

PRESENEČENJA V FIZIKI: OPTIČNE PREVARE

Mitja Rosina

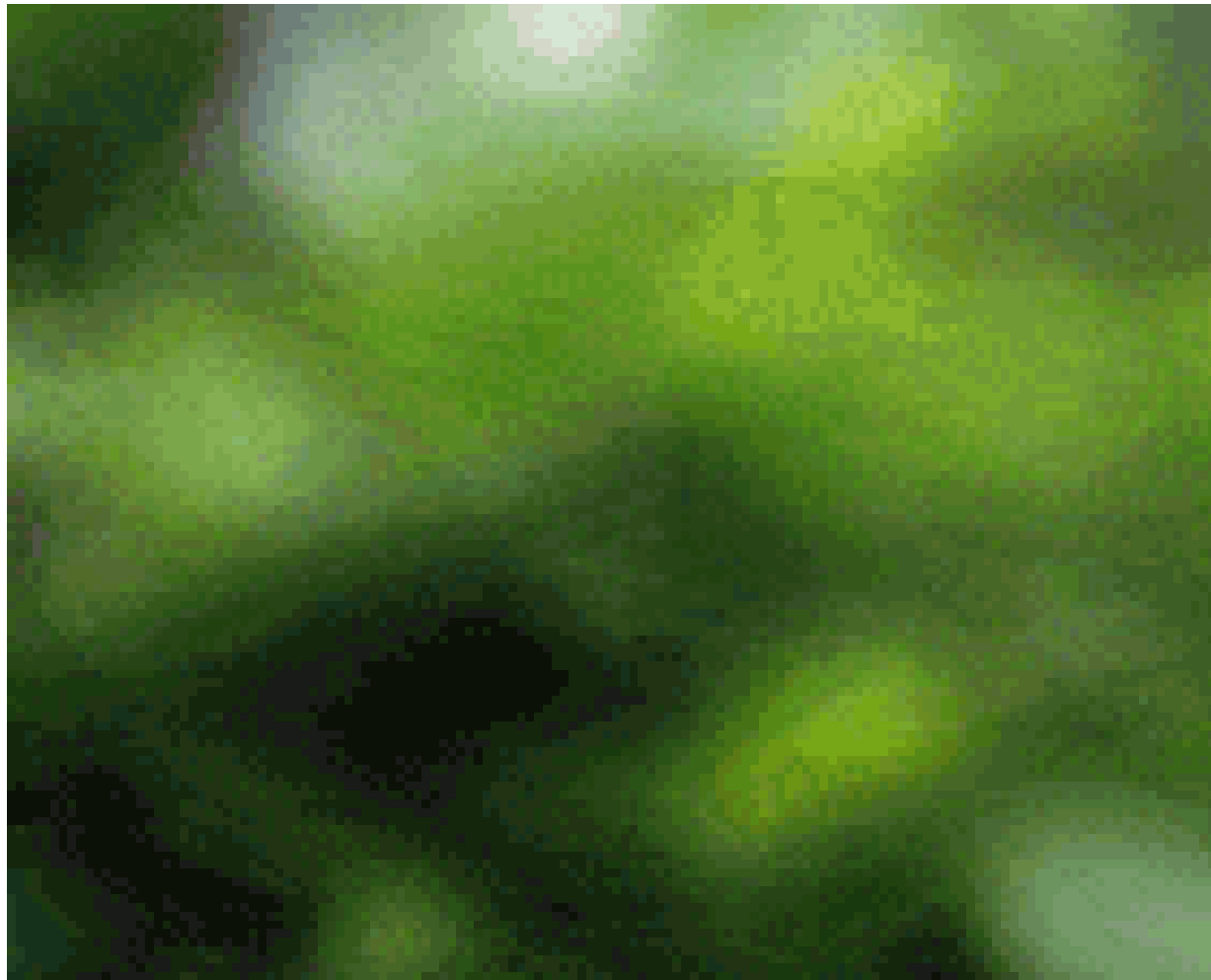
Fakulteta za matematiko in fiziko

Ljubljana, 18. marca 2011

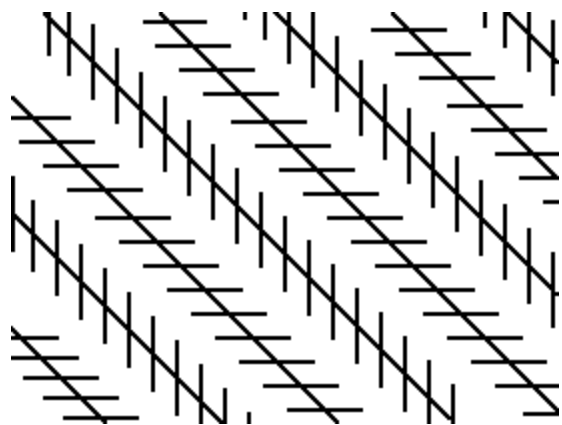
Optične prevare (imenujemo jih tudi optične iluzije) so pojavi, da nek predmet ali sliko drugače vidimo ali tolmačimo, kot je v resnici. S prikazom optičnih prevar lahko poživimo predavanja o perspektivi, barvah, fiziologiji očesa in interpretaciji slike v možganih. Pokazal bom nekaj vrst iluzij, katerih razlaga kar sili k razmisleku:

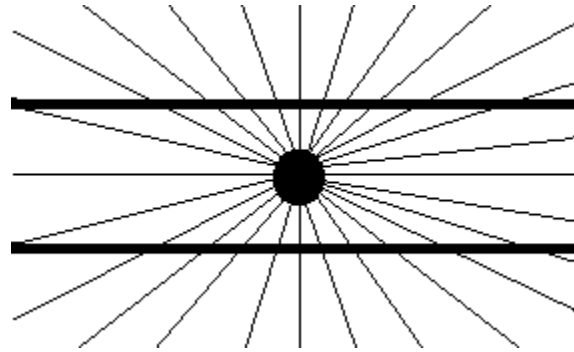
VRSTE ILUZIJ.

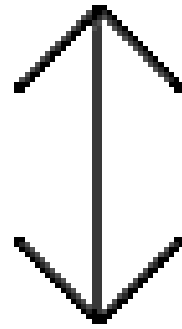
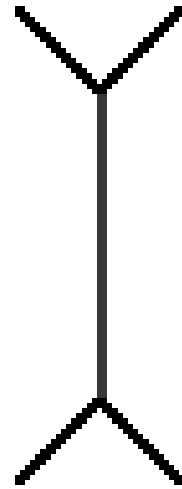
1. Geometrijske -- **Navidezna perspektiva**
2. Geometrijske – **Nemogoča perspektiva**
3. Fiziološke -- **Naknadna komplementarna slika**
4. Fiziološke -- **Mešanje barv**
5. Psihološke -- **Preskakovanje pozornosti**
6. Psihološke -- **Interpretacija glede na izkušnje**
7. Fiziološko-Psihološke – **Pretirani kontrasti**
8. Fiziološko-Psihološke – **Navidezno gibanje**
9. Fiziološko-Psihološke – **Magično oko**

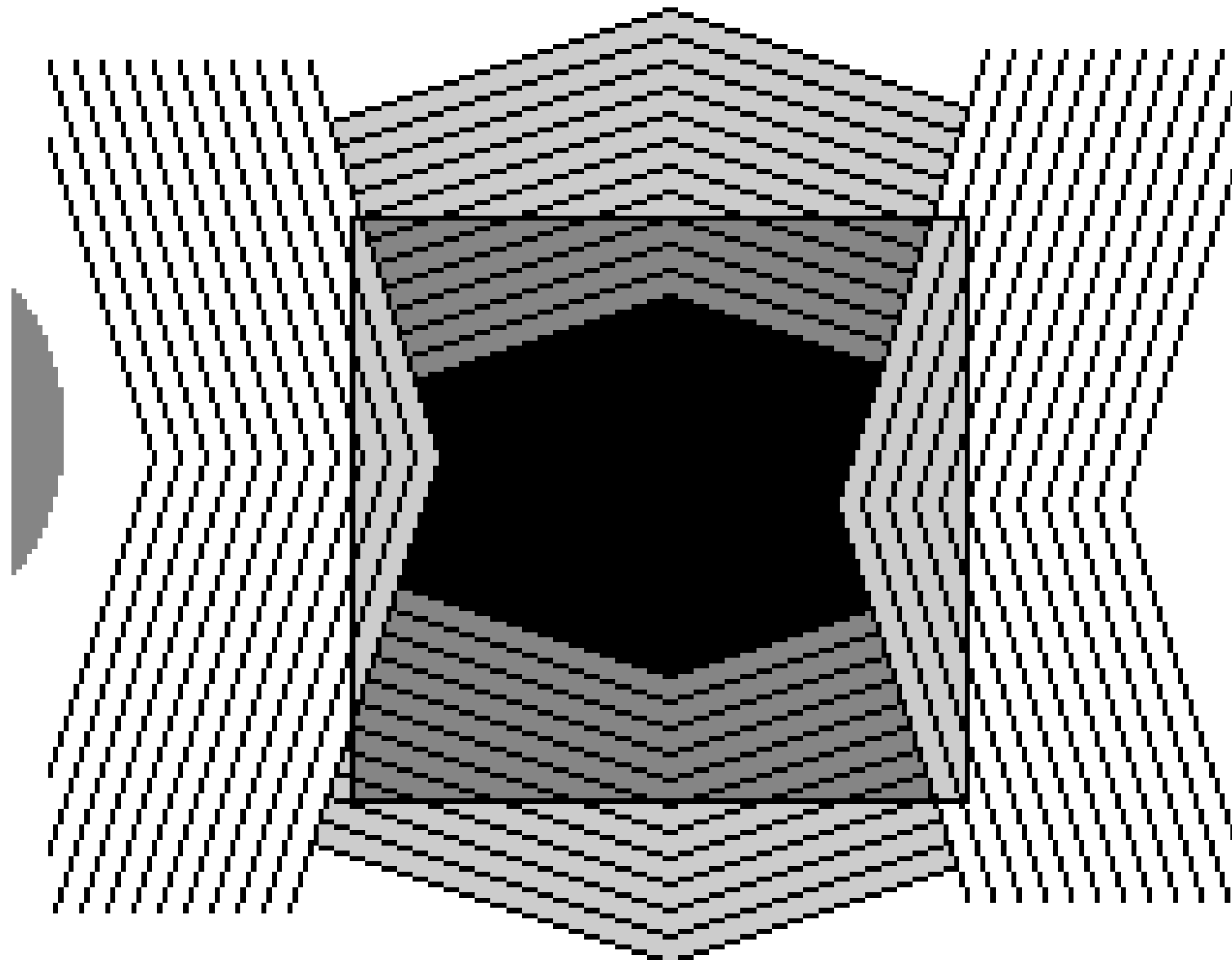


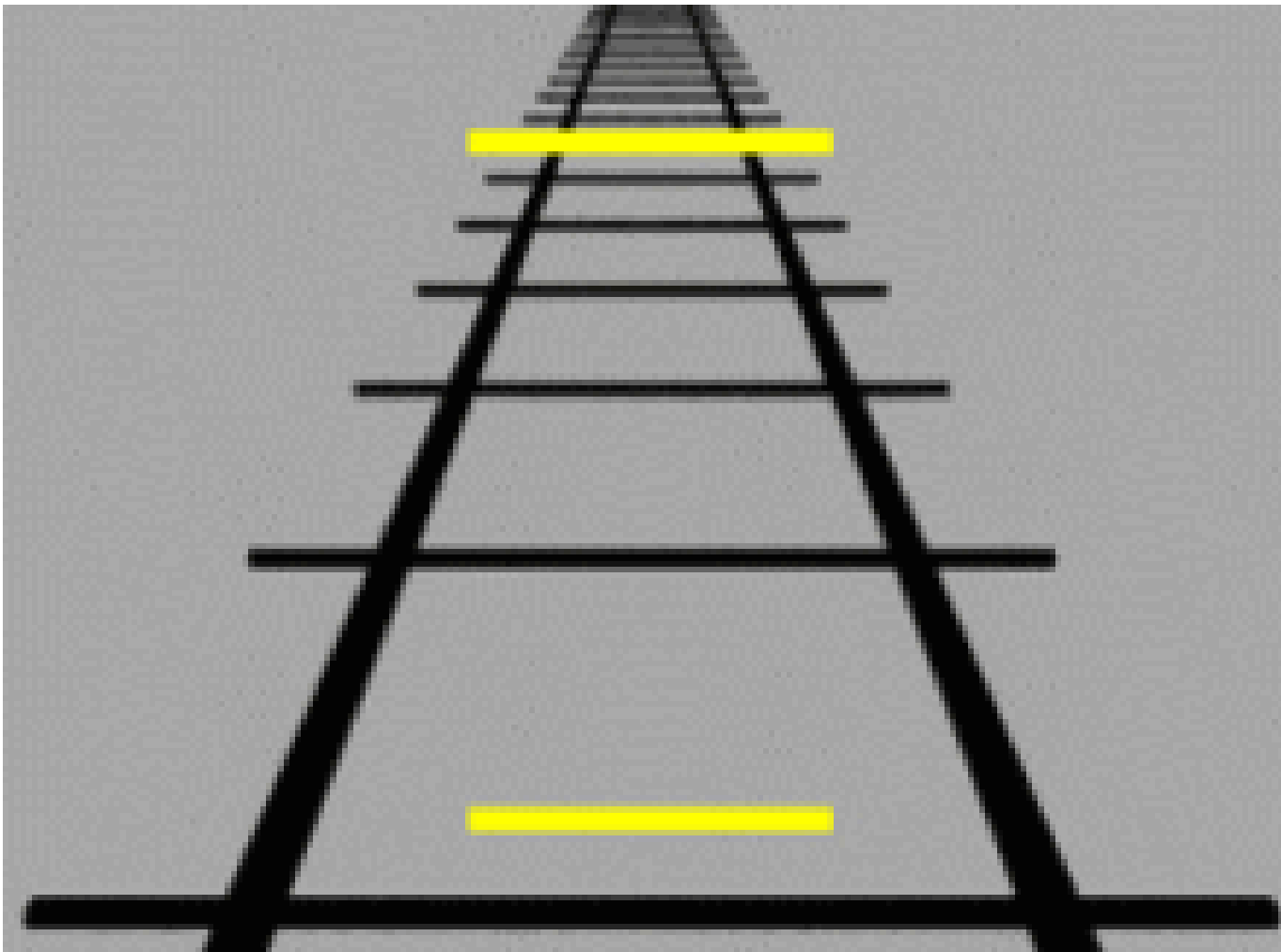
1. Geometrijske -- Navidezna perspektiva



