NUMBER DIMENSIONS
5 DATA STRUCTURES
5 TYPE INTERAC°
3 VIS. REP. LIN. DATA
1 2D vs 3D
5 CONC.

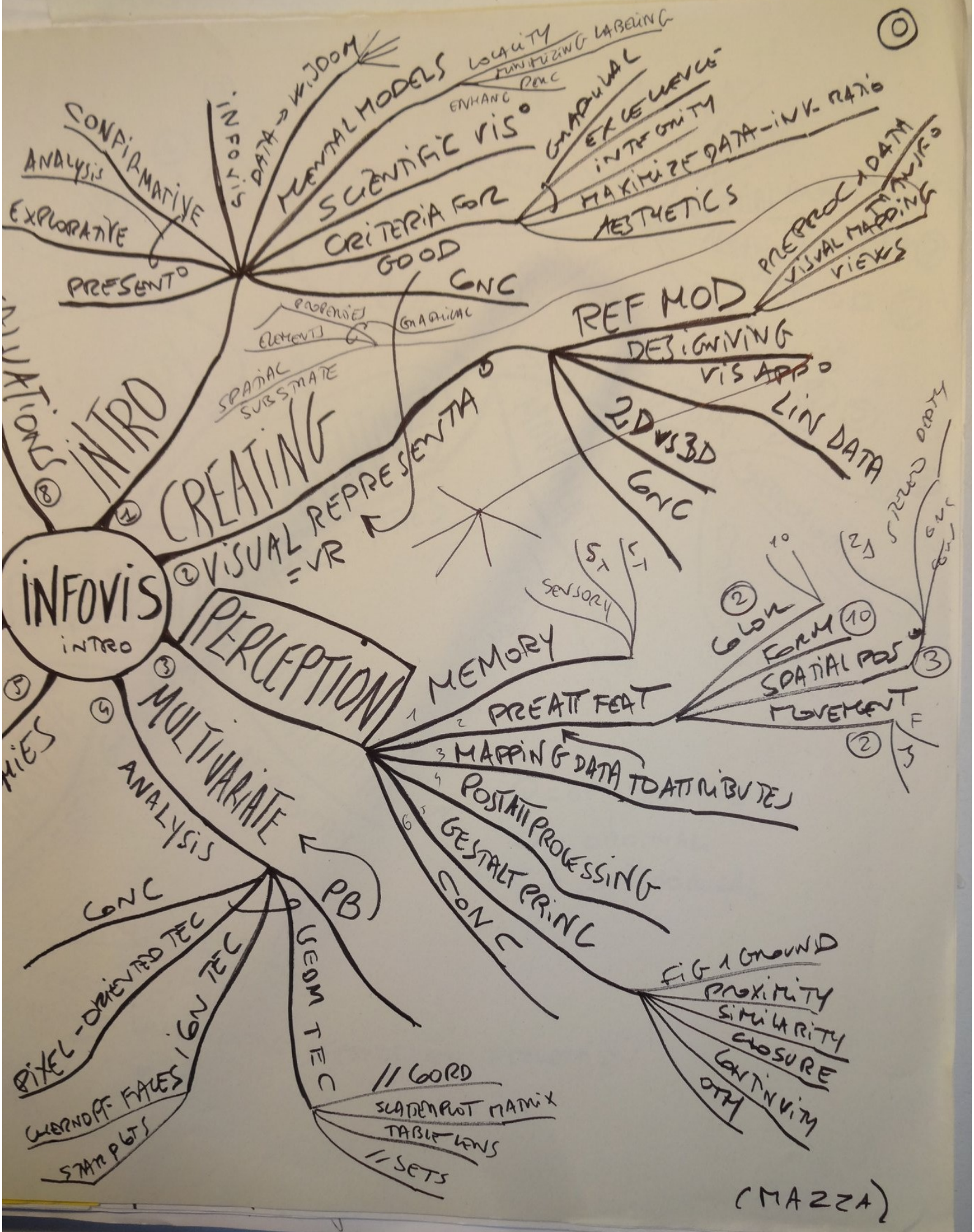

PERCEPTION
CONC ⑥
① MEMORY
SENSORY
ST
LT
② (PRE)ATTENTIVE PROPERTIES
COLOR
FORM
SPATIAL POSITION 2D
STEREO
SLOPE DEPTH
CURVATURE
CONVEXITY
MOVEMENT
③ MAPPING DATA TO PRE ATTENTIVE ATTRIBUTES
④ (POST) ATTENTIVE PROCESSING
⑤ GESTALT PRINCIPLES
OTH
CONTINUITY
CLOSURE
SIMILARITY
PROXIMITY
FIGURE/GROUND

