



DAL SEMPLICE

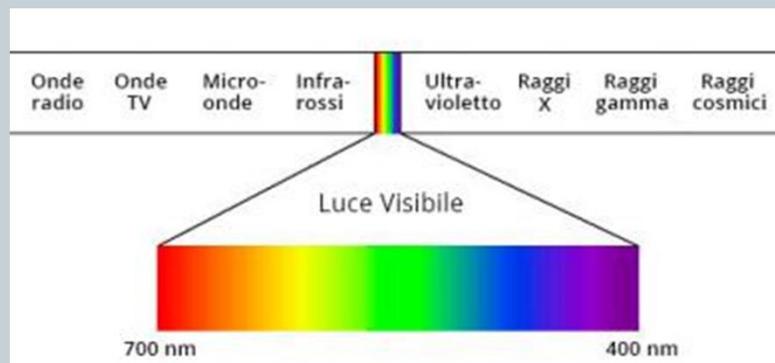
AL COMPLESSO

*simmetrie e armonie del mondo vegetale*

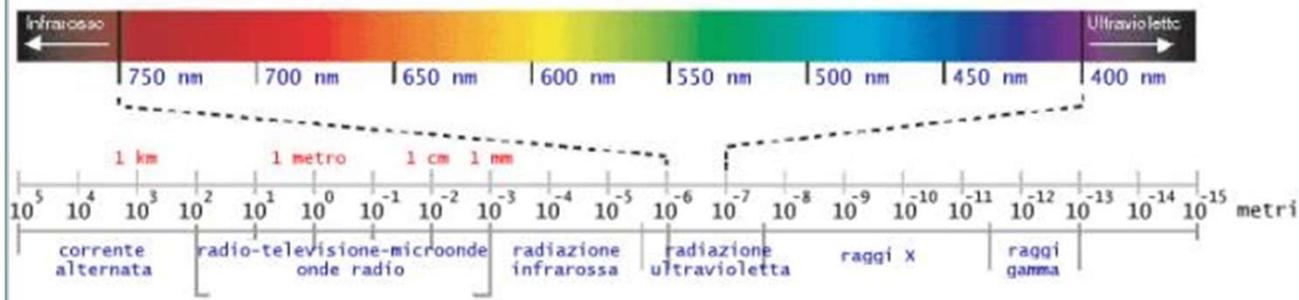
*la nostra finestra sulla realtà*



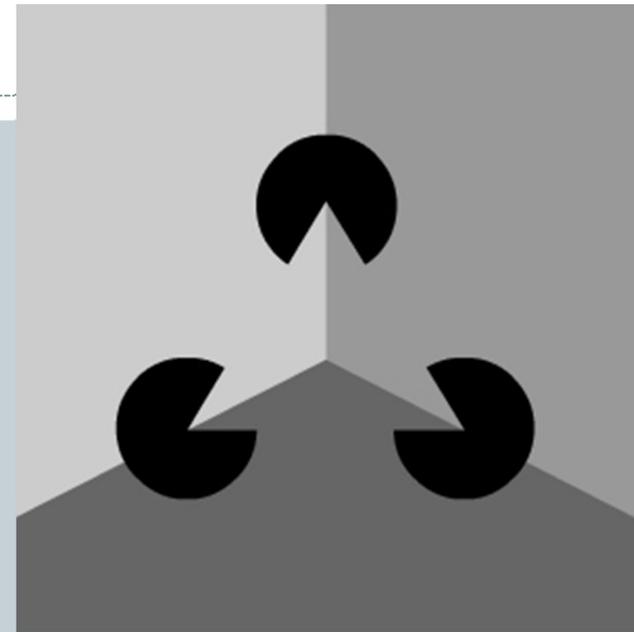
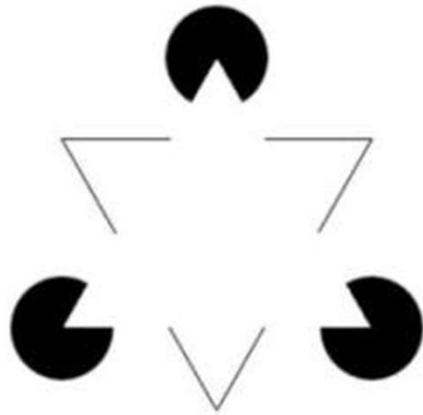
# la nostra finestra sulla realtà



spettro di luce visibile all'occhio umano



## *plasticità cerebrale*



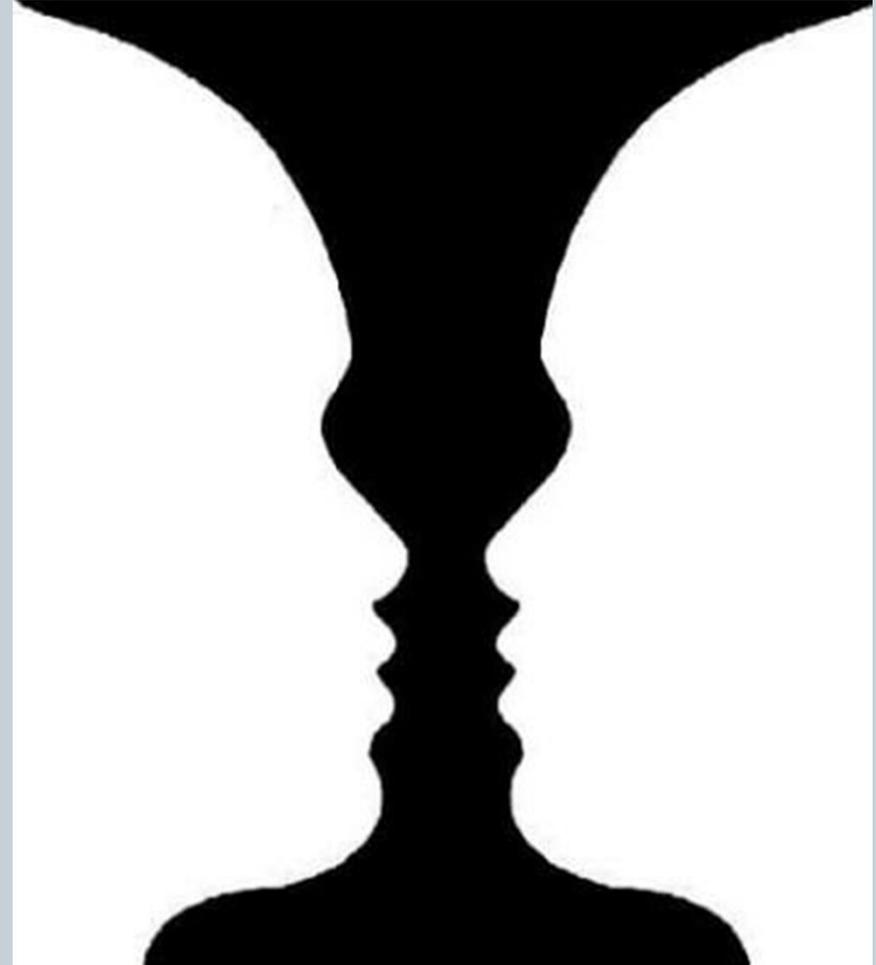
"Da uno stiduo dlela Cambridge Urnievristy, l'oridne dlee letetre in una paorla non ha ipmotranza, la sloa csoa impoanrtte é che la pimra e l'ulmtia sinao nlea pozisione corttreta. Tttue le alrte letetre pososno esesre totamletne diosrdiante e tu sarai sepmre in grdao di legegere sezna problemi. Quetso é dovtuo al ftato che il cevrello umnao non lgege ongi letetra ma la paorla glolabmnete."