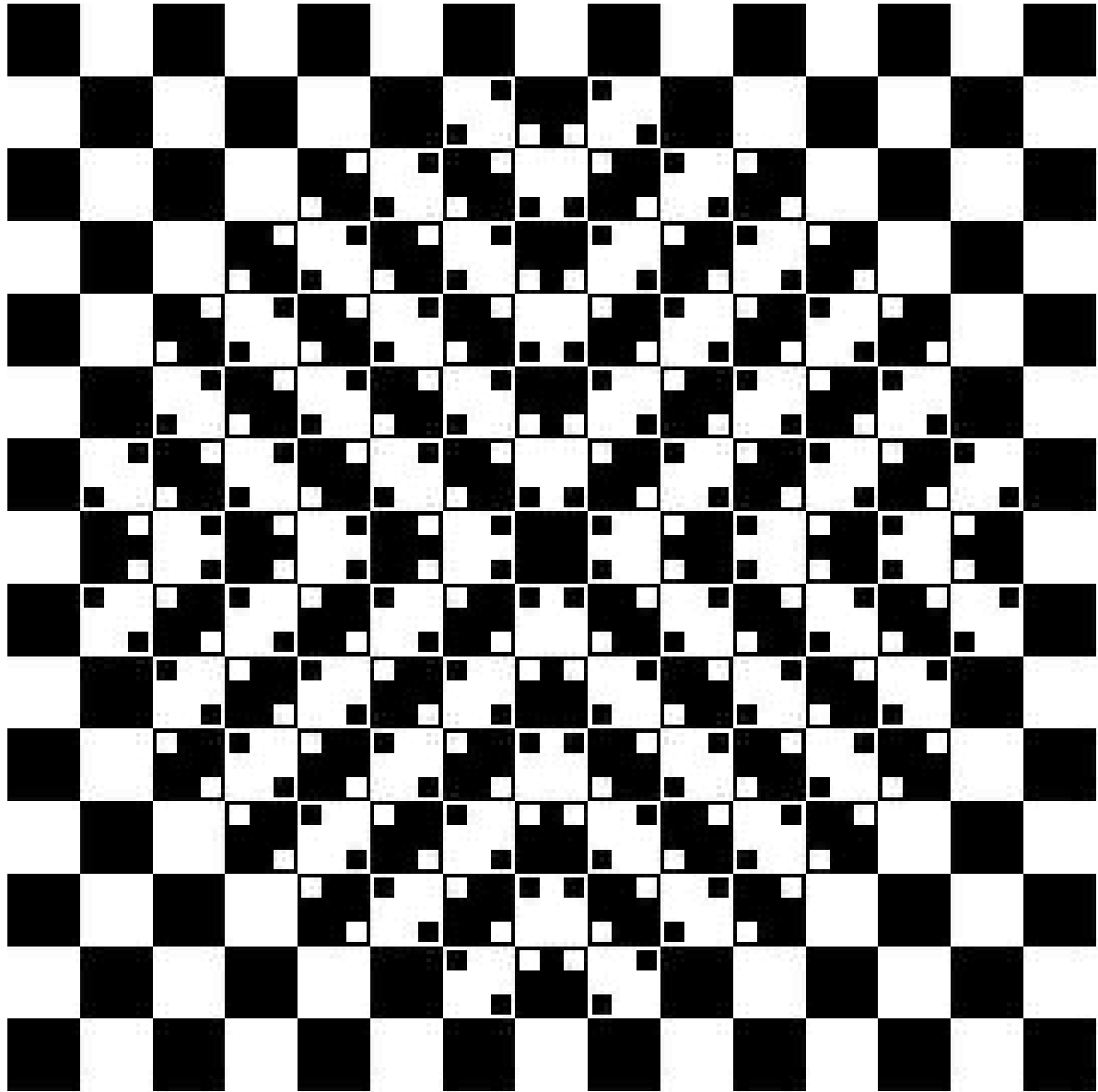


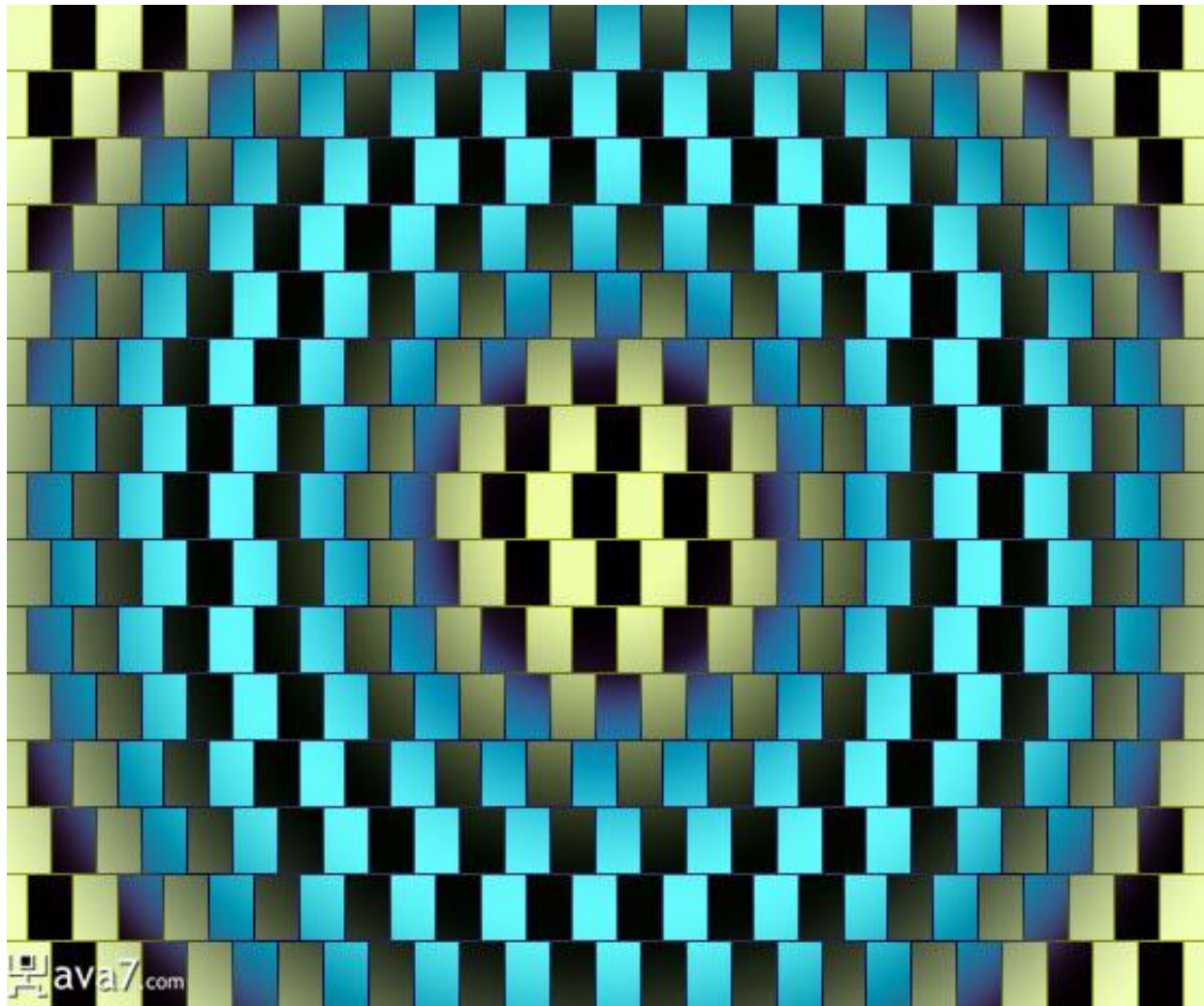


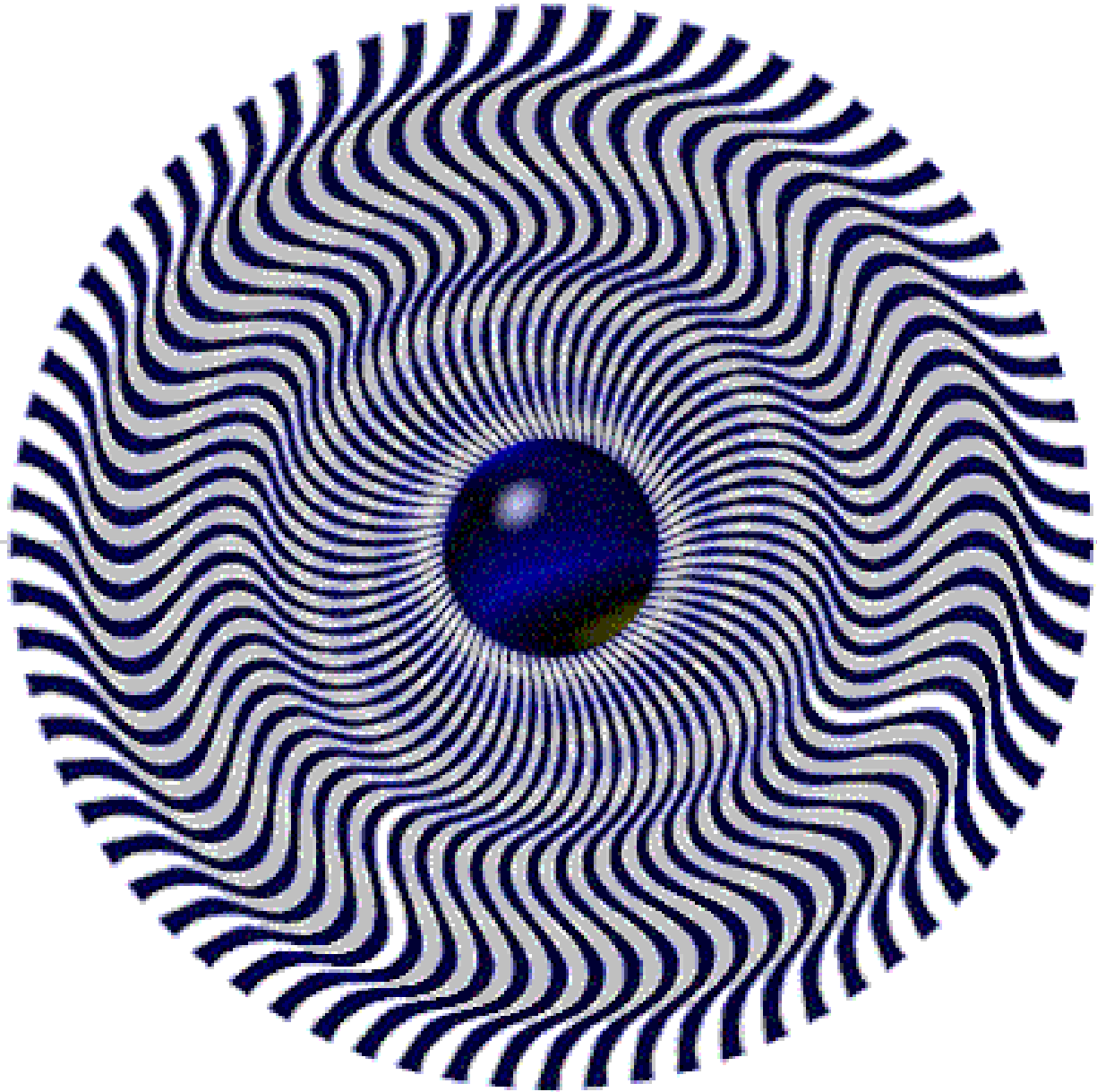




Katera rumena letva je daljša ?