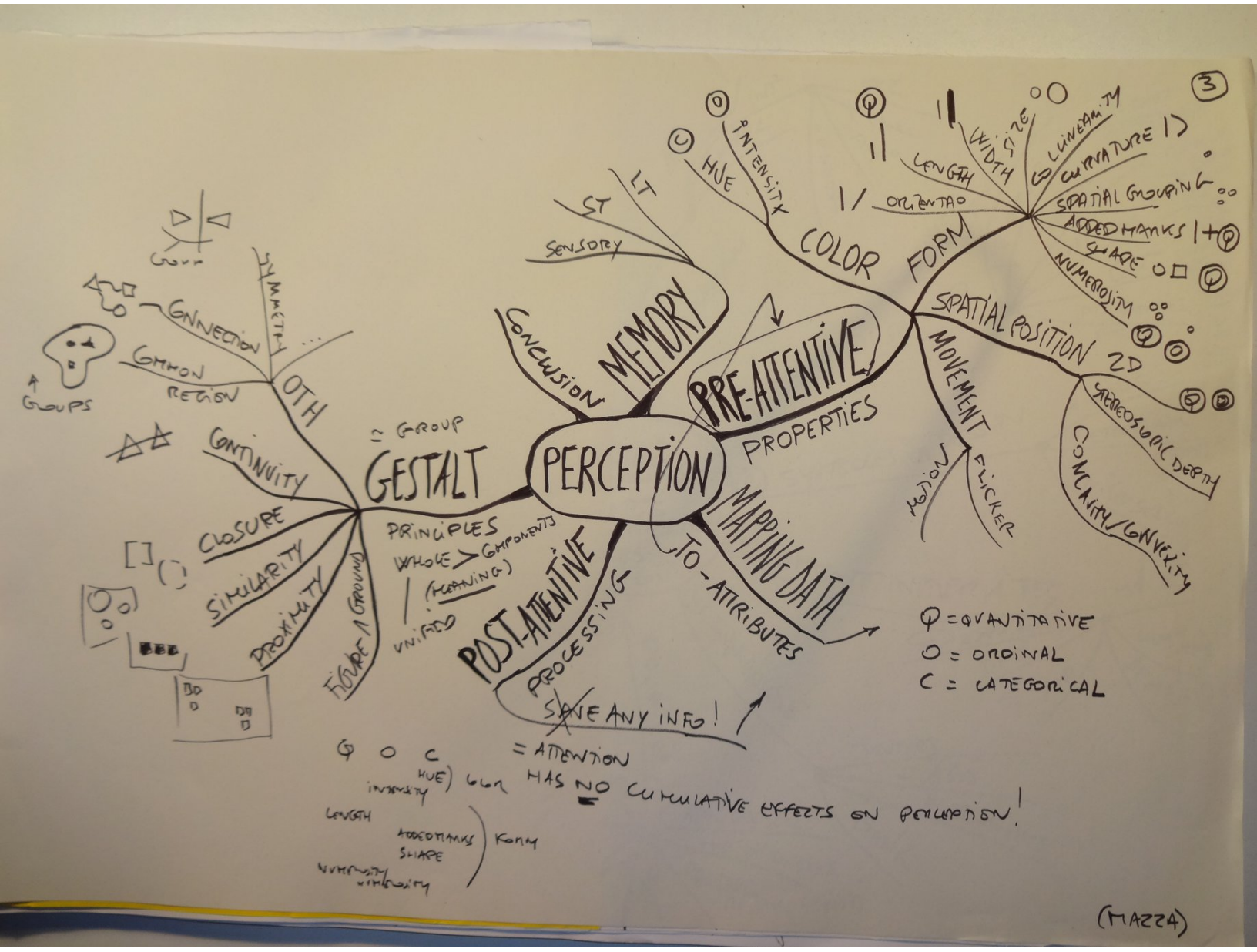

MULTIVARIATE ANALYSIS
PB VIS
TECHNIQUES
GENC
GEOM
ICON
PIXEL-ORIENTED
// COORDINATES
SCATTER PLOT MATRIX
TABLE LENS
// SETS
STAR PLOTS
CHERNOFF FACES