*le parole che confondono il cervello*

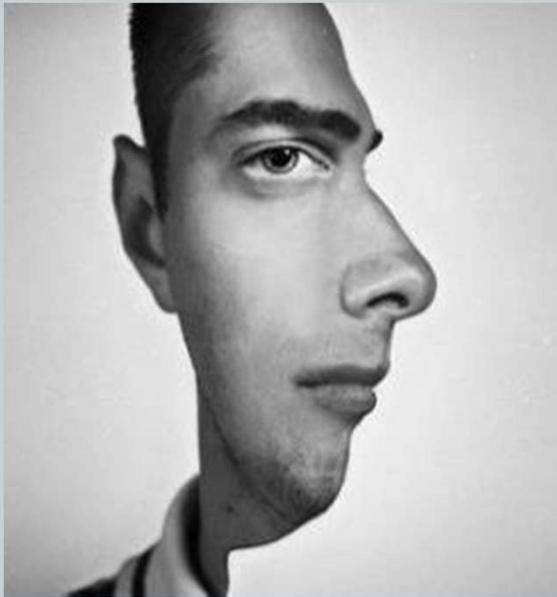


**ARANCIO NERO VERDE**  
**ROSSO BLU CELESTE**  
**VIOLA GIALLO ROSA**  
**CELESTE VERDE VIOLA**  
**ROSA GIALLO ROSSO**  
**NERO BLU ARANCIO**

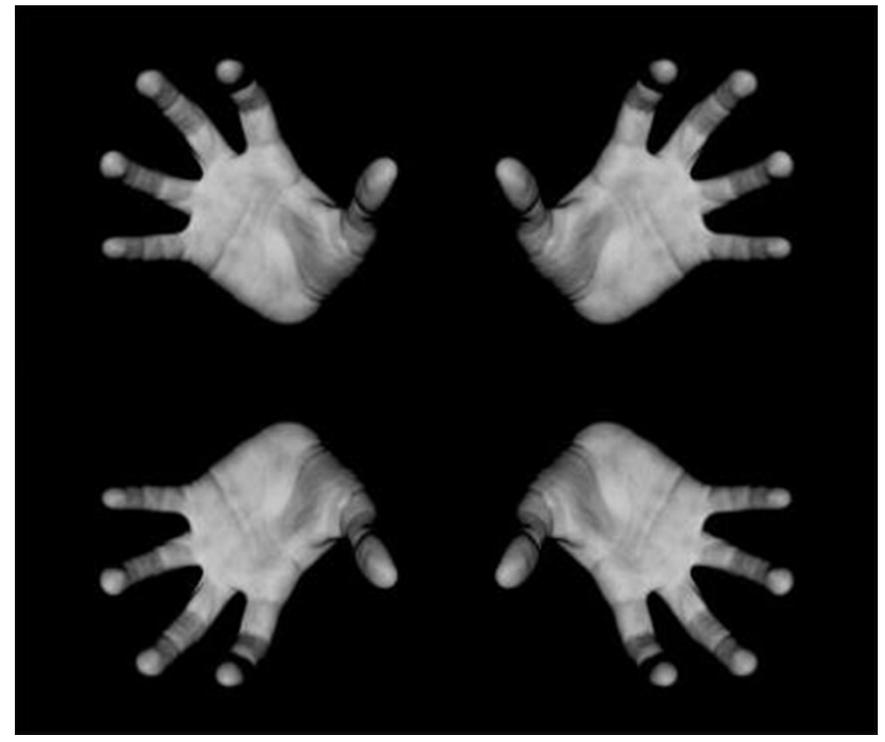
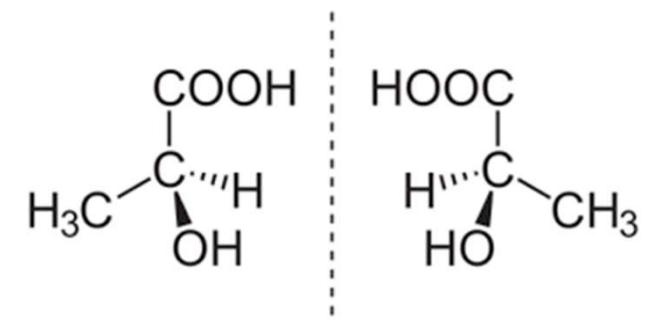
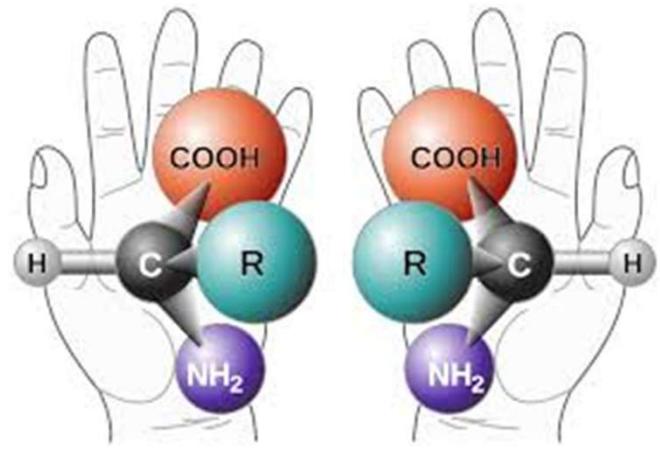
*le immagini che confondono il cervello*



*le immagini che confondono il cervello*



*la Natura è di destra o di sinistra?*



*la Natura è di destra o di sinistra?*



*la Natura è di destra o di sinistra?*



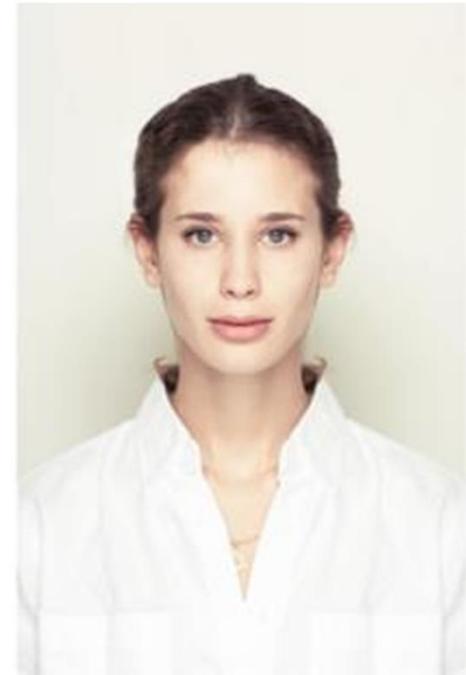
*la Natura è di destra o di sinistra?*



*volti speculari*

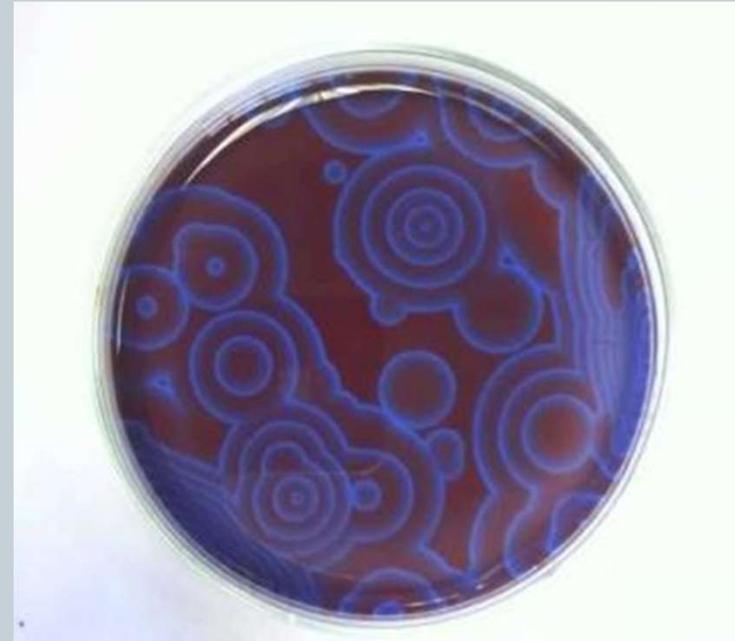
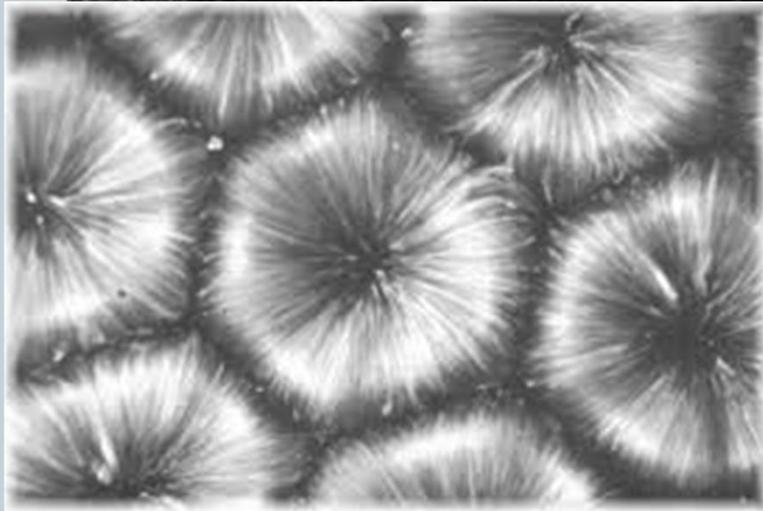
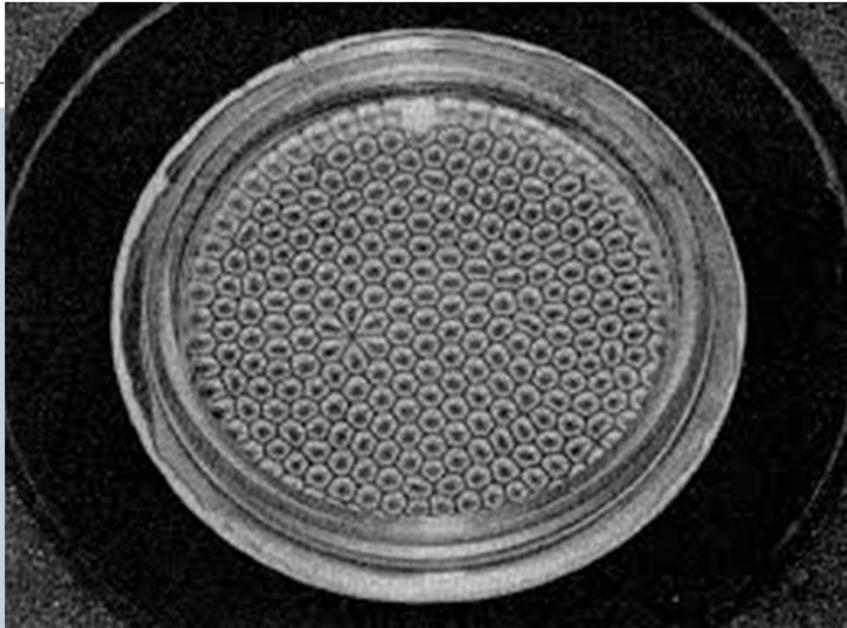