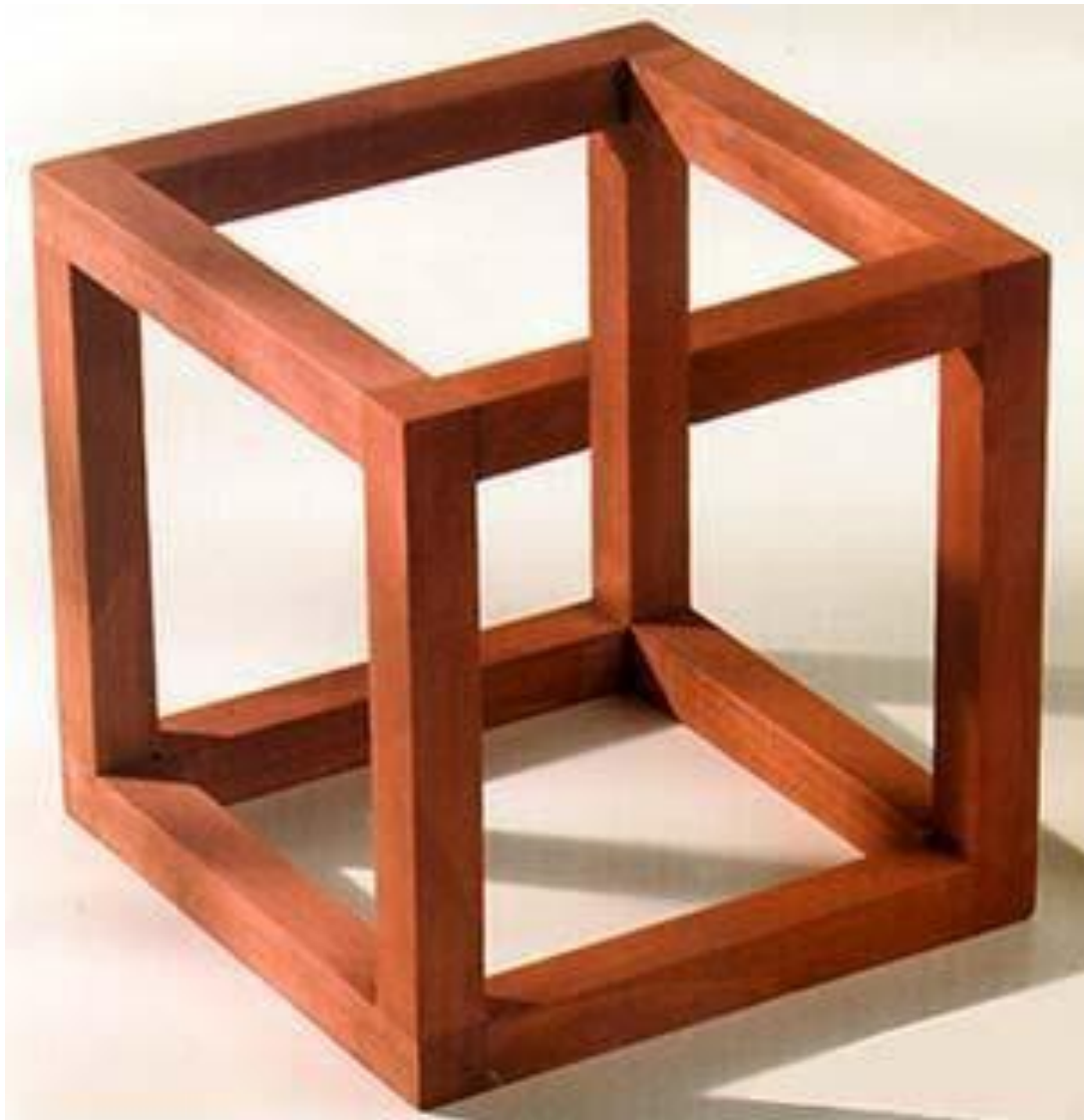




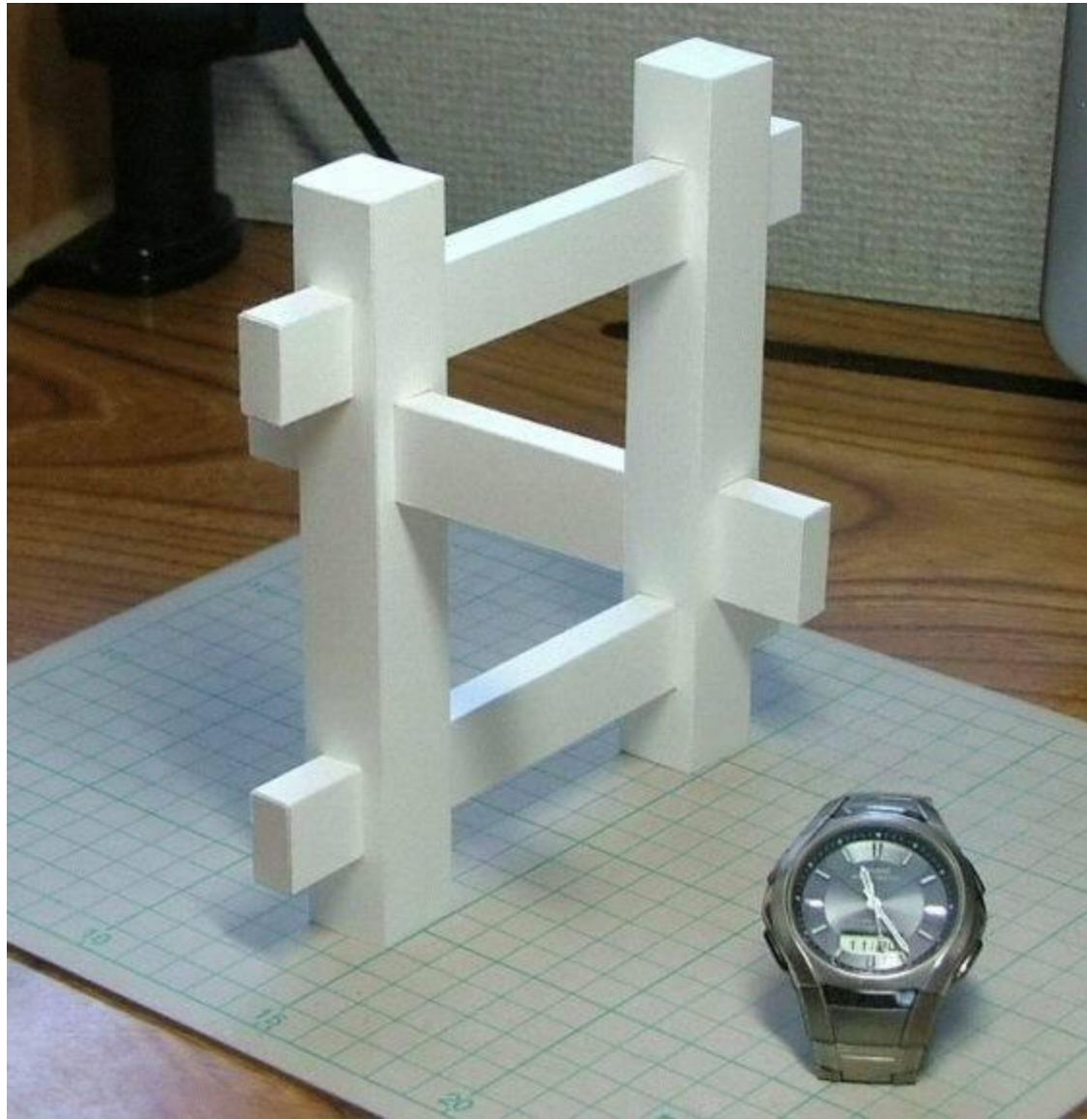


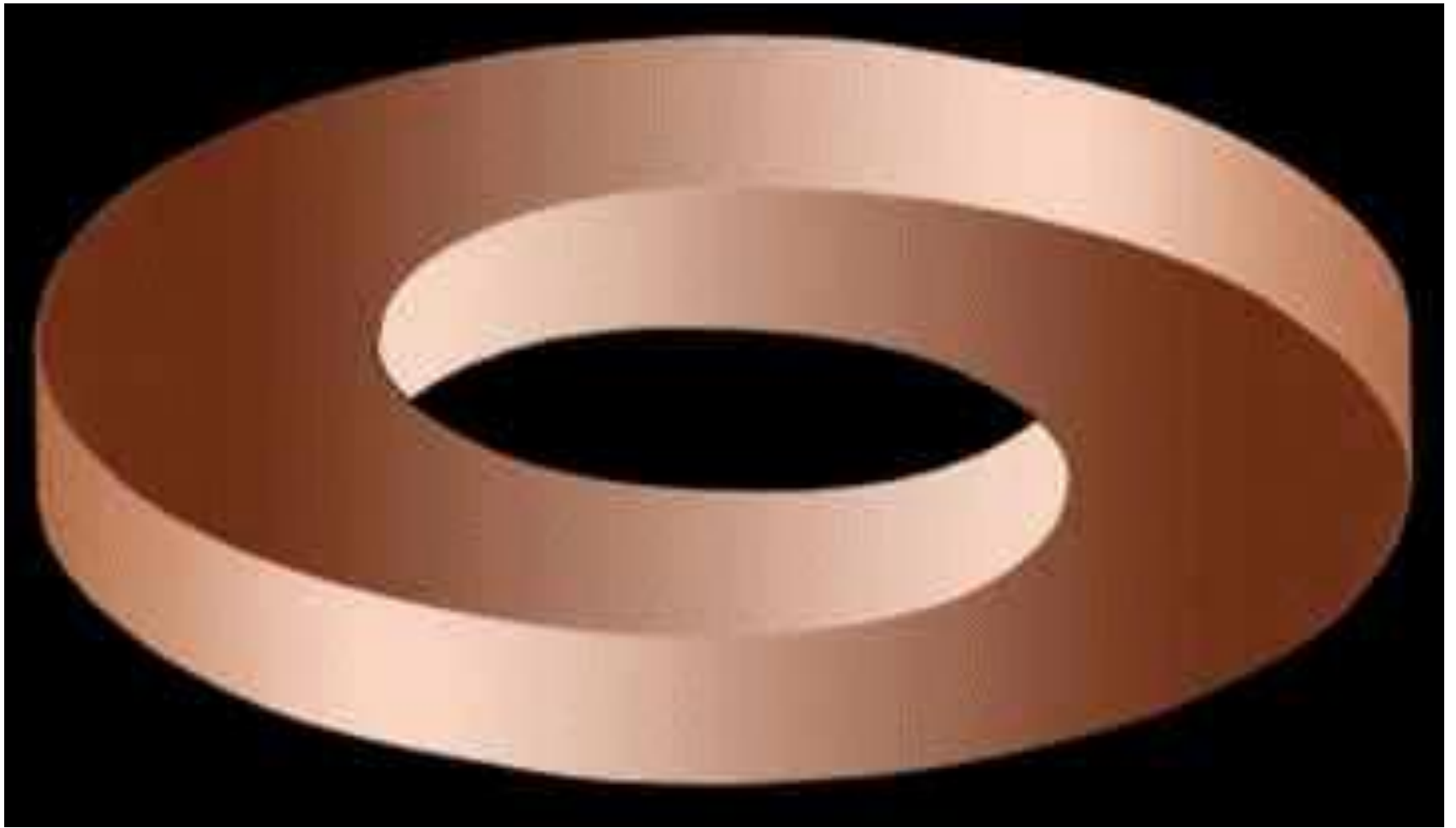
2. Geometrijske – Nemogoča perspektiva









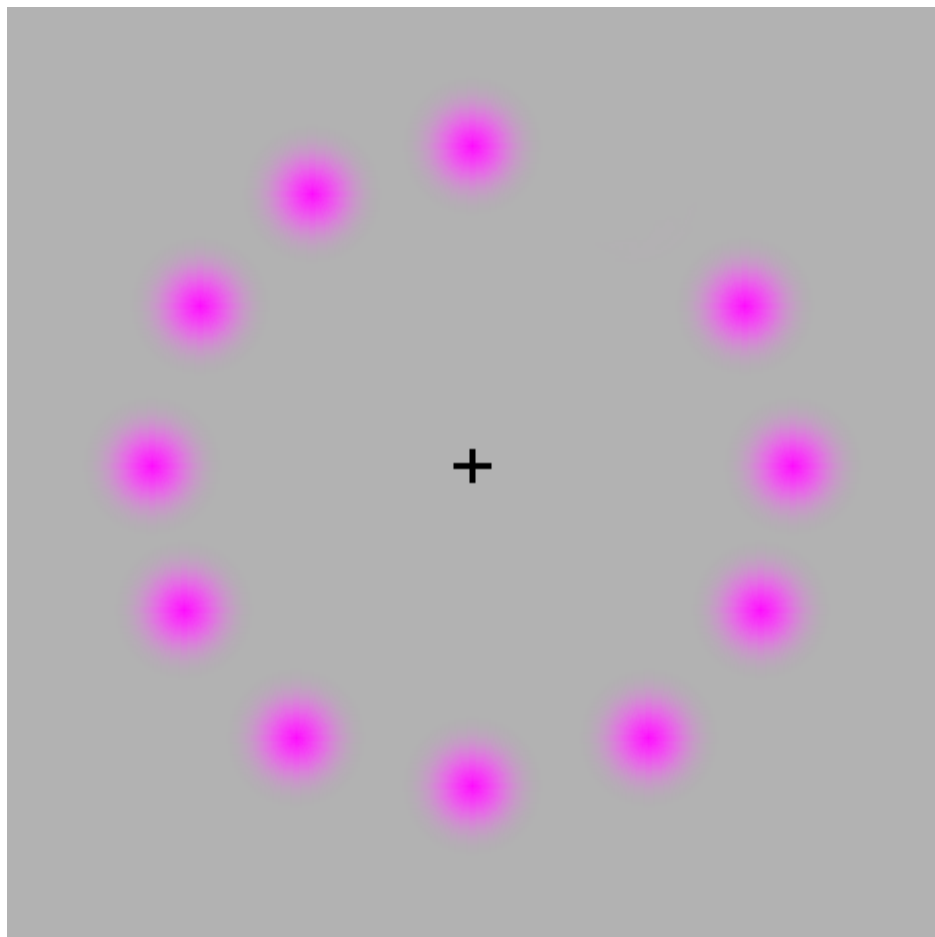


3. Fiziološke --

Naknadna komplementarna slika



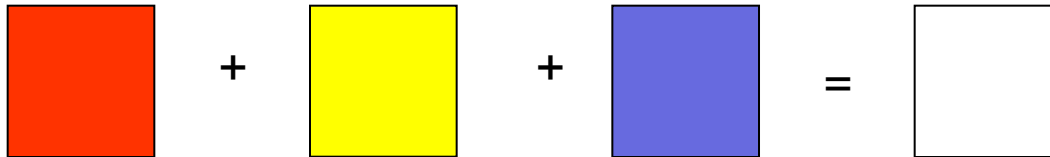
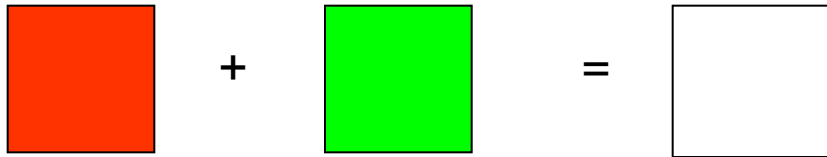




4. Fiziološke -- Mešanje barv

Vrtavka, ki spremeni barvo

Znano je mešanje barv:



Preseneti pa, da da vrtavka z izmenoma belimi in črnimi progami namesto sive lahko rjavo ali rdečkasto ali modrikasto sivo barvo! ZAKAJ?

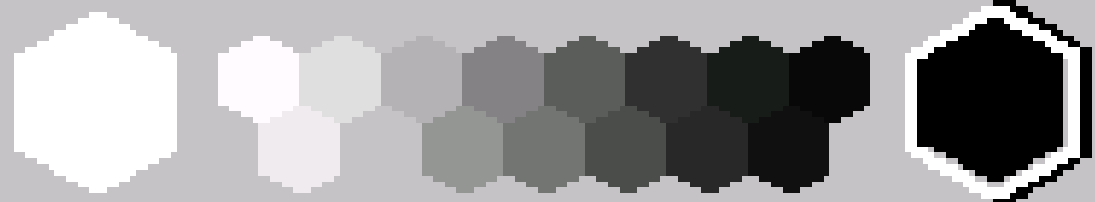
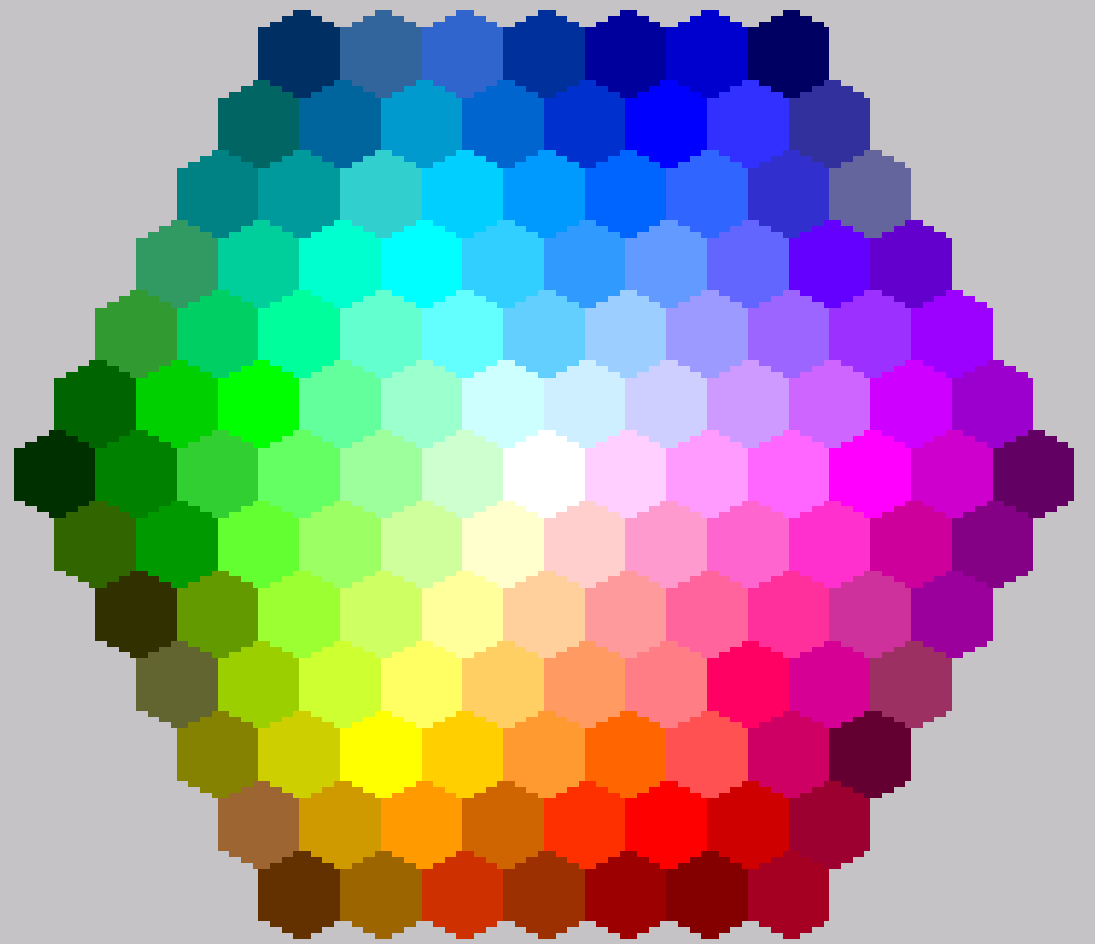
(Barvne čutnice v očesu reagirajo različno glede na trajanje in pogostost svetlobnega pulza)

Standard

Custom

OK

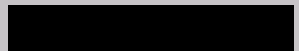
Colors:



Cancel

Preview

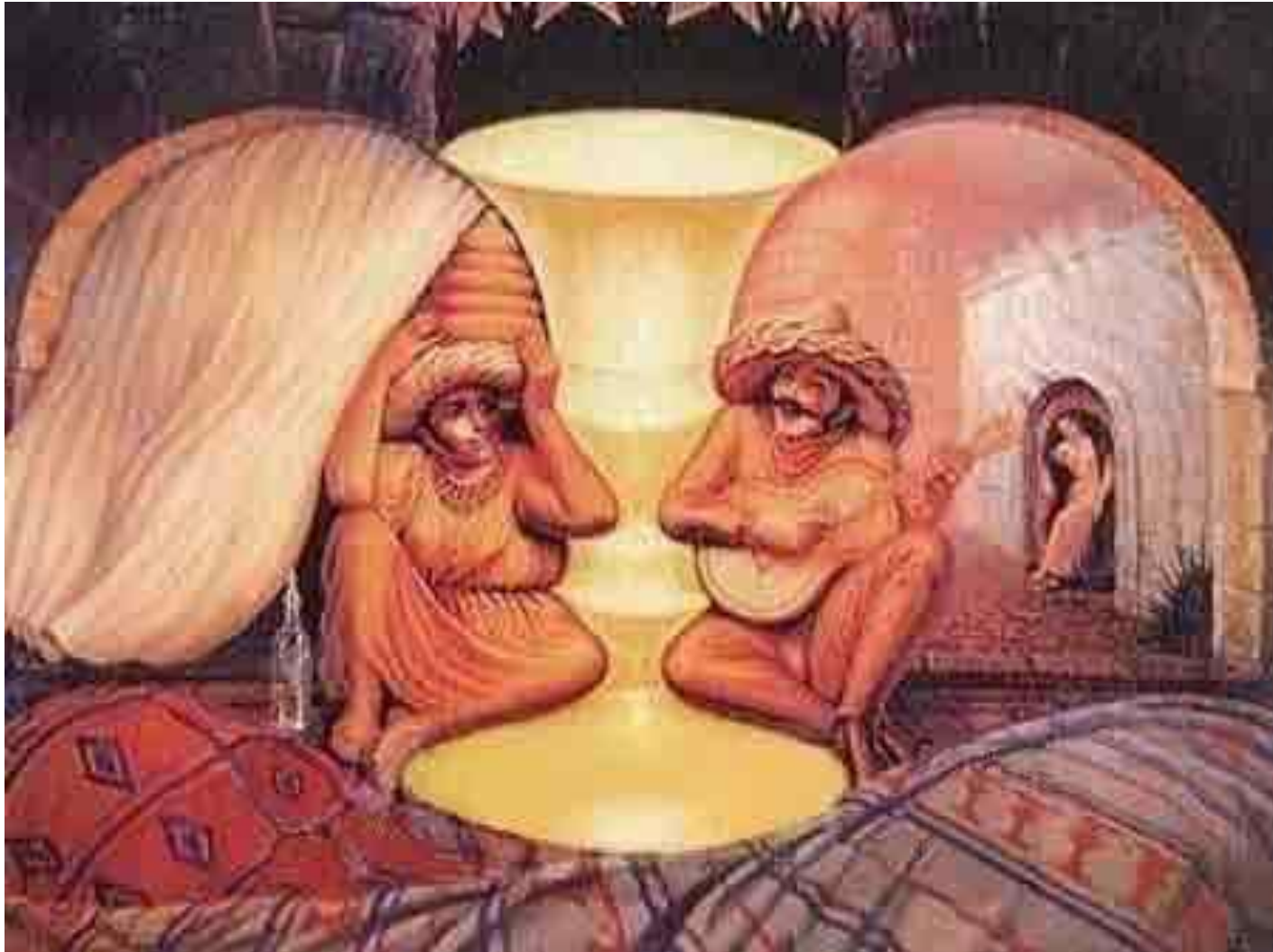
New



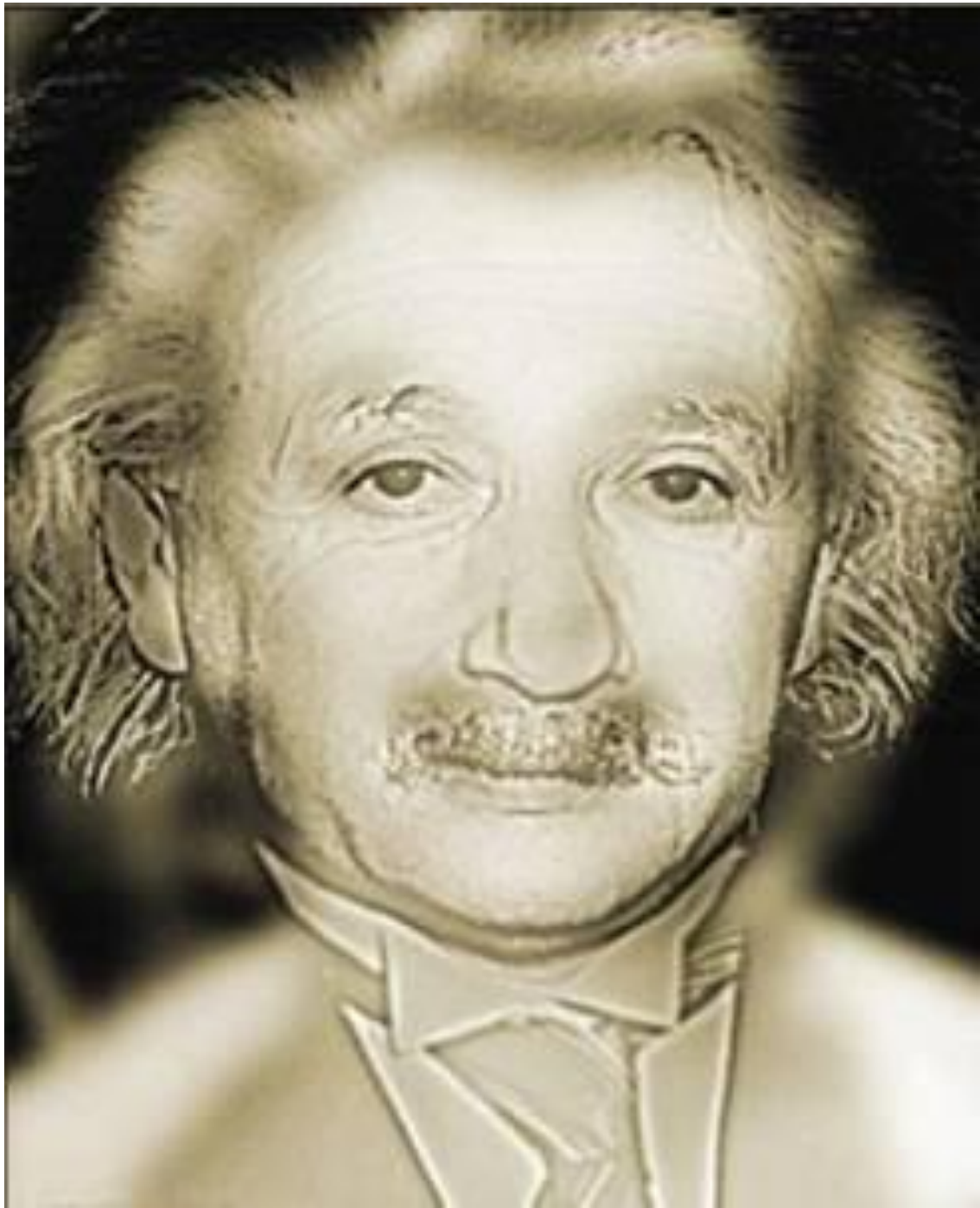
5. Psihološke --

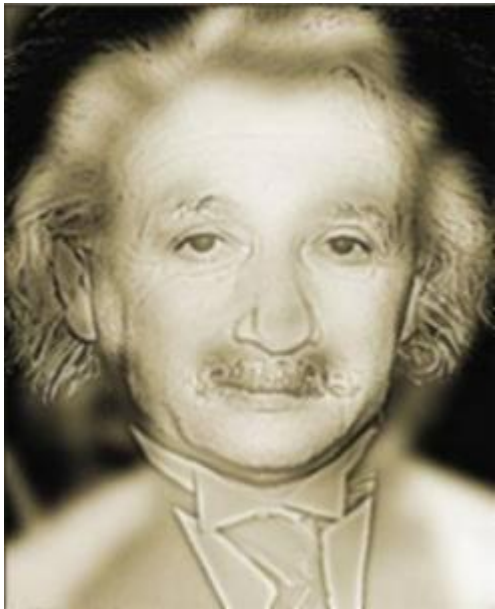
Preskakovanje pozornosti

SSS









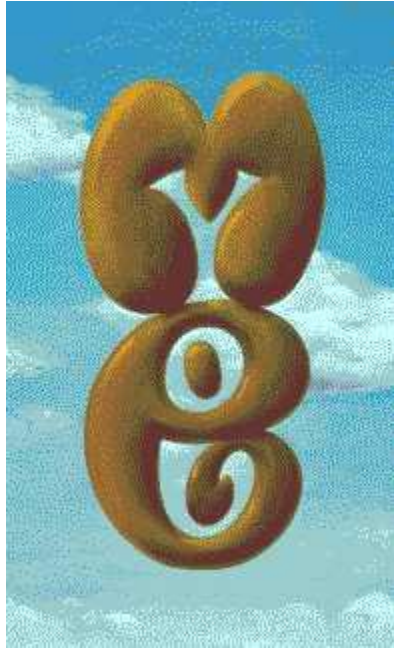


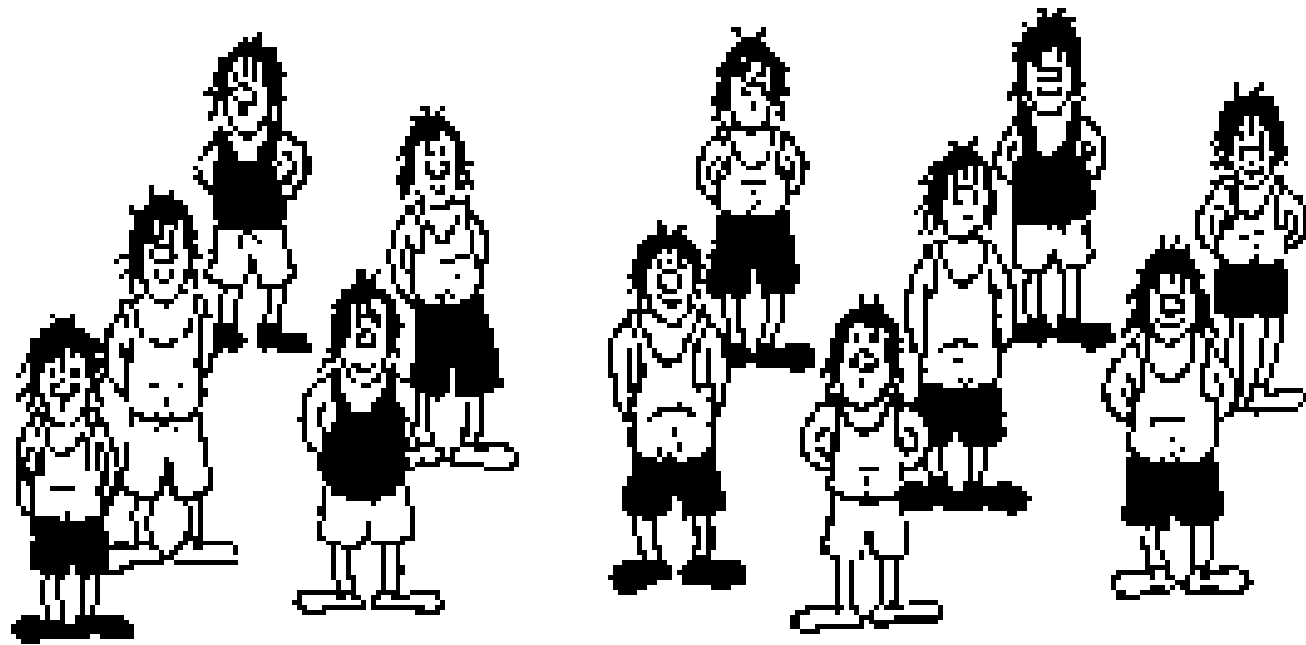


Teach
Learn



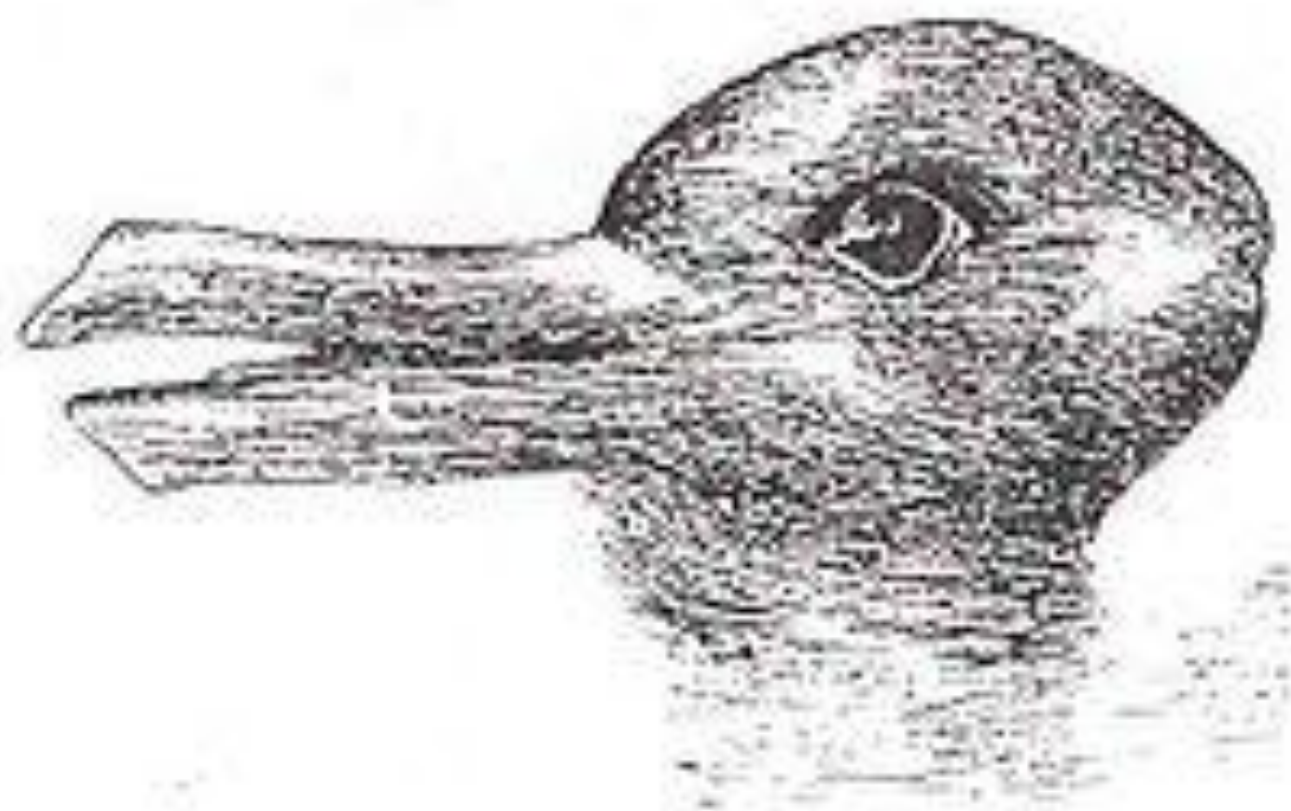
GOOD

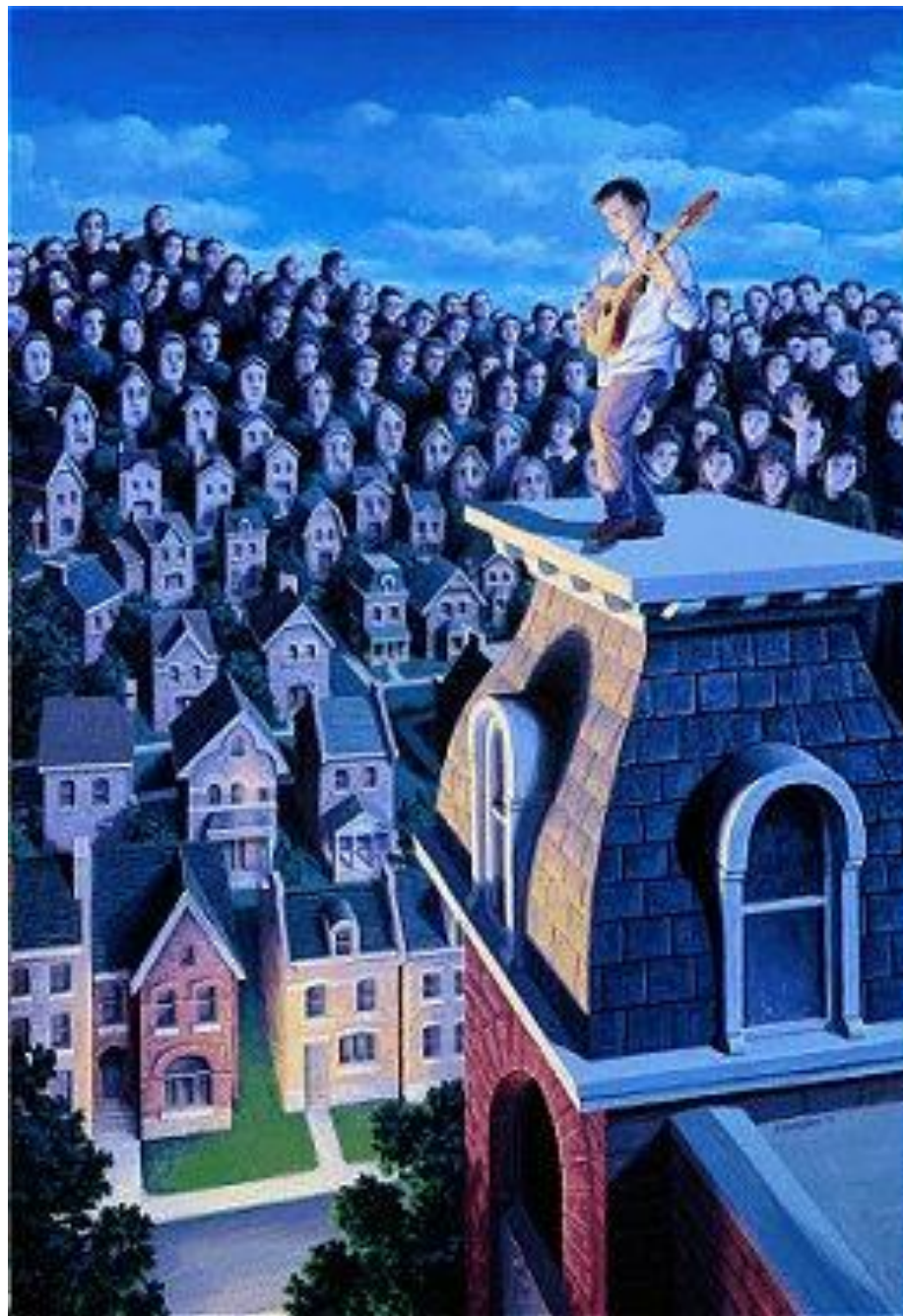


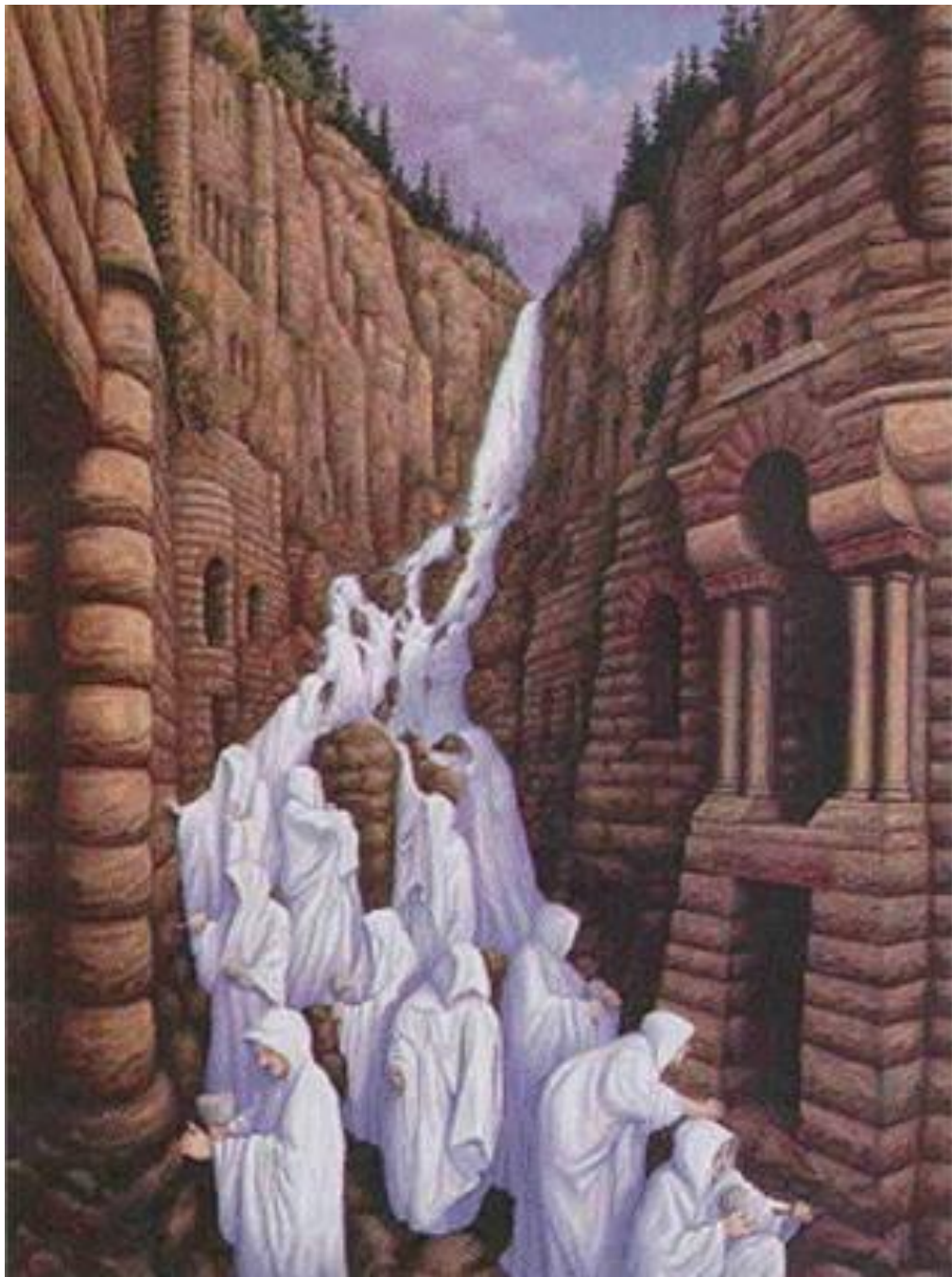


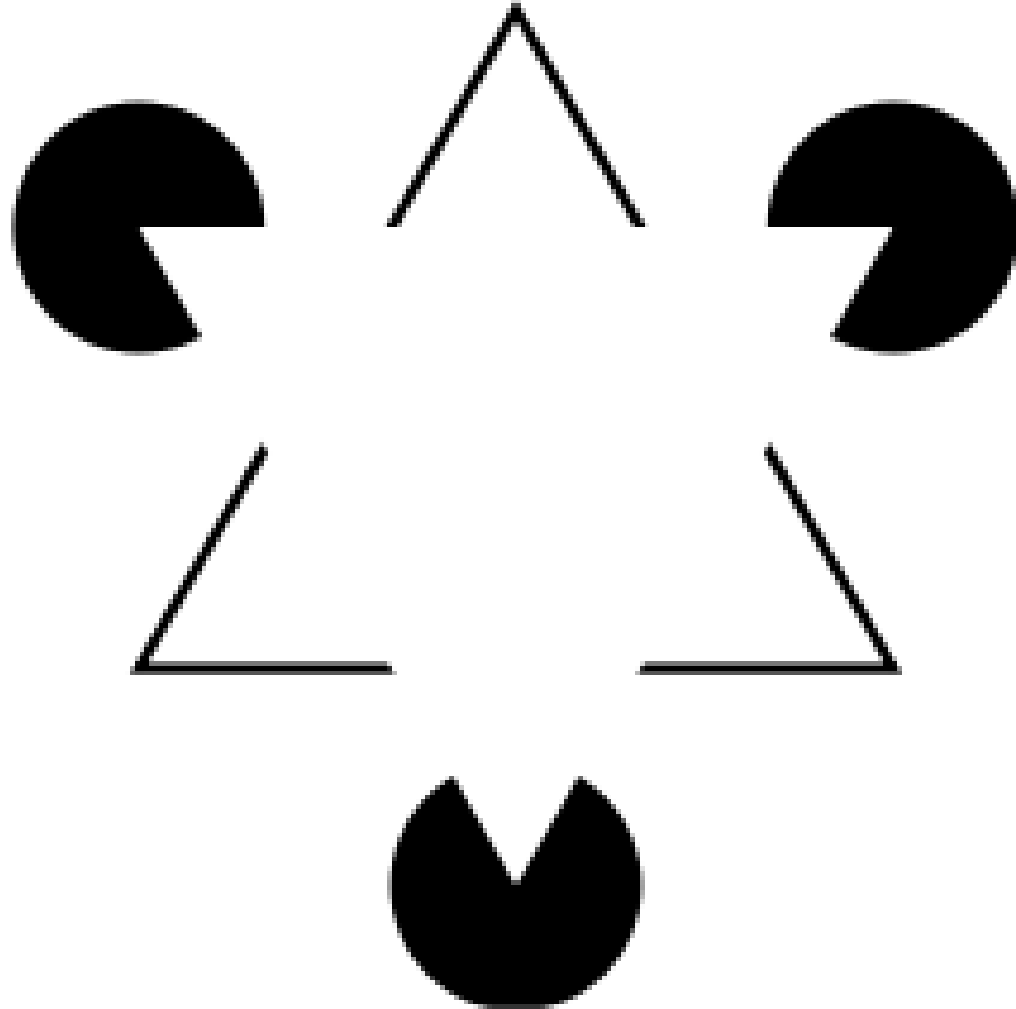
6. Psihološke --

Interpretacija glede na izkušnje

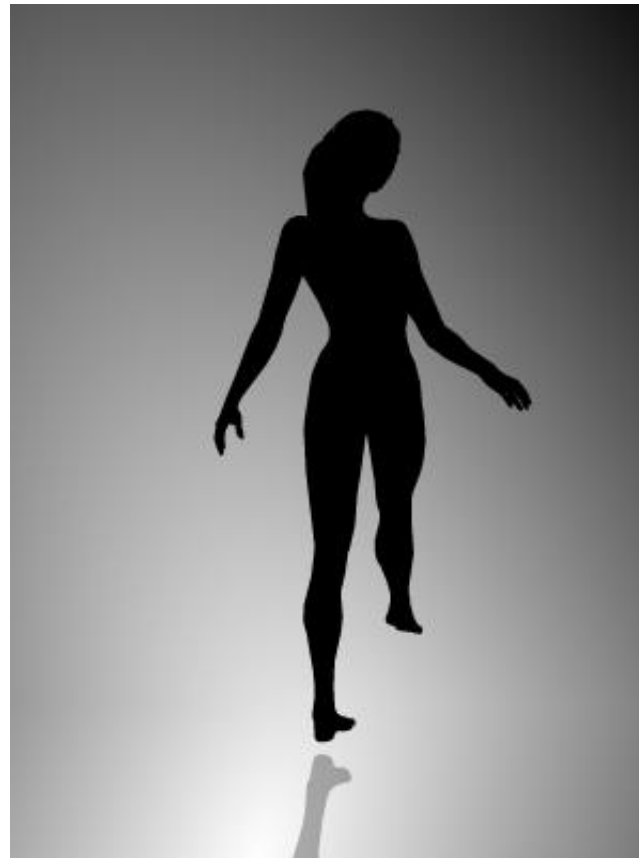












Ali se plesalka vrti v levo ali v desno?

Ali se plesalka vrti v levo ali v desno?