COMPLEXITY
OPTIMIZING LAYOUT
COMPLEX
GEOGRAPHIC TRANSPORT
3D GRAPHS
CONCEPT / MINDMAPS
NETWORK
1
DATA
GNC
NETWORKS / HIERARCHIES
2 HIERARCHICAL
FILE SYSTEM
EVOLUTIONARY WITH TIMES
TREE MAP
BOTANICAL
GENEALOGIE.

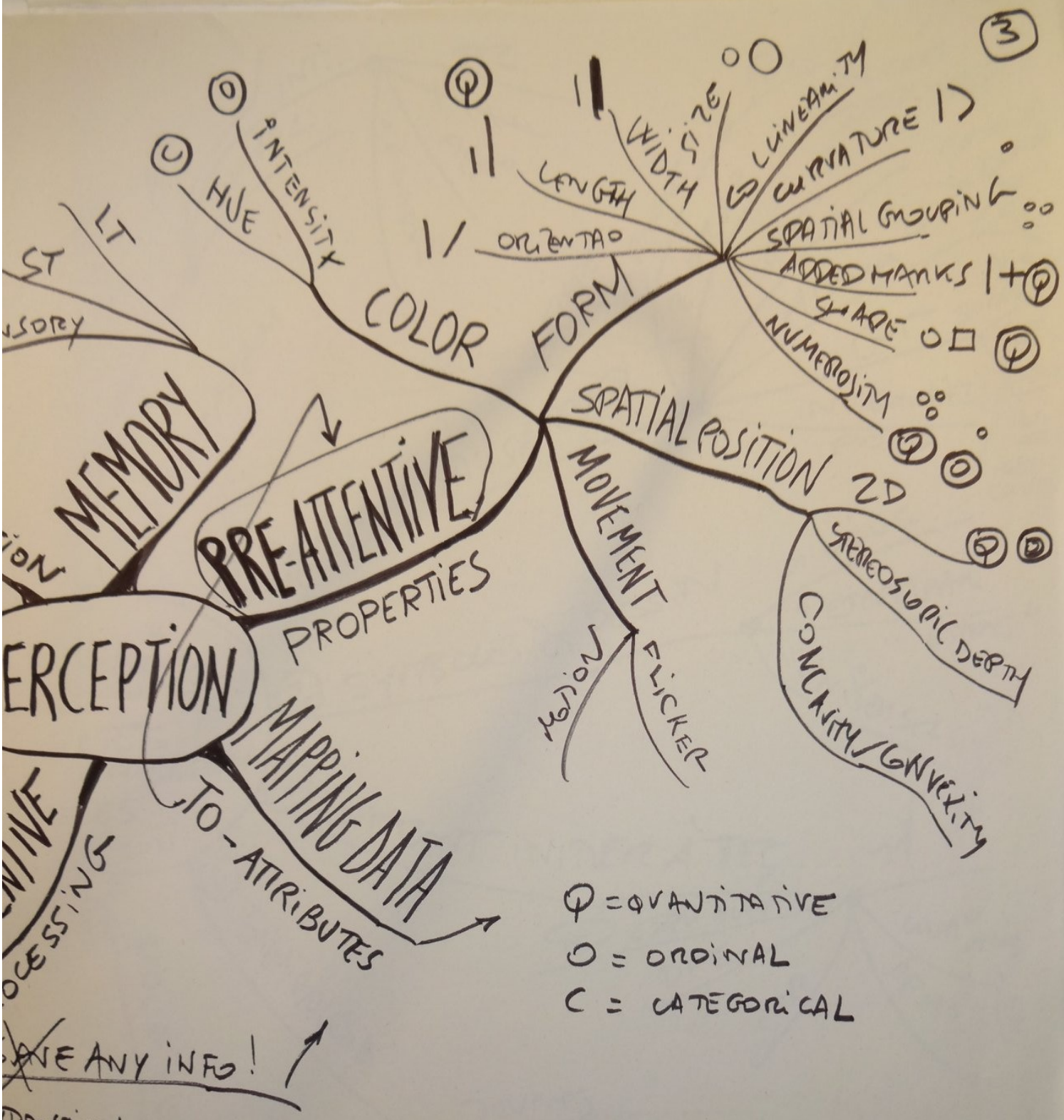

INFOVIS
INTRO
EVALUATIONS
EMPIRIC.
ANALYT.
VR
CONC
CRITERIA
HUMAN
GMD VS PC
INTERACTIONS
ATTRIBUTE EXPLOR.
MAGIC LENS
DYNAMIC QUERIES
DATA REDUCTION
FILTERING
INPUT DATA
TRANSF. MARKER
FOCUS + CONTEXT
MANIPULABLE
OVERVIEW + DETAILS
SCROLLING
TYPES VR
PB INFO OVERLOAD
WWW
CONC
ANALYSIS INTERACT
IN BLOGS
VR SEARCH ENGINE
RESULTS
—GG DATA
WEBSITE MAPS
CLUSTERING
TREEMAP
BOT TREE
CONE TREE
REP EVOL DATA
HYPERTREE'S
FILE SYS
NETWORKS & HIERARCHIES
CONC
DATA
3D GRAPHS
TRANSPARENCY
GEOGRAPHICAL
GRAPHER
NETWORK
MIND MAPS
MULTIVARIATE ANALYSIS
CONC
PIXEL-ORIENTED TEC
CHERNOFF-FACES
STAR PLOTS
GEOM TEC
PB
// COORD
SCATTERPLOT MATRIX
TABLE LENS
// SETS
PERCEPTION
MEMORY
SENSORY
PREATT FEAT
MAPPING DATA TO ATTRIBUTES
POSTATT PROCESSING
GESTALT PRINC
CONC
FIG / GROUND
PROXIMITY
SIMILARITY
CLOSURE
CONTINUITY
ETH