*volti speculari*

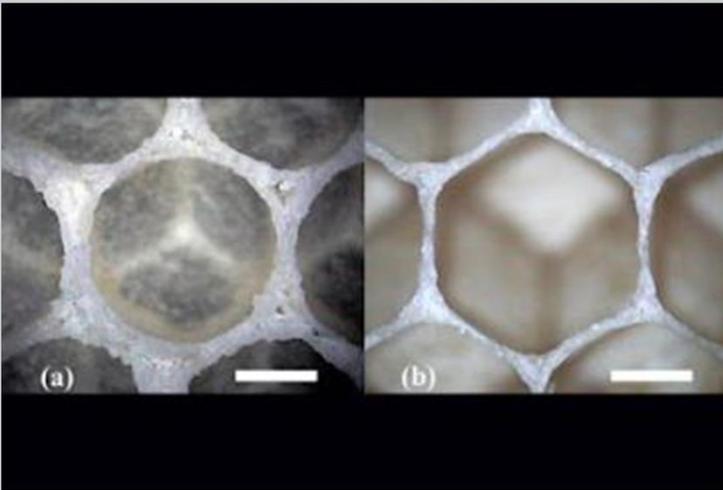


*processi di autorganizzazione:*

*celle di Bernard / reazione di Beluzov-Zhabotinsky*

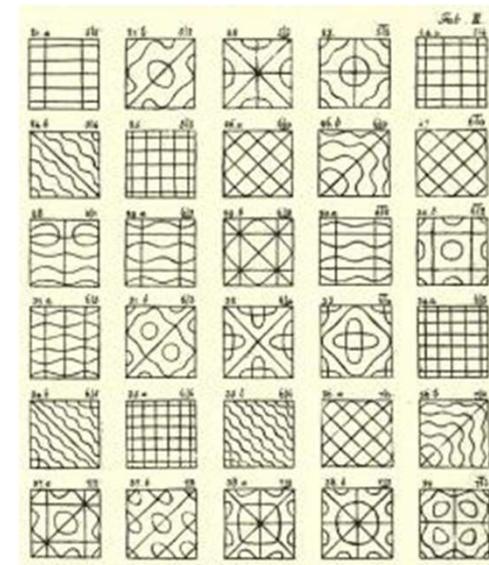
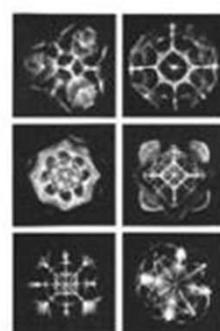
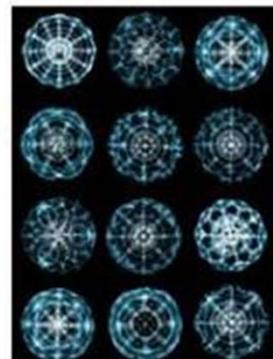
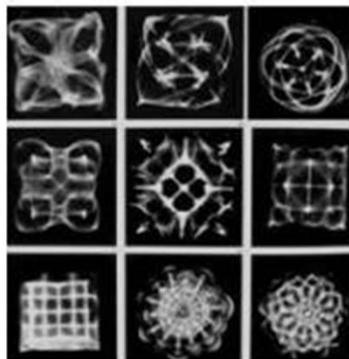
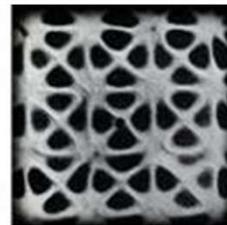
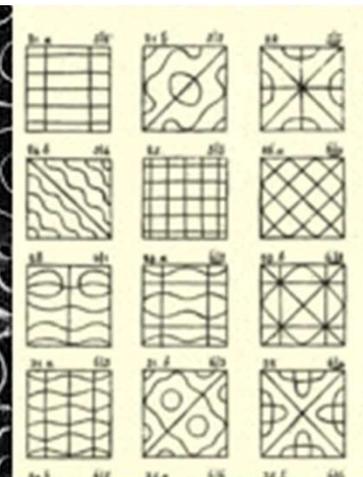
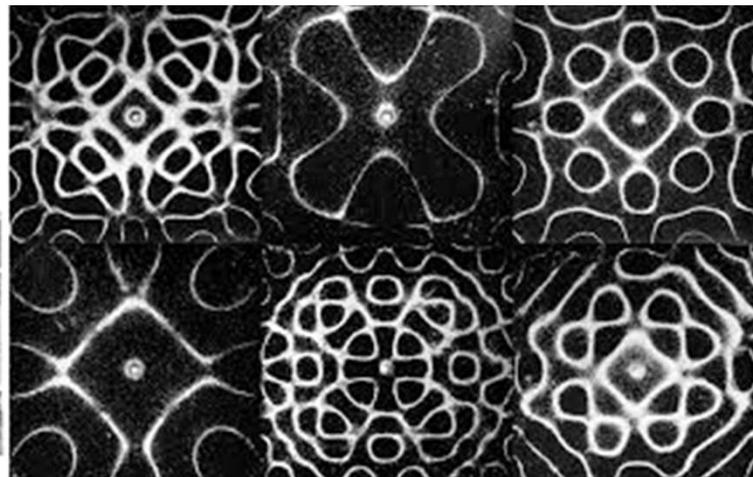