Možgane sestavljata dve hemisferi, desna in leva. Vsaka polovica je odgovorna za svoje naloge, ena pa je vedno dominantna. Katera vodi vaše mišljenje?

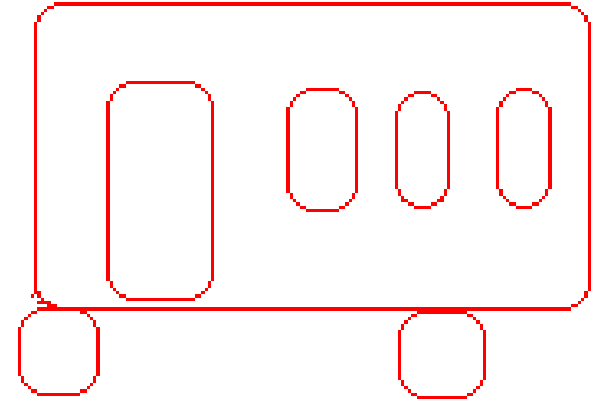
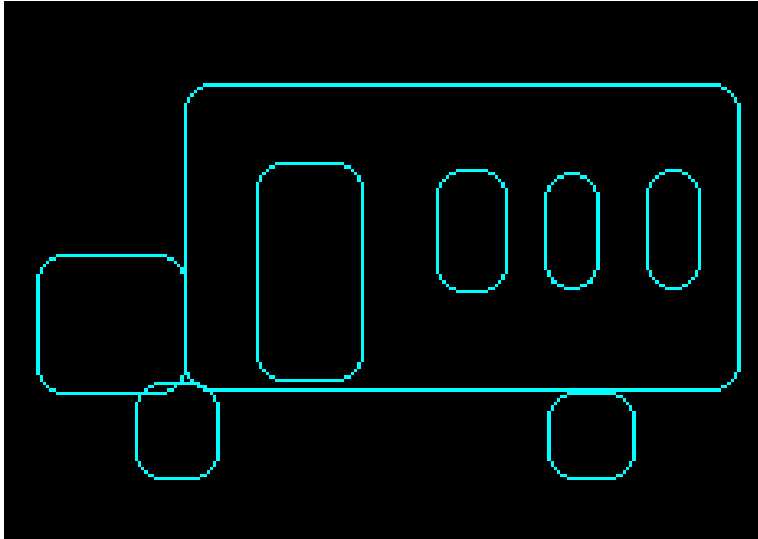
Če je pri vas bolj dejavna desna polovica možganov, se plesalka vrti **v desno** v smeri urnega kazalca, če pa se vrti **v levo**, je dominantnejša leva polovica.

Ljudje, pri katerih je dejavnejša **desna polovica možganov**, so bolj čustveni in manj pozorni na detajle. Uporabljajo domišljijo, se ukvarjajo z vero in filozofijo. Pripravljene so tudi tvegati in imajo odlično prostorsko predstavo. Pogosto jih označujejo za sanjače in umetnike, ker imajo težave z dejstvi in številkami. A to ne pomeni, da so neumni.