CREATING
VISUAL REPRESENTA = VR
SPATIAL SUBSTRATE
PROPERTIES
ELEMENTS
GRAPHICAL
CONC
REF MOD
PREPROCESSING
VISUAL MAPPING
VIEWS
DESIGNING VIS
LIN DATA
2D VS 3D
CONC
COLOR
FORM
SPATIAL POS
MOVEMENT
SIZE
ORIENTATION
CONC
INFOVIS DATA → VR/ZOOM
MENTAL MODELS
LOCALITY
MINIMIZING LABELING
ENHANC
PERC
SCIENTIFIC VIS
CONFIRMATIVE
ANALYSIS
EXPLORATIVE
PRESENT
CRITERIA FOR GOOD
GRAPHICAL EXCELLENCE
INFO DENSITY
MAXIMIZE DATA-INK RATIO
AESTHETICS
CONC
(MAZZA)


INFOVIS
INTRO
EVALUATIONS
INTERACTIONS
TRANSFORMABLE
MANIPULABLE
VR
CONC
EMPIRIC.
ANALYT.
JUST
ATTRIBUTE EXPLICIT
MAGIC LENS
DYNAMIC QUERIES
DATA REDUCING
FILTERING
INPUT DATA
FOCUS + CONTEXT
OVERVIEW +
DETAILS
SCROLLING
CRITERIA
HUMAN
COMPUTER
TYPES VR
PB INFO OVERLOAD
WWW
ANALYSIS INTERACT
IN BLOGS
VR SEARCH ENGINE
RESULTS
GG DATA
WEBSITE MAPS
CLUSTERING
NETWORKS
& HIERARCHIES
TREEMAP
BOT TREE
CUE TREE
REP EVOL DATA
HIGH TREES
FILE SYS
3D GRAPHS
TRANSPARENT
GEOGRAPHIC
COMPLEX
NETWORK
GRAPH CUT &
OPTIMIZ LAYOUT
GOOGLE MAPS
MIND MAPS
PIXEL-ORIENTED
CHERNOFF FACES
STARPLOTS
ANALYSIS
EXPLORATIVE
PRESE
INTRO