## *processo indotto di autorganizzazione*

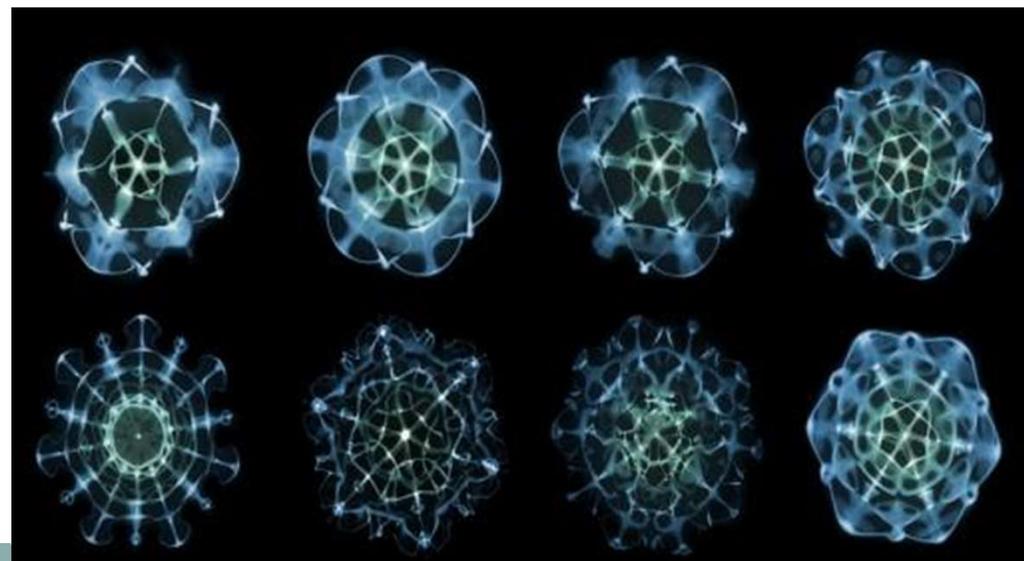
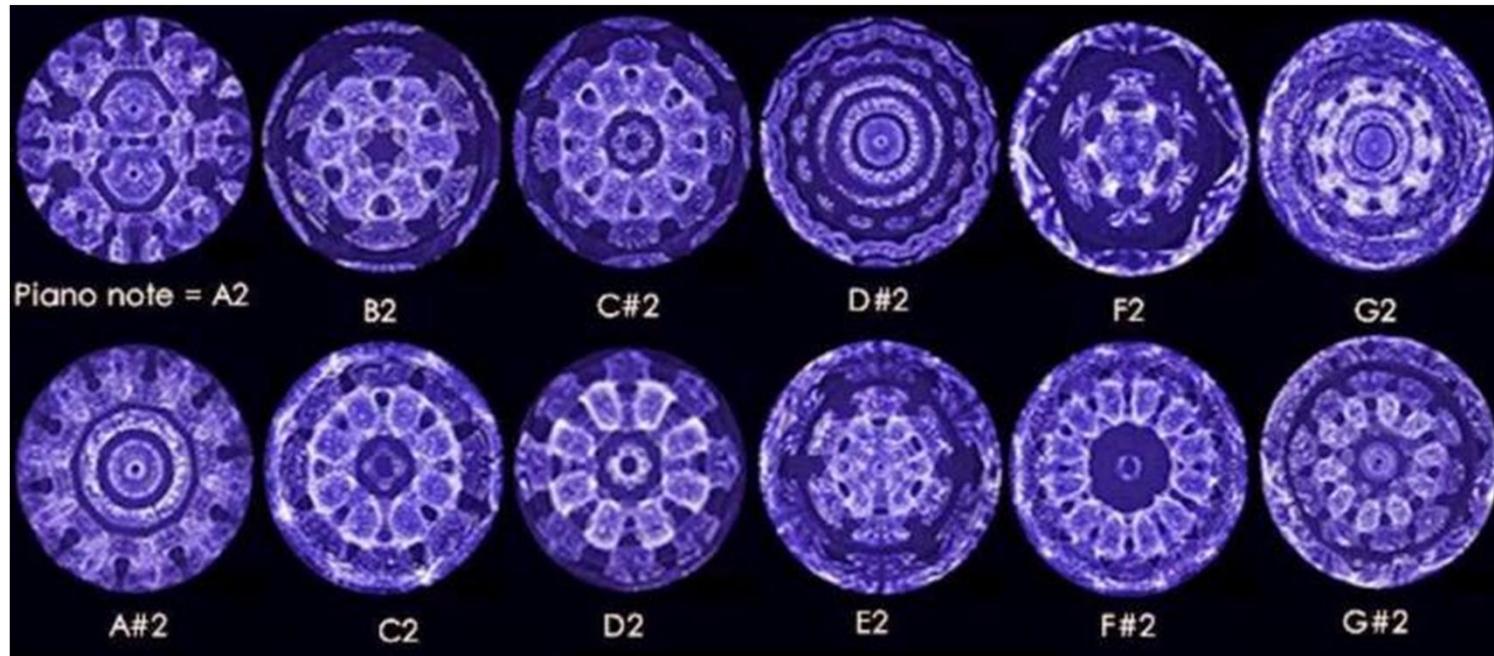


a) cella in origine b) cella dopo due giorni

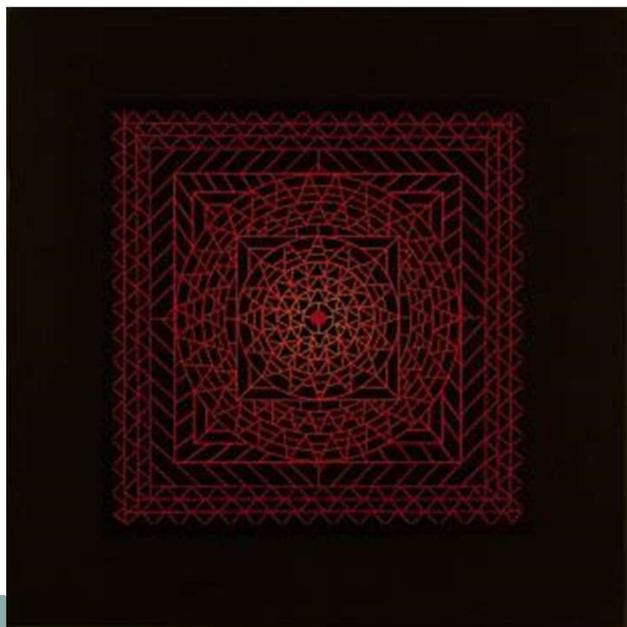
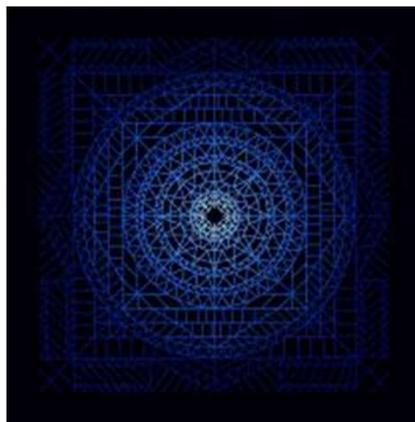
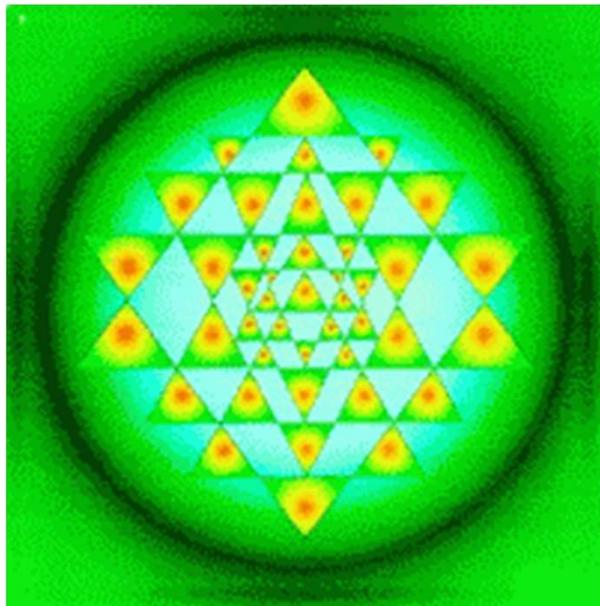
# *cimatica*