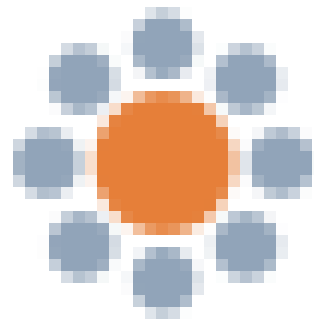
Če je dejavnejša leva polovica:

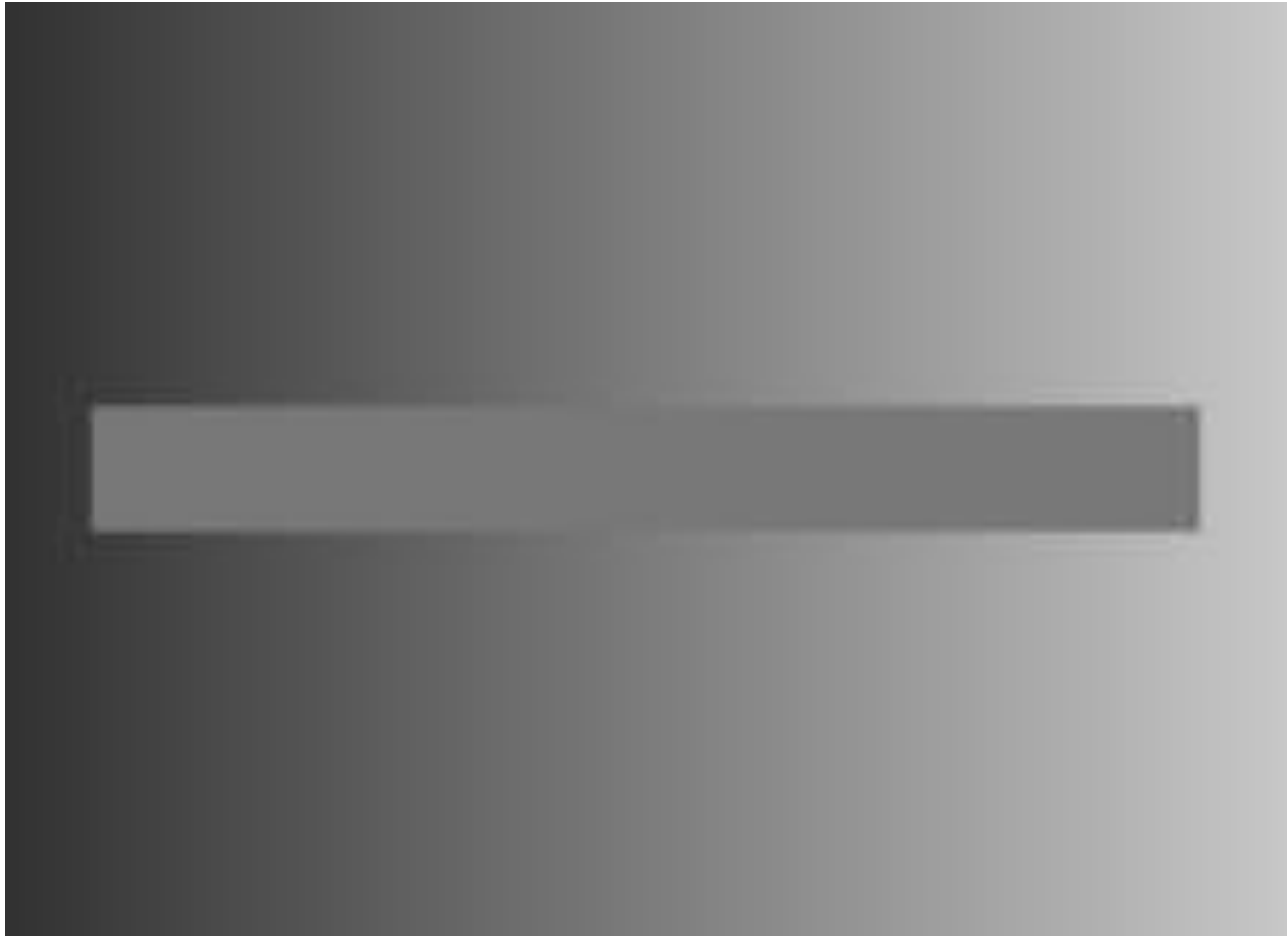
To so ljudje, ki jih vodi logika. So zelo pozorni na detajle in pravila. So tudi dobri govorci in osredotočeni na sedanjost. Niso pripravljene tvegati in so zelo praktične narave.