INFOVIS
INTRO
CREATING
PERCEPTION
MULTIVARIATE
ANALYSIS
REF MOD
MENTAL MODELS
SCIENTIFIC VIS°
CRITERIA FOR GOOD
AESTHETICS
CONFIRMATIVE
EXPLORATIVE
PRESENT°
VISUAL REPRESENTA°
VISUAL =VR
MEMORY
SENSORY
PREATT FEAT
COLOR
FORM
SPATIAL POS
MOVEMENT
MAPPING DATA TO ATTRIBUTES
POSTATT PROCESSING
GESTALT PRINC
CONC
PB
GEOM TEC
// COORD
SCATTERPLOT MATRIX
TABLE LENS
// SETS
PIXEL-ORIENTED TEC
GLYPH
STAR PLOTS
FIG 1 GROUND
PROXIMITY
SIMILARITY
CLOSURE
CONTINUITY
OTH
DESIGNING VIS
LIN DATA
2D VS 3D
PREPROC DATA
VISUAL MAPPING
VIEWS
INFOVIS DATA → KNOWL
LOCALITY
ENHANC
GRADUAL EXCELLENCE
INTEGRITY
MAXIMIZE DATA-INK RATIO
ANALYSIS
PROPERTIES
ELEMENTS
GRAPHICAL
SPATIAL SUBSTRATE
GNC
(MAZZA)


PERCEPTION
PRE-ATTENTIVE
PROPERTIES
COLOR
HUE
INTENSITY
LT
ST
SENSORY
FORM
LENGTH
WIDTH
SIZE
CURVATURE
SPATIAL GROUPING
ADDED MARKS
SHAPE
NUMEROSITY
ORIENTATION
SPATIAL POSITION 2D
STEREOSCOPIC DEPTH
CONCAVITY/CONVEXITY
MOVEMENT
MOTION
FLICKER
MEMORY
CONCLUSION
GESTALT
= GROUP
PRINCIPLES
WHOLE > COMPONENTS
(MEANING)
UNIFIED
OTH
SYMMETRY
CONNECTION
COMMON REGION
GROUPS
CONTINUITY
CLOSURE
SIMILARITY
PROXIMITY
FIGURE/GROUND
POST-ATTENTIVE
PROCESSING
SAVE ANY INFO!
= ATTENTION
MAPPING DATA
TO-ATTRIBUTES
Q = QUANTITATIVE
O = ORDINAL
C = CATEGORICAL
Q O C
HUE
INTENSITY
COLOR
HAS NO CUMULATIVE EFFECTS ON PERCEPTION!
LENGTH
ADDED MARKS
SHAPE
FORM
(MAZZA)


LT
ST
SENSORY
CONCLUSION
MEMO
PERCEPT
GESTALT
PRINCIPLES
WHOLE > COMPONENTS
(MEANING)
UNITED
POST-ATENTIVE
PROCESSING
= ATTENTION
HAS NO
OTH
SYMMETRY
CONNECTION
COMMON REGION
GROUPS
CONTINUITY
CLOSURE
SIMILARITY
PROXIMITY
FIGURE / GROUND
HUE
INTENSITY
LENGTH
ORIENTATION
SHAPE


3
PRE-ATTENTIVE
PROPERTIES
COLOR
HUE
INTENSITY
FORM
LENGTH
WIDTH
SIZE
CURVATURE
ORIENTATION
SPATIAL GROUPING
ADDED MARKS
SHAPE
NUMEROSITY
SPATIAL POSITION 2D
MOVEMENT
MOTION
FLICKER
STEREOSCOPIC DEPTH
CONCAVITY/CONVEXITY
MEMORY
ERCEPTION
MAPPING DATA
TO-ATTRIBUTES
Q = QUANTITATIVE
O = ORDINAL
C = CATEGORICAL
NO CUMULATIVE EFFECTS ON PERCEPTION!
(MAZZA)