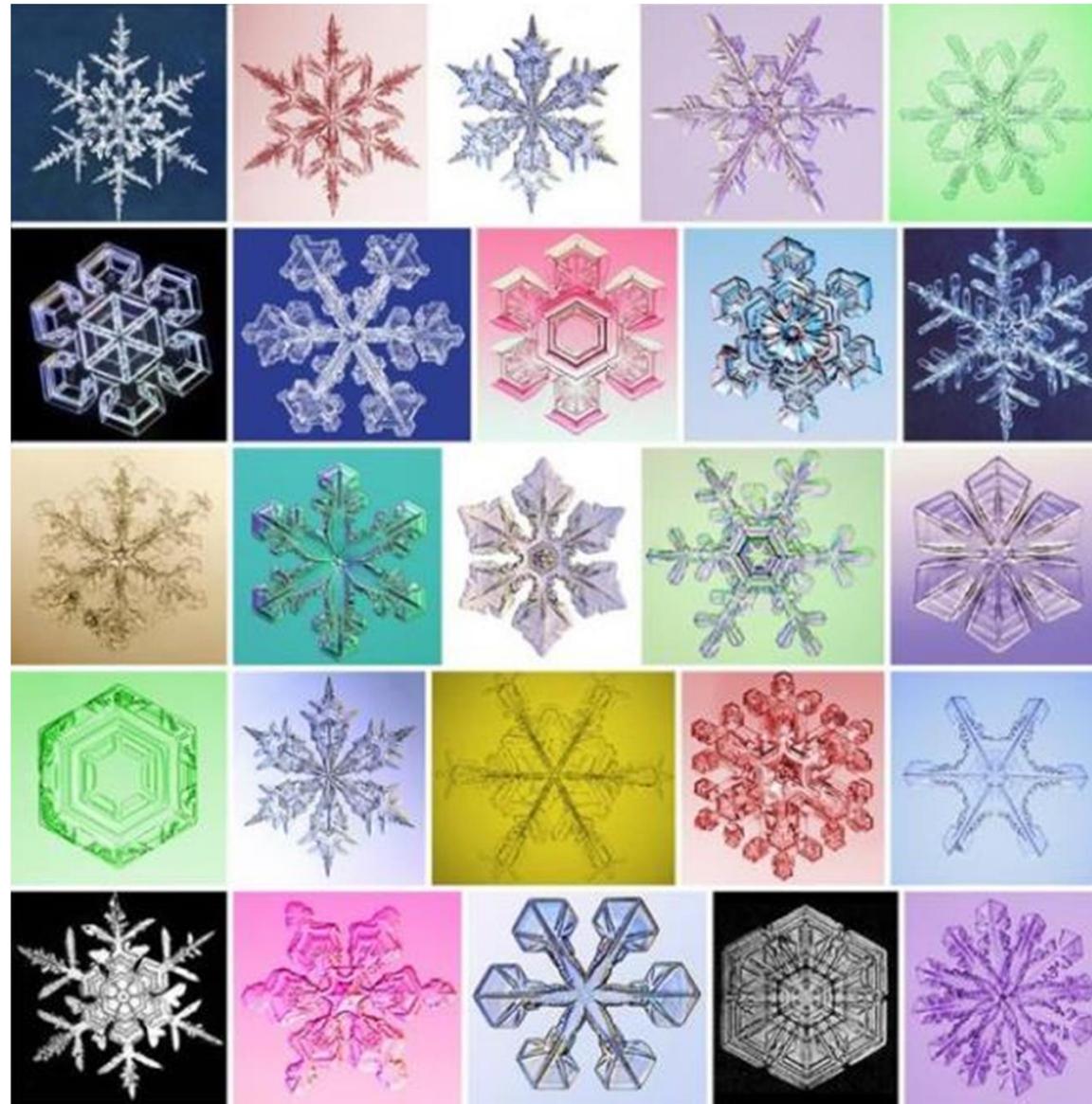
*cimatica moderna*



*cimatica - forme mandaliche*



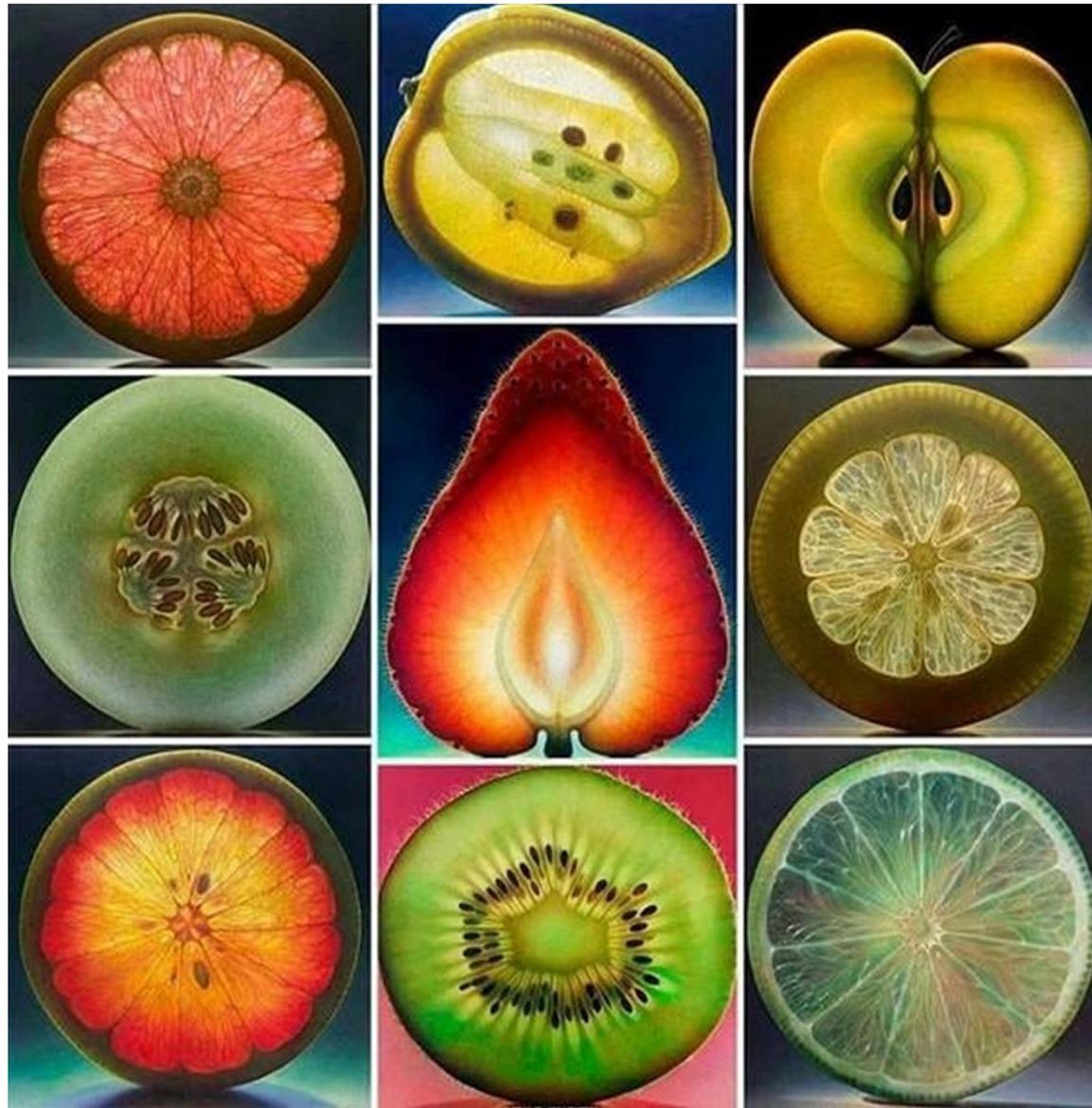
*forme mandaliche naturali*



*forme mandaliche naturali*



*forme mandaliche naturali*

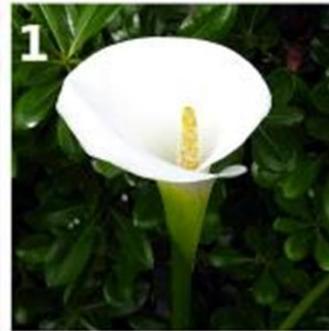




- infiorata a Pietra Ligure  
- mandala di monaci tibetani



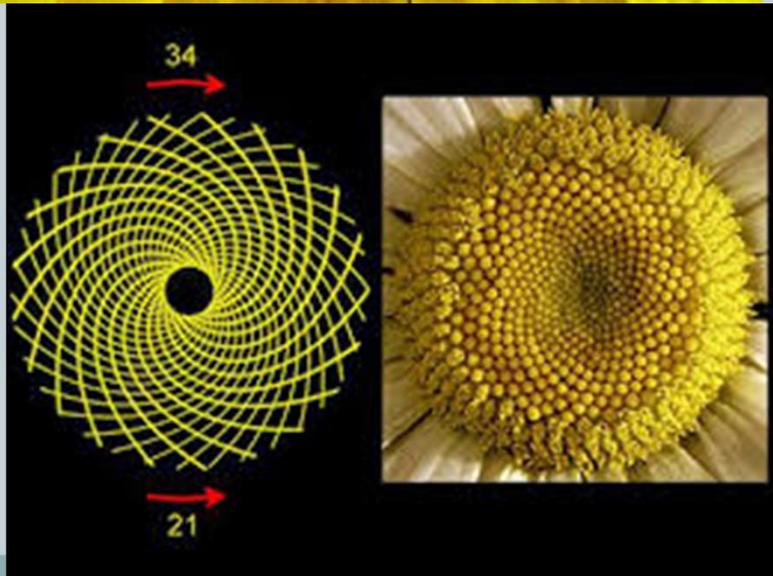
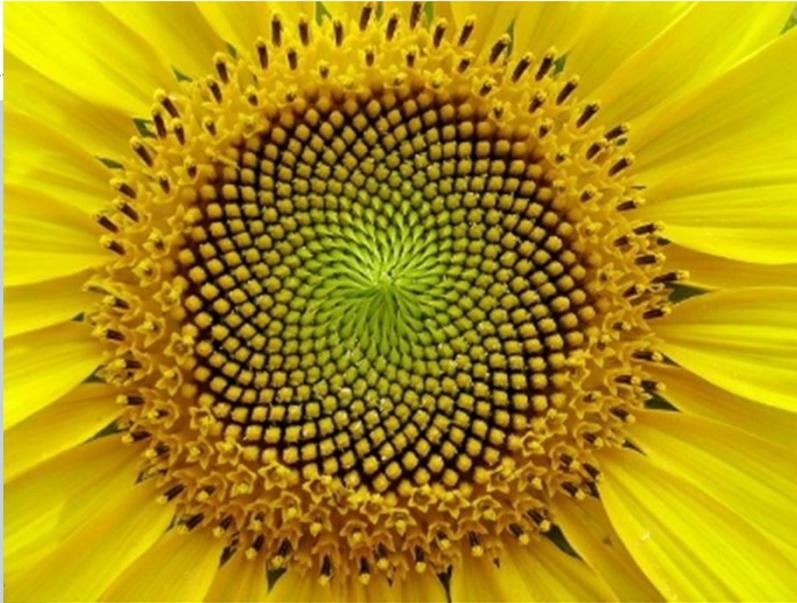
# armonia delle proporzioni



## Fiori di Fibonacci

- 0 - Mimosa rossa
- 1 - Zantedeschia
- 1 - Spatiphyllum
- 2 - Euforbia
- 3 - Bouganvillea
- 5 - Parnassia
- 8 - Cosmos
- 13 - Euryops
- 21 - Margherita comune
- 34 - Girasole
- 55 - Margherita dei muri
- 89 - Erigeron

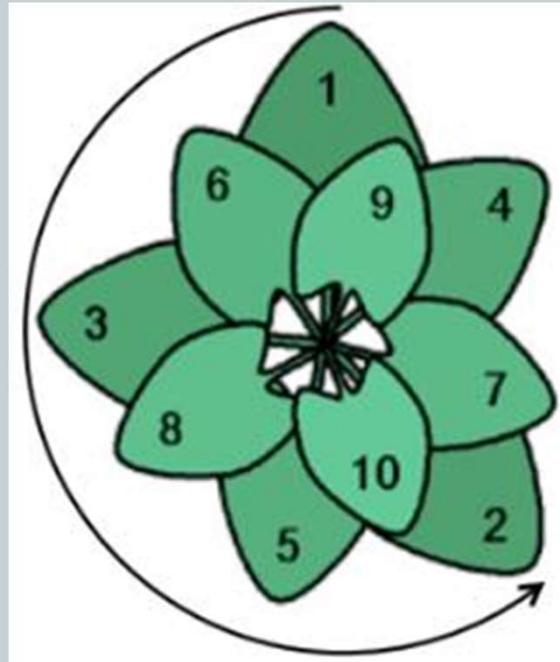
# armonia delle proporzioni



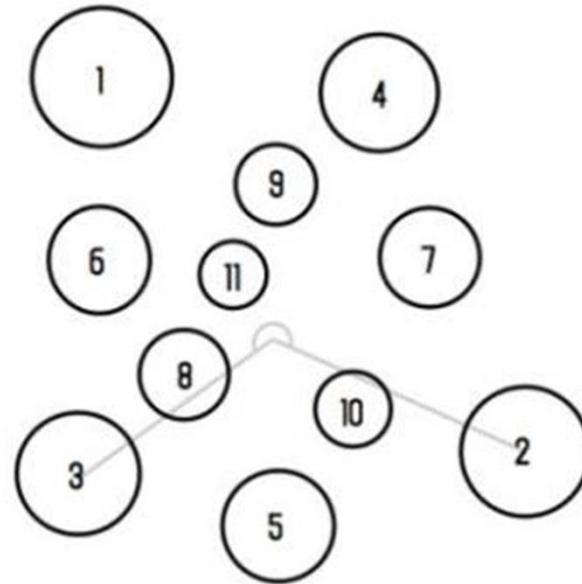