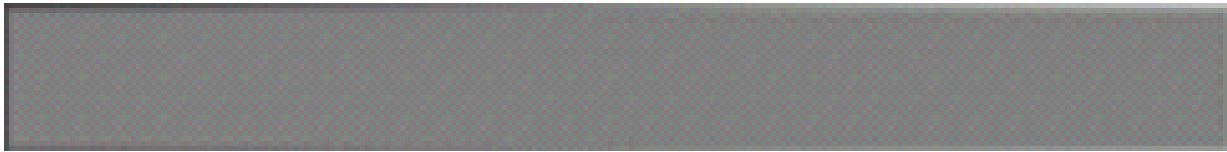


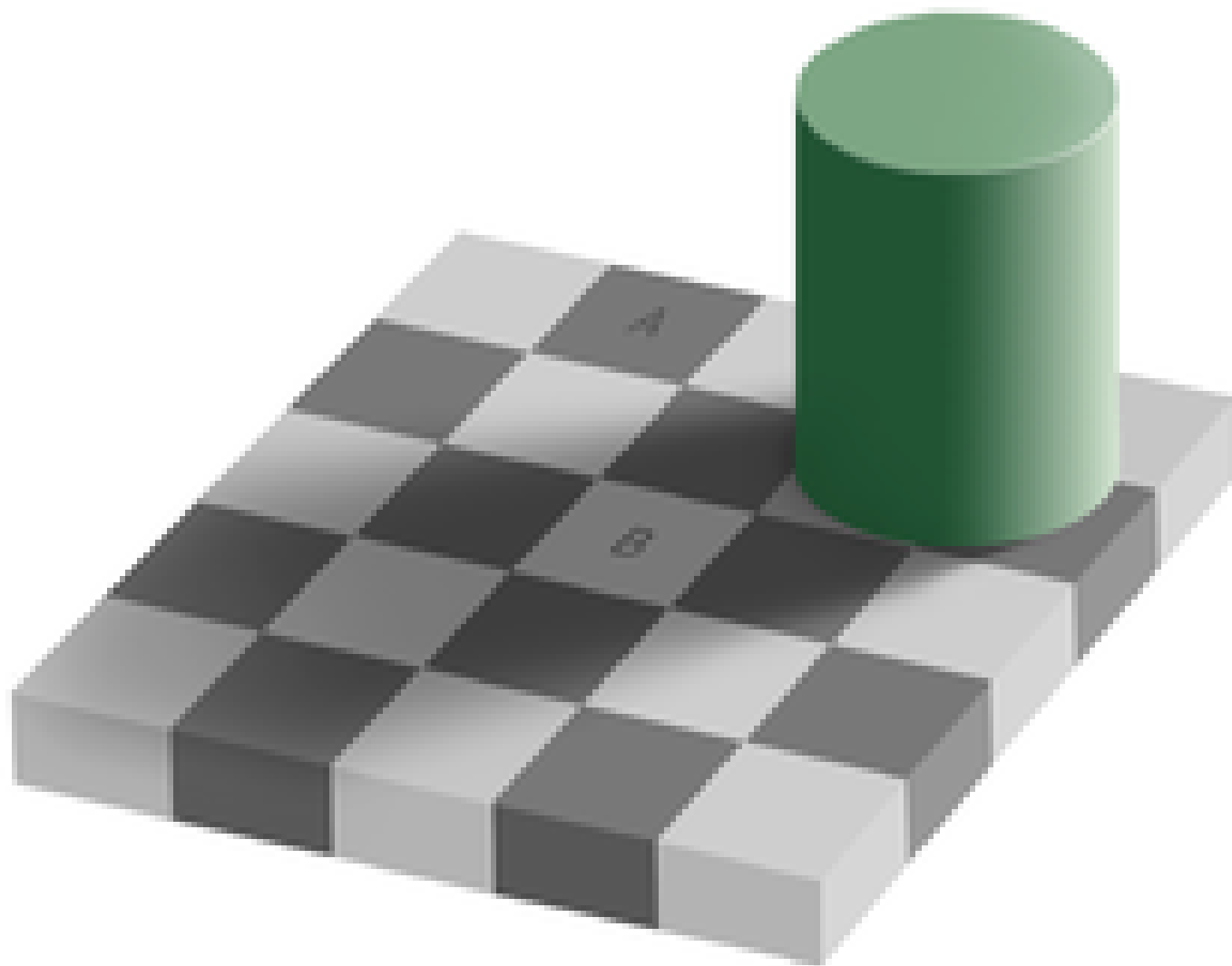


7. Fiziološko-Psihološke – Pretirani kontrasti

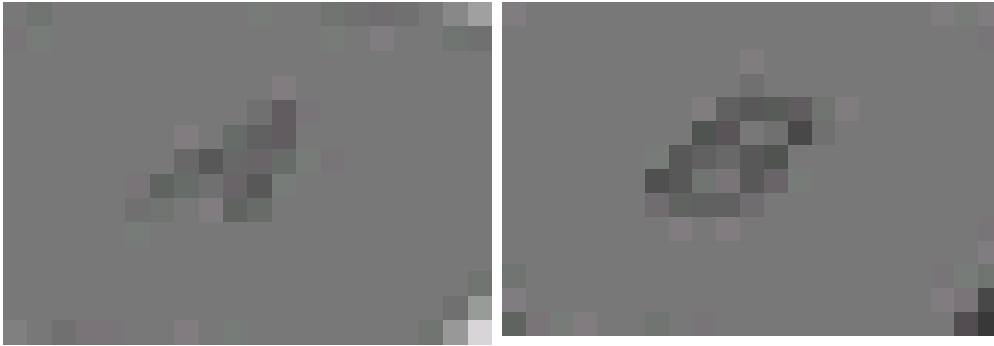


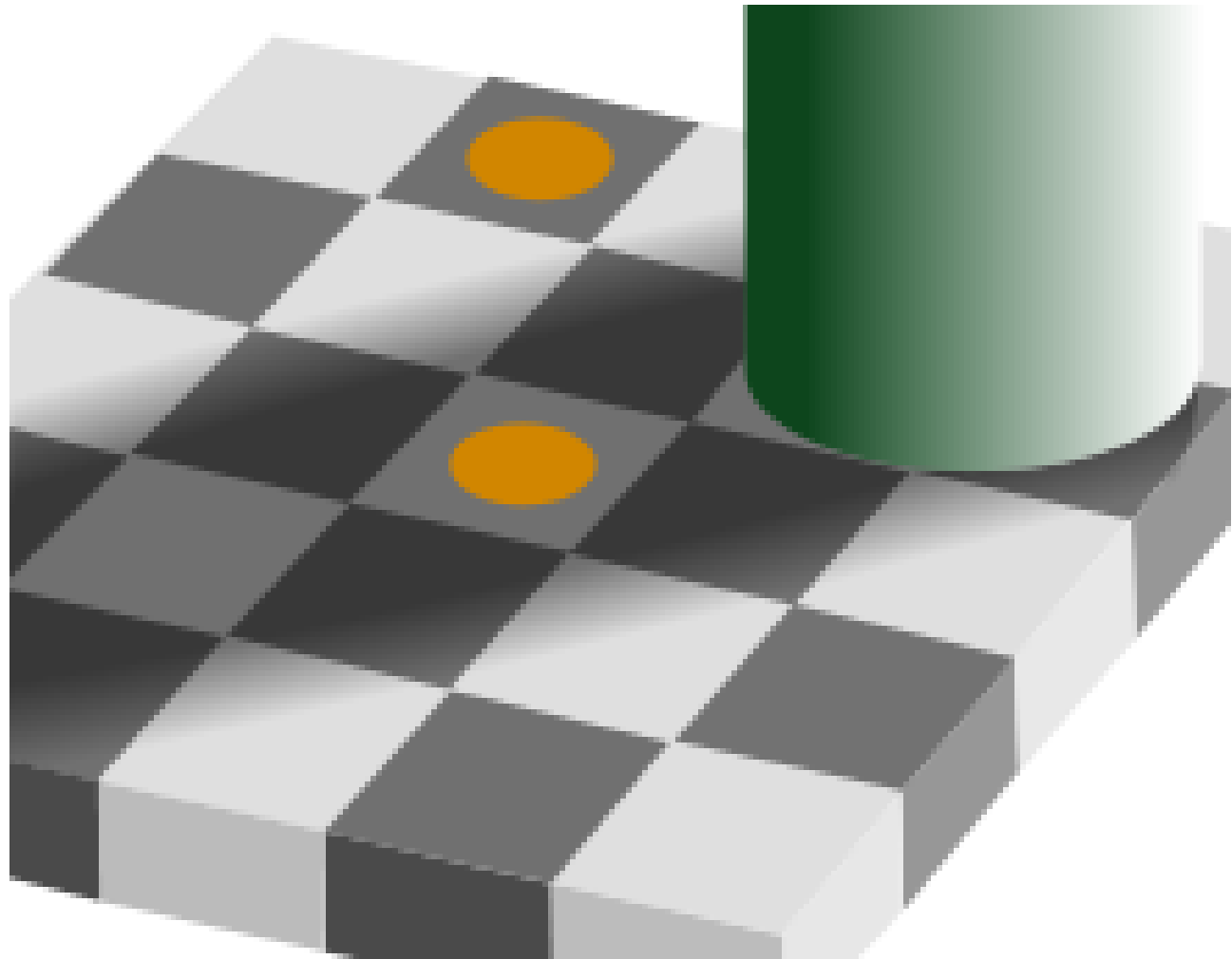


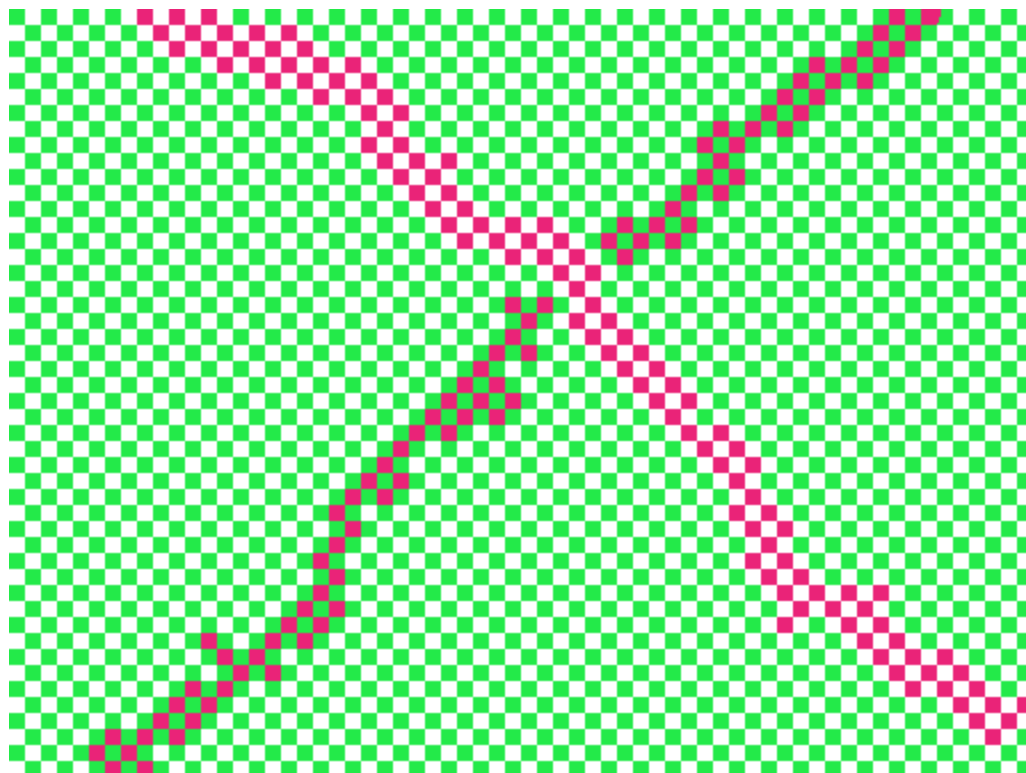




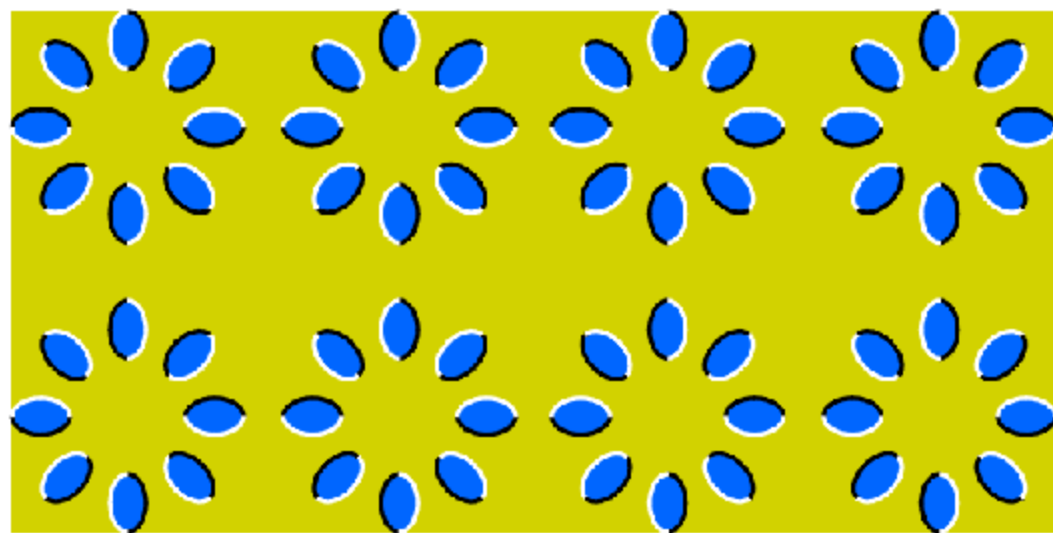
Katero polje je temnejše, A ali B ?

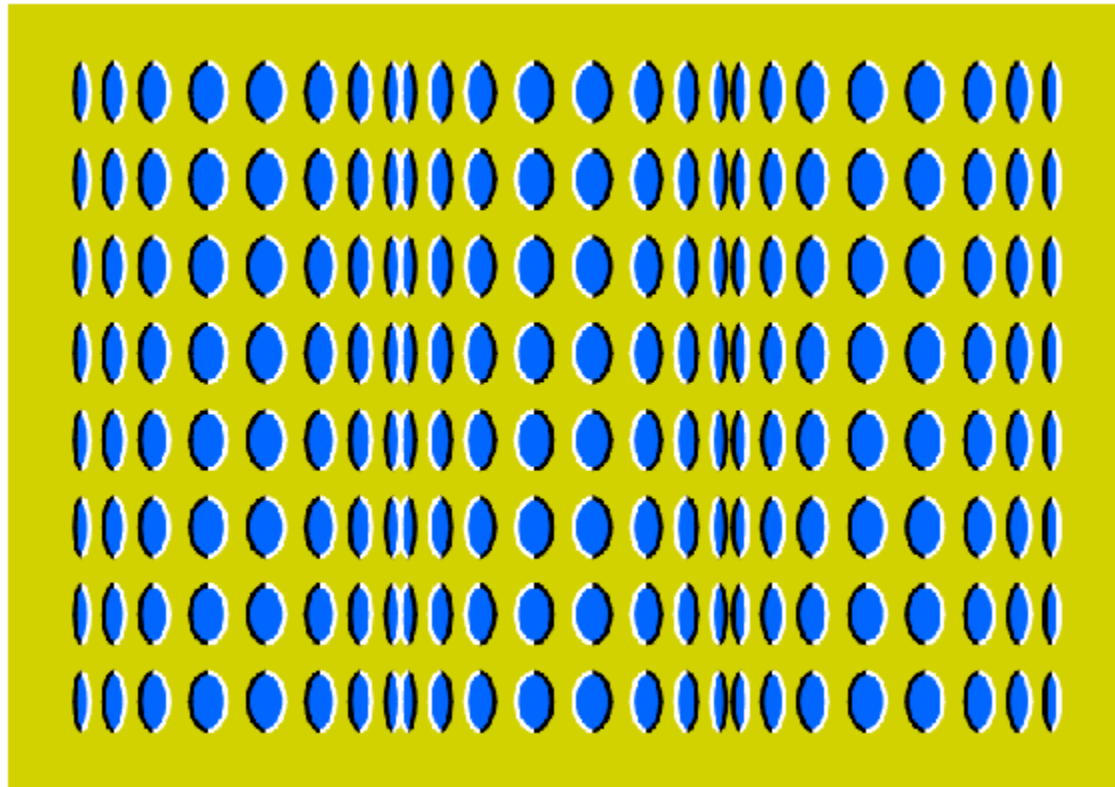


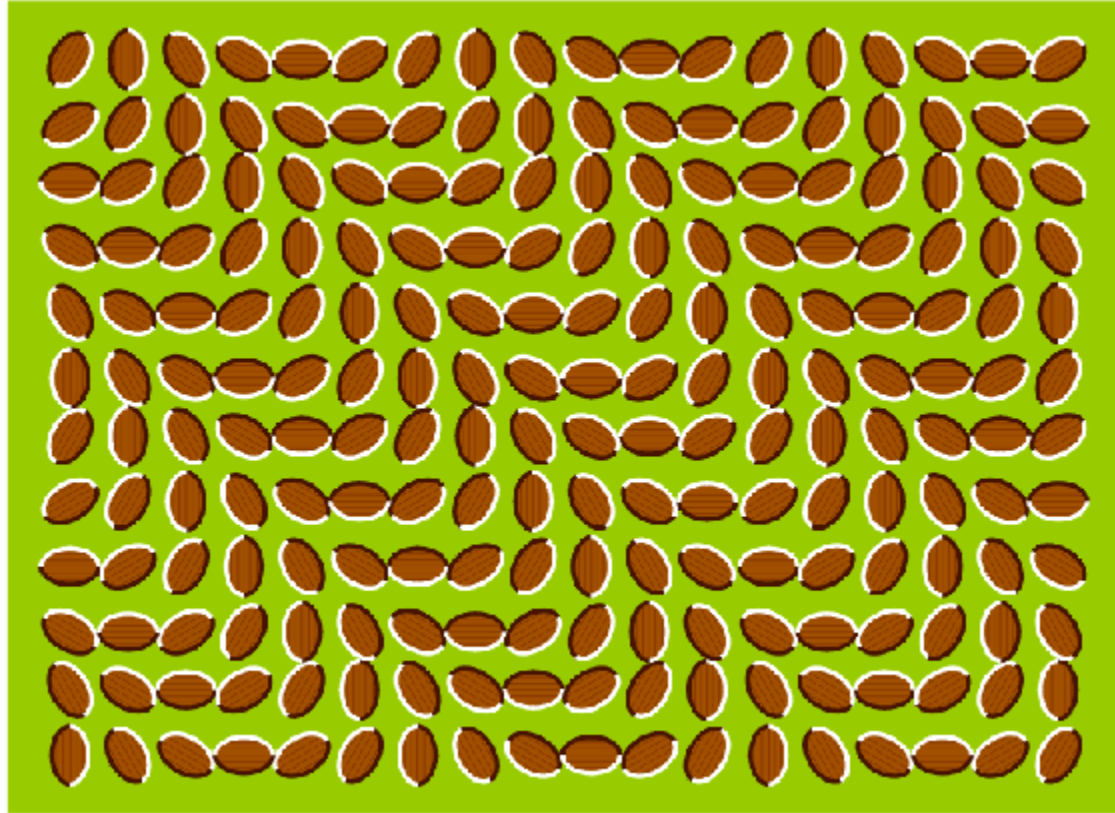


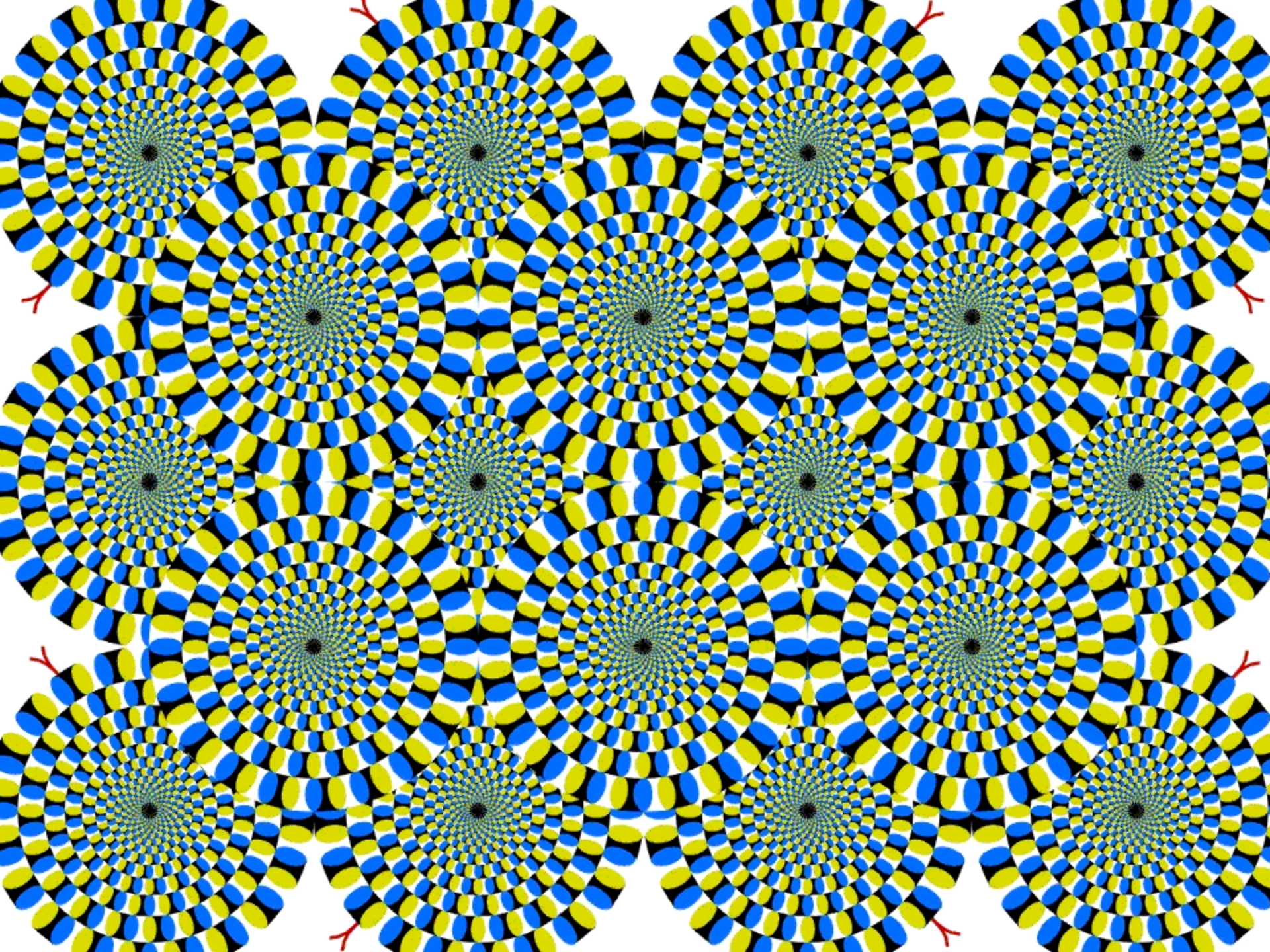


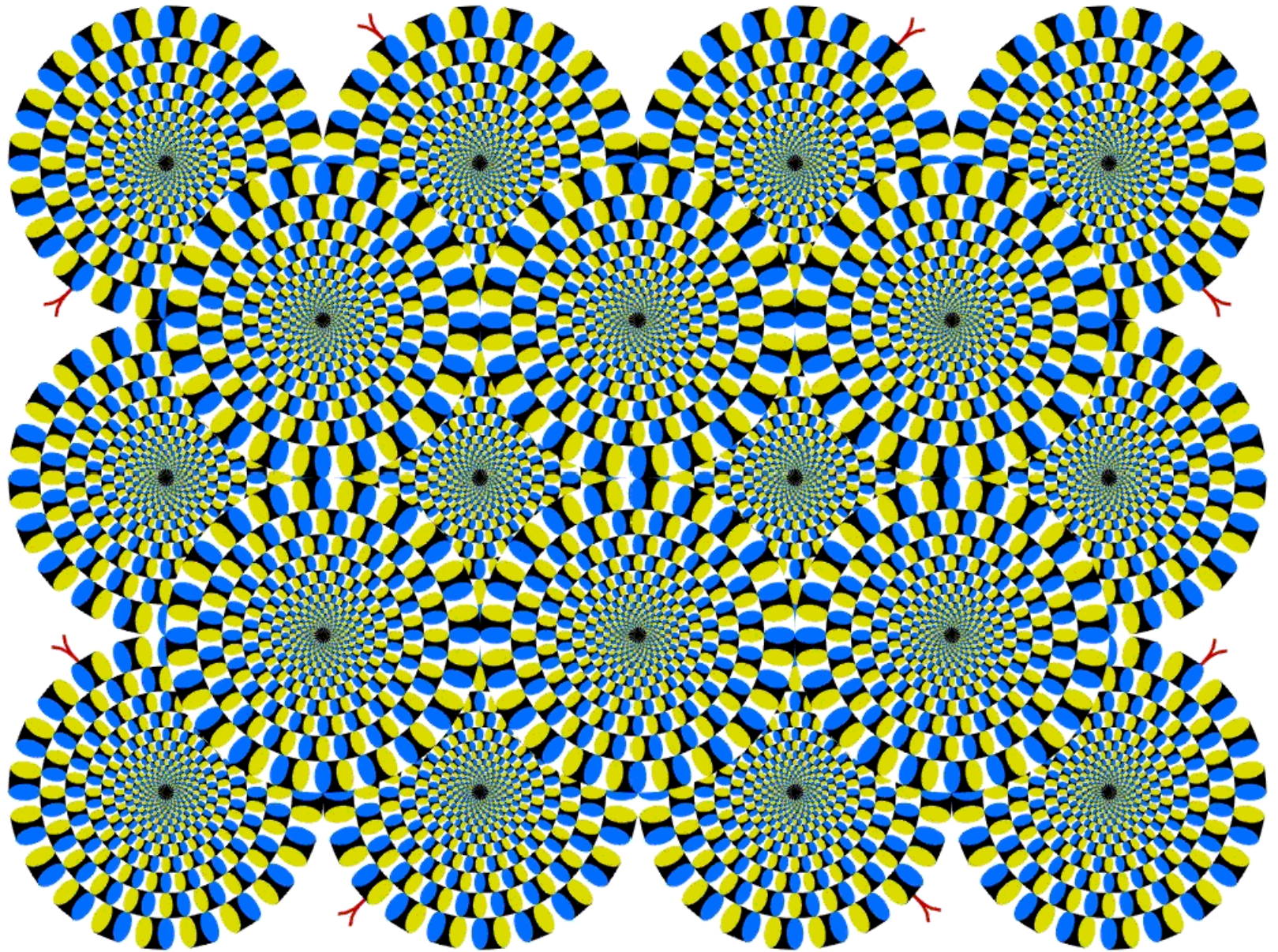
8. Fiziološko-Psihološke – Navidezno gibanje