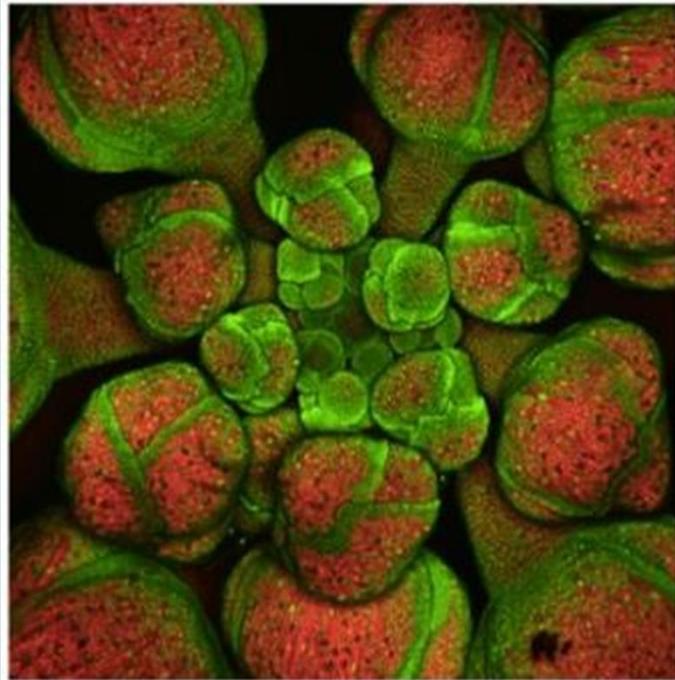
## *armonia delle proporzioni*



nelle piante il rapporto tra qualunque numero e quello precedente nella serie di Fibonacci tende verso un valore ben definito: 1,618. Girando attorno ad uno stelo e muovendosi dal basso verso l'alto, si incontra una foglia o un fiore ogni  $222,5^\circ$ , valore che si ottiene dividendo l'angolo giro di  $360^\circ$  per 1,618



## armonia delle proporzioni



sulla sinistra: immagine al microscopio del meristema apicale di Arabidopsis sulla destra: rappresentazione schematica della posizione dei boccioli; i fiori più giovani sono al centro, mentre quelli più vecchi, e più grandi, si sono spostati verso l'esterno. L'angolo che si forma tra un bocciolo e quello successivo corrisponde a  $222,5^\circ$

*il caos della Natura*



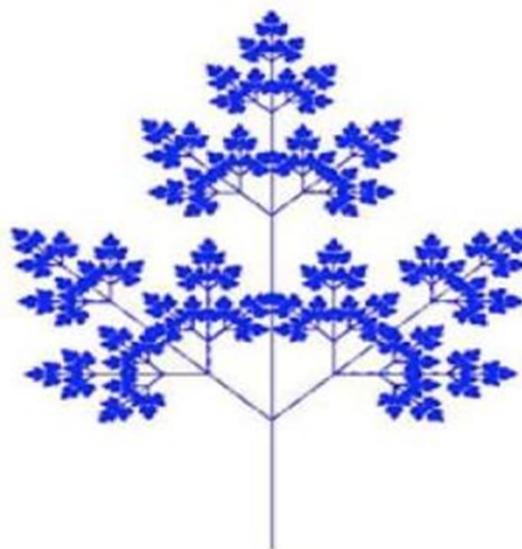
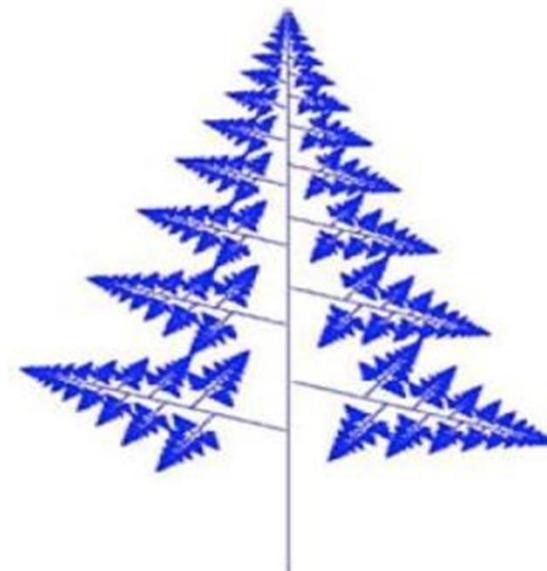
*il caos della Natura*



*il caos della Natura*

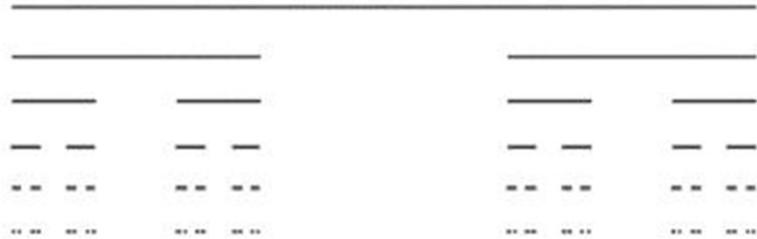


*il caos ordinato della Natura*

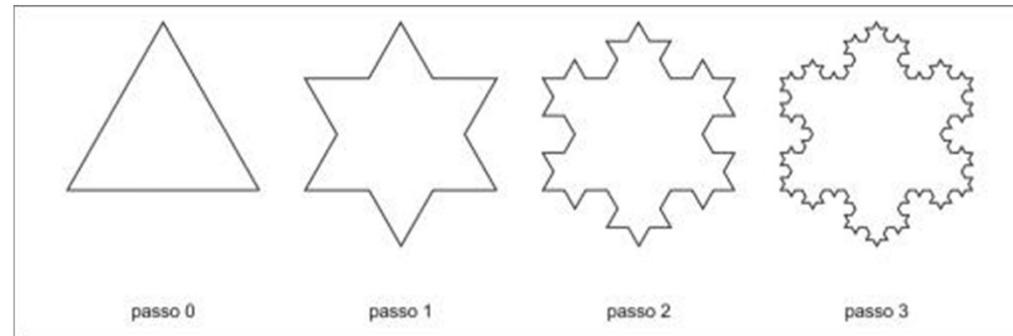


# *il caos ordinato della Natura*

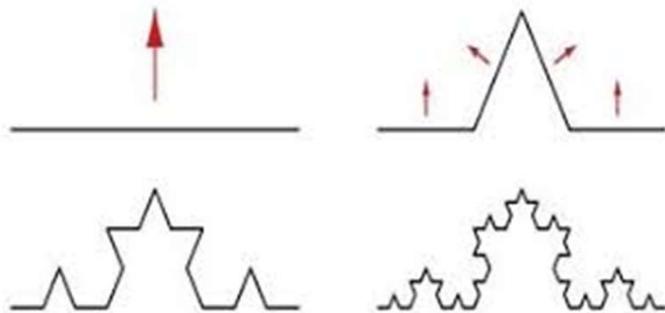
## **polveri di Cantor**



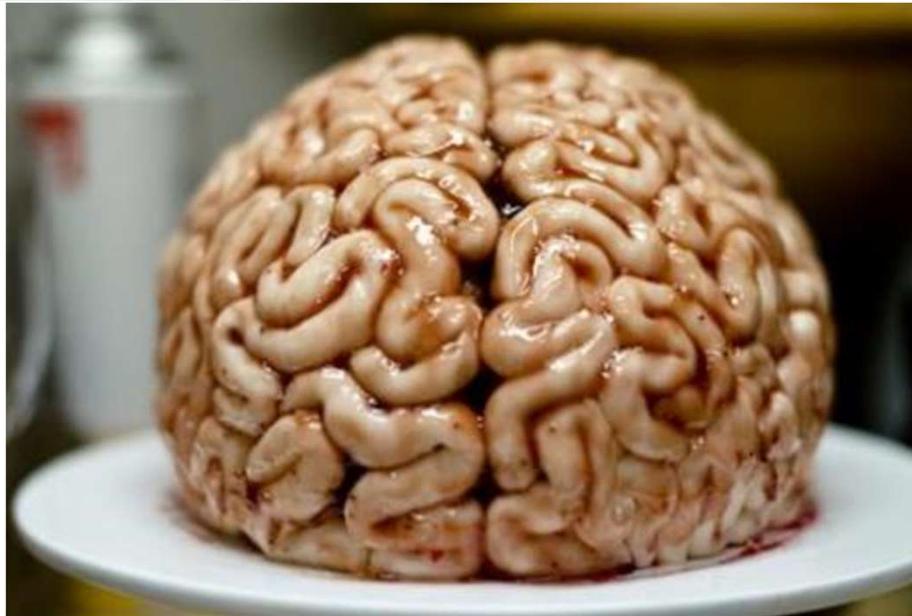
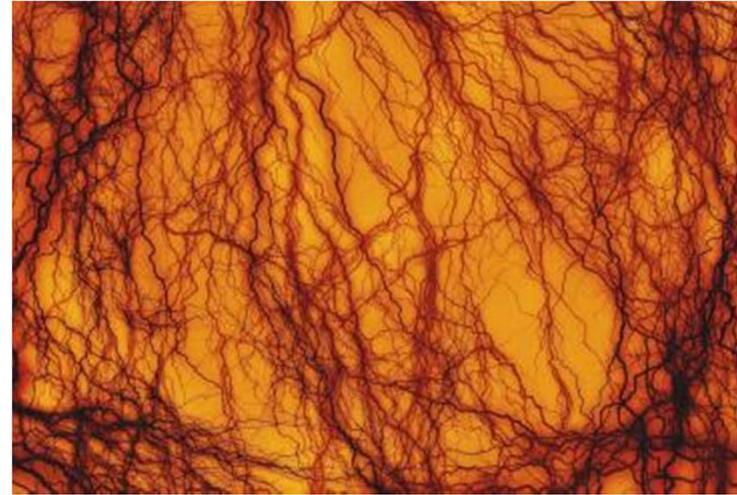
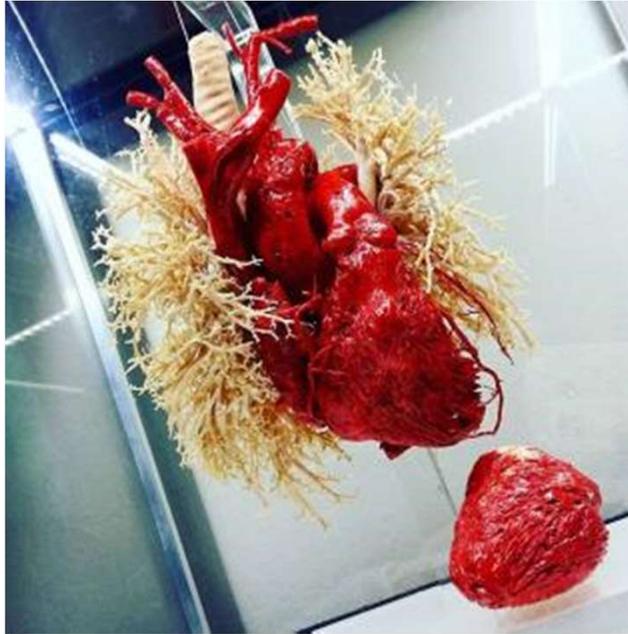
## **isola di Koch**



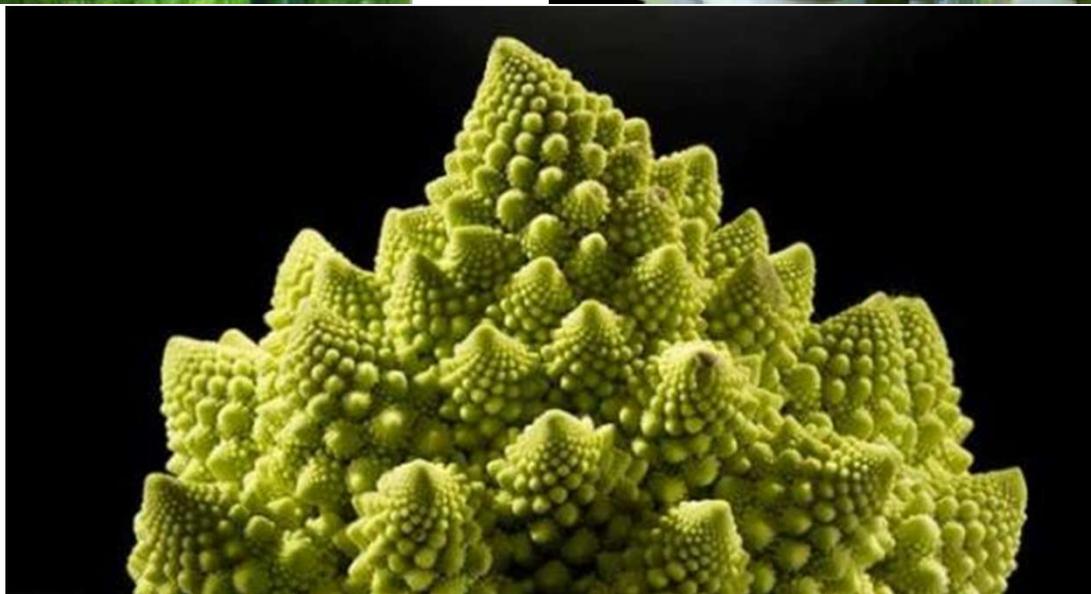
## **curva di Koch**



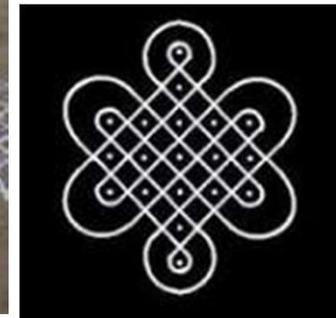
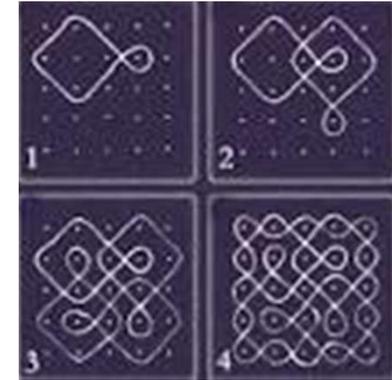
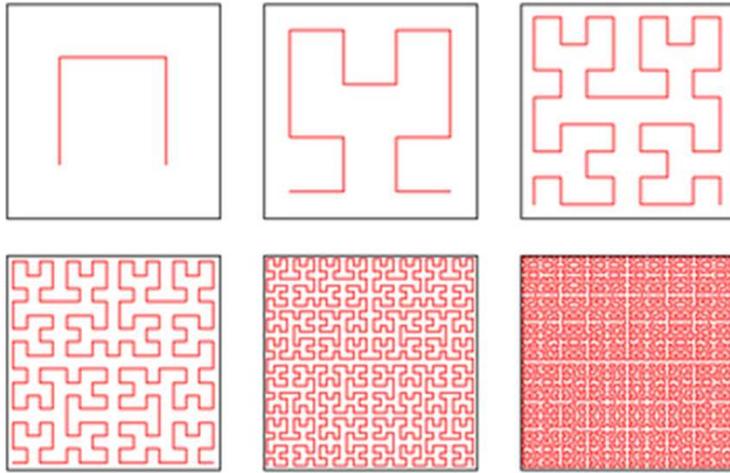
*il caos ordinato - curva di koch*



*il caos ordinato della Natura*



*il caos ordinato - linee di Hilbert*



*i territori della mente*



*i territori della mente*



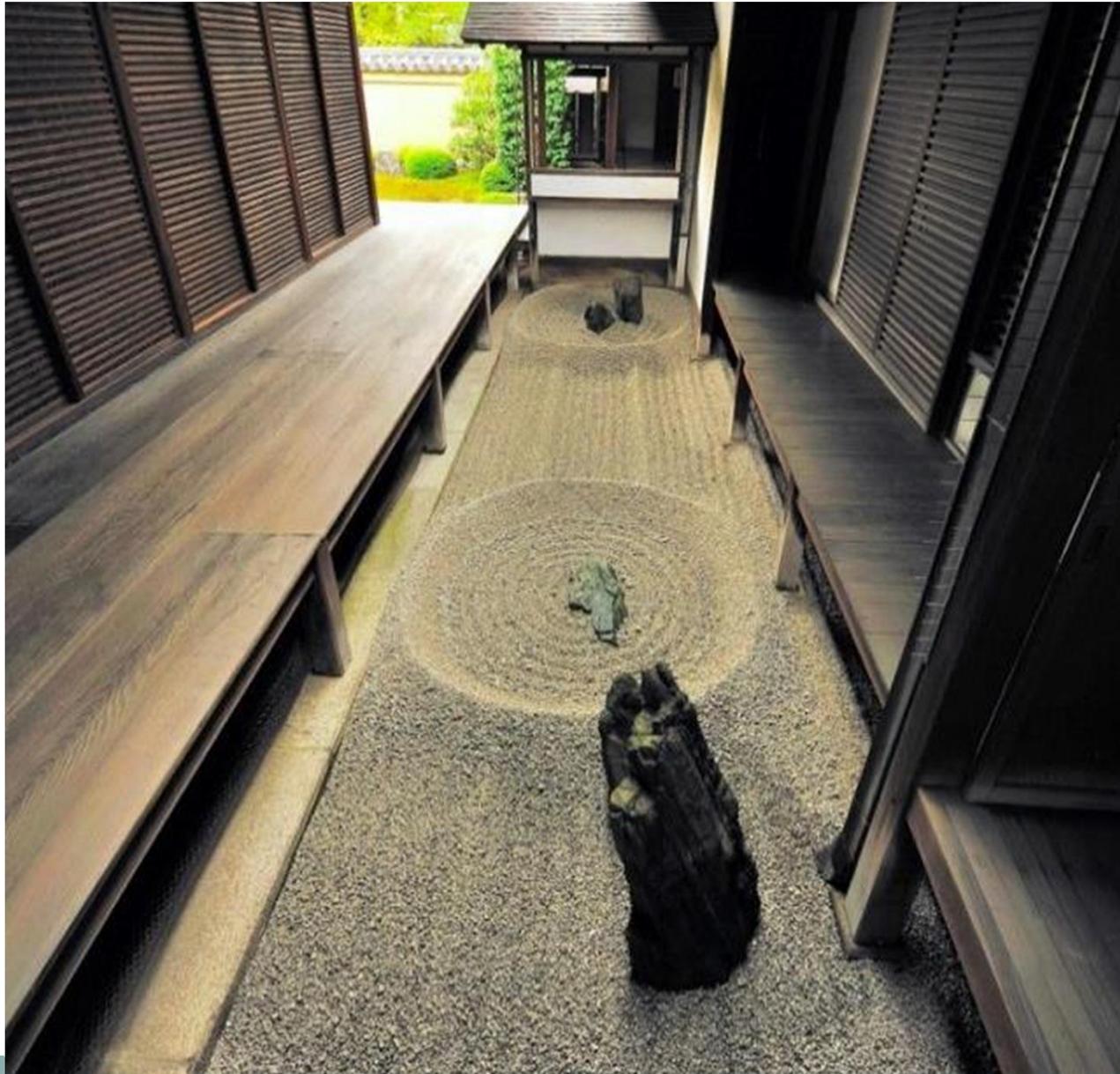
*i territori della mente*



*i territori della  
mente*



*i territori della  
mente*





*“pensare è molto più che essere logici”*

Niels Bohr

grazie per l'attenzione