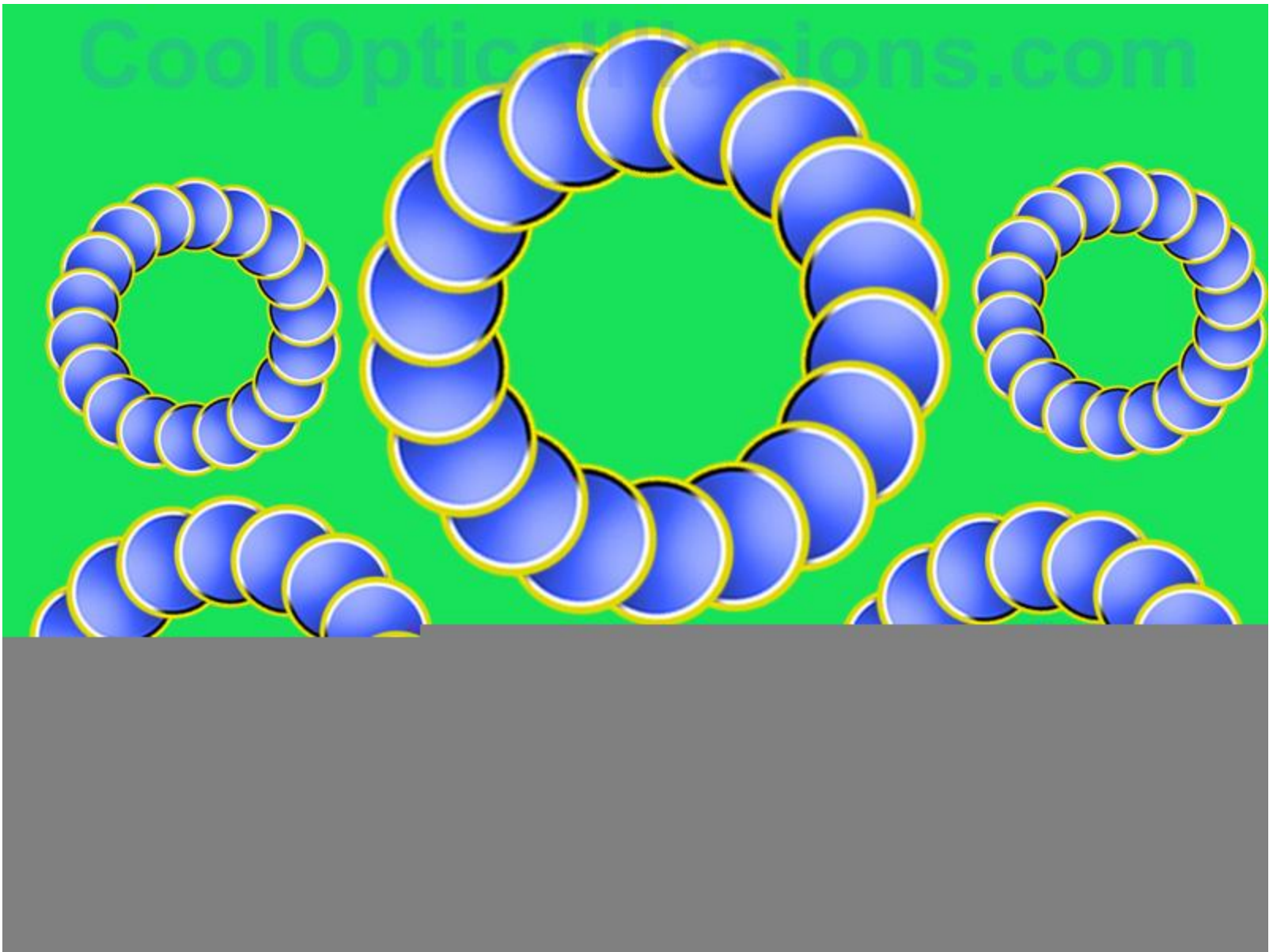


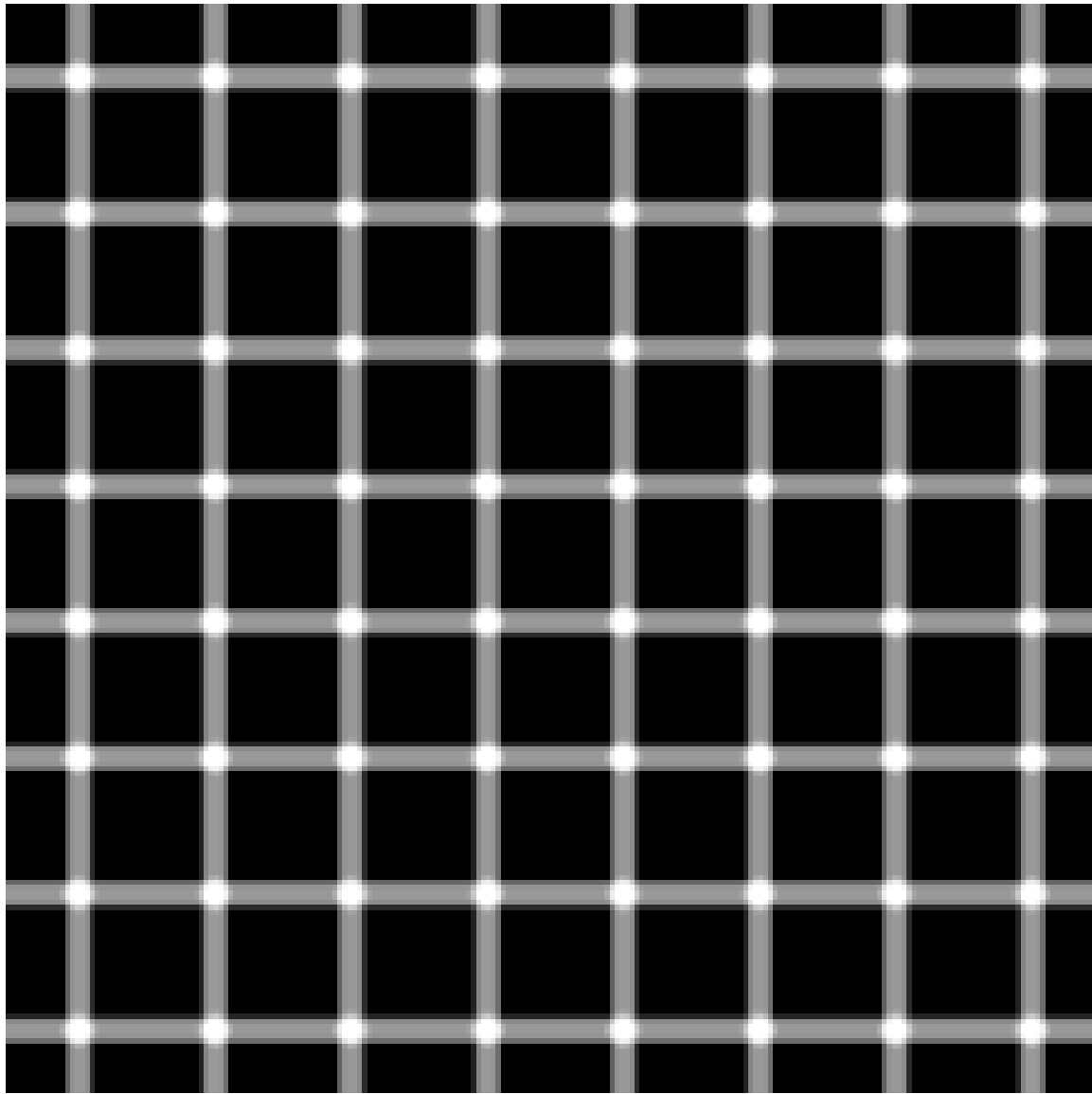


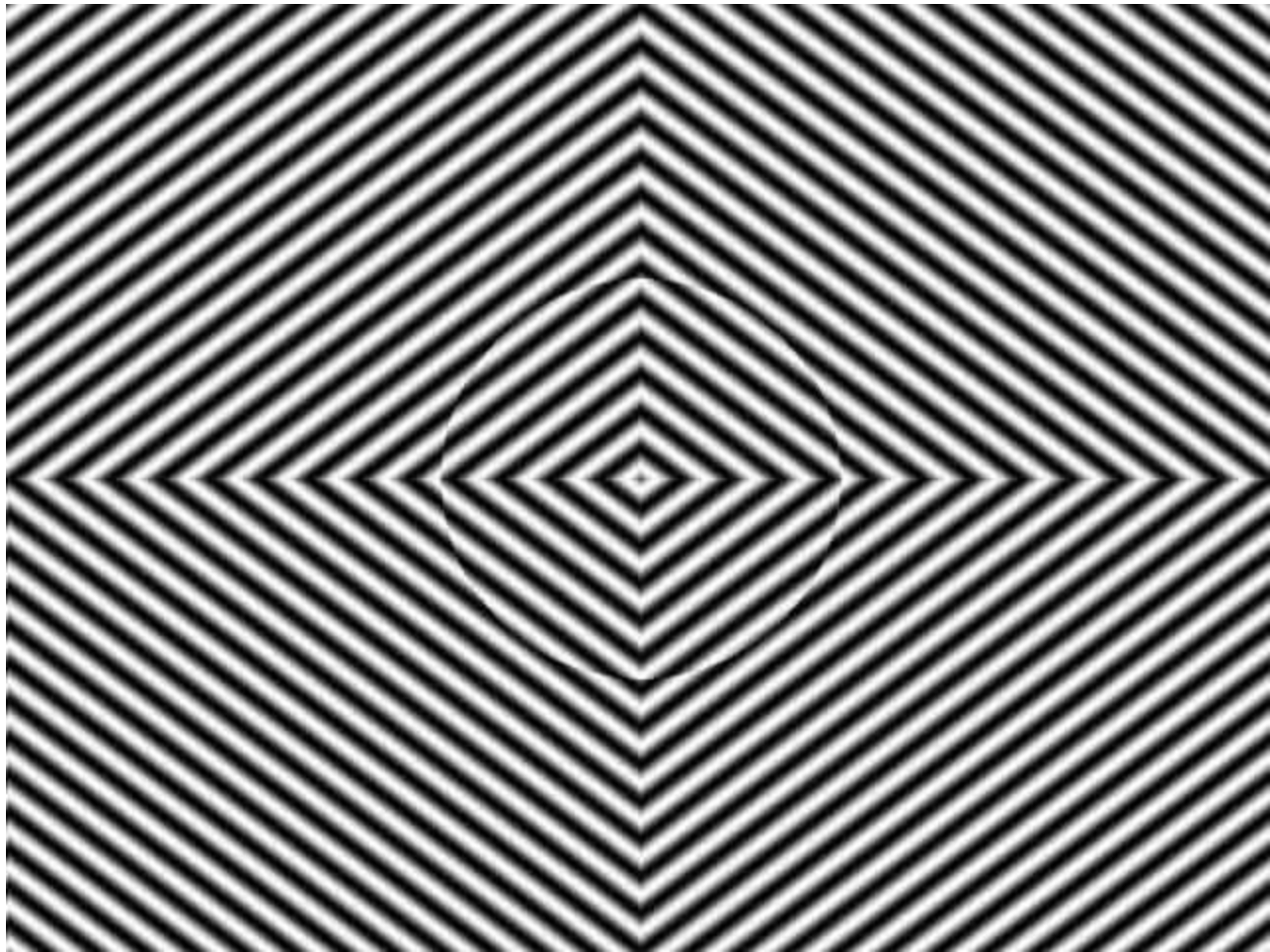




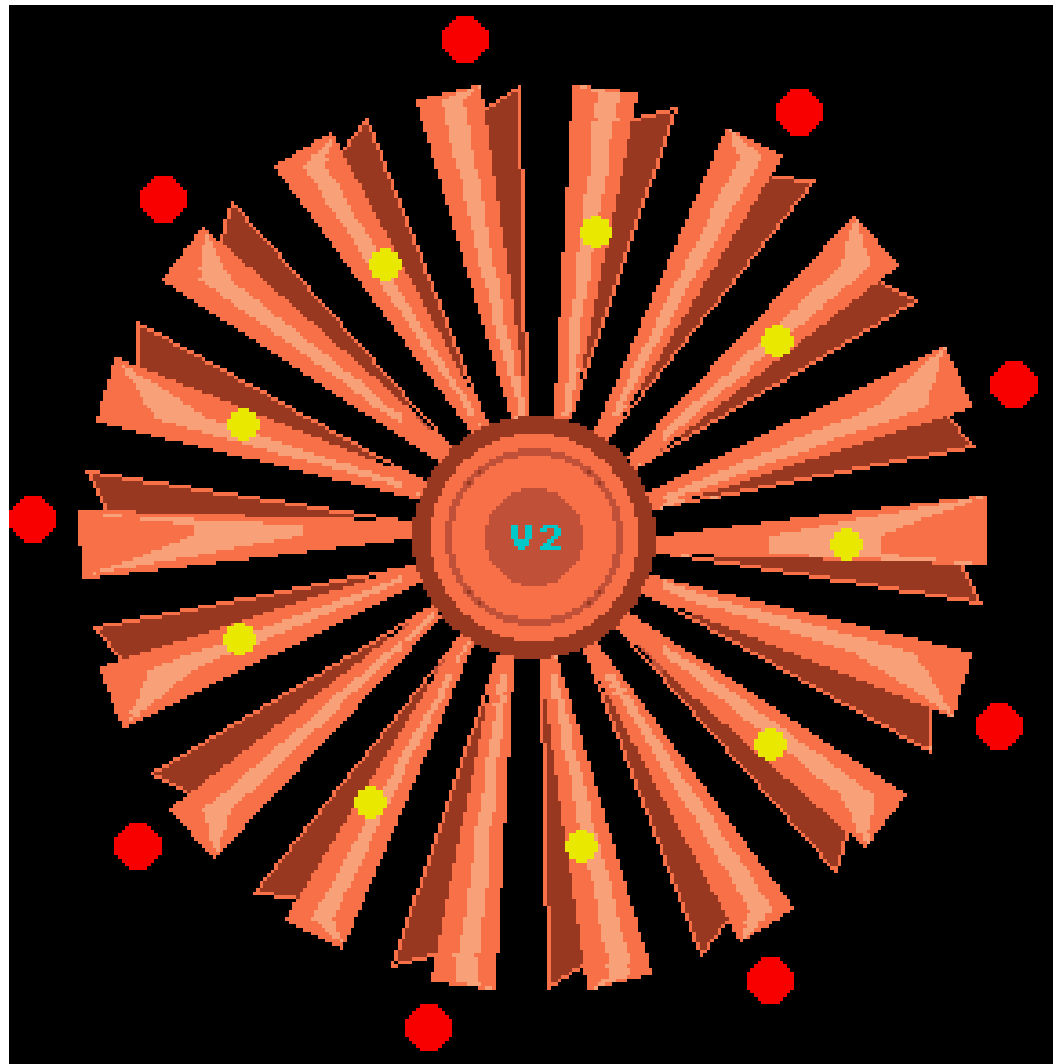
CoolOptics.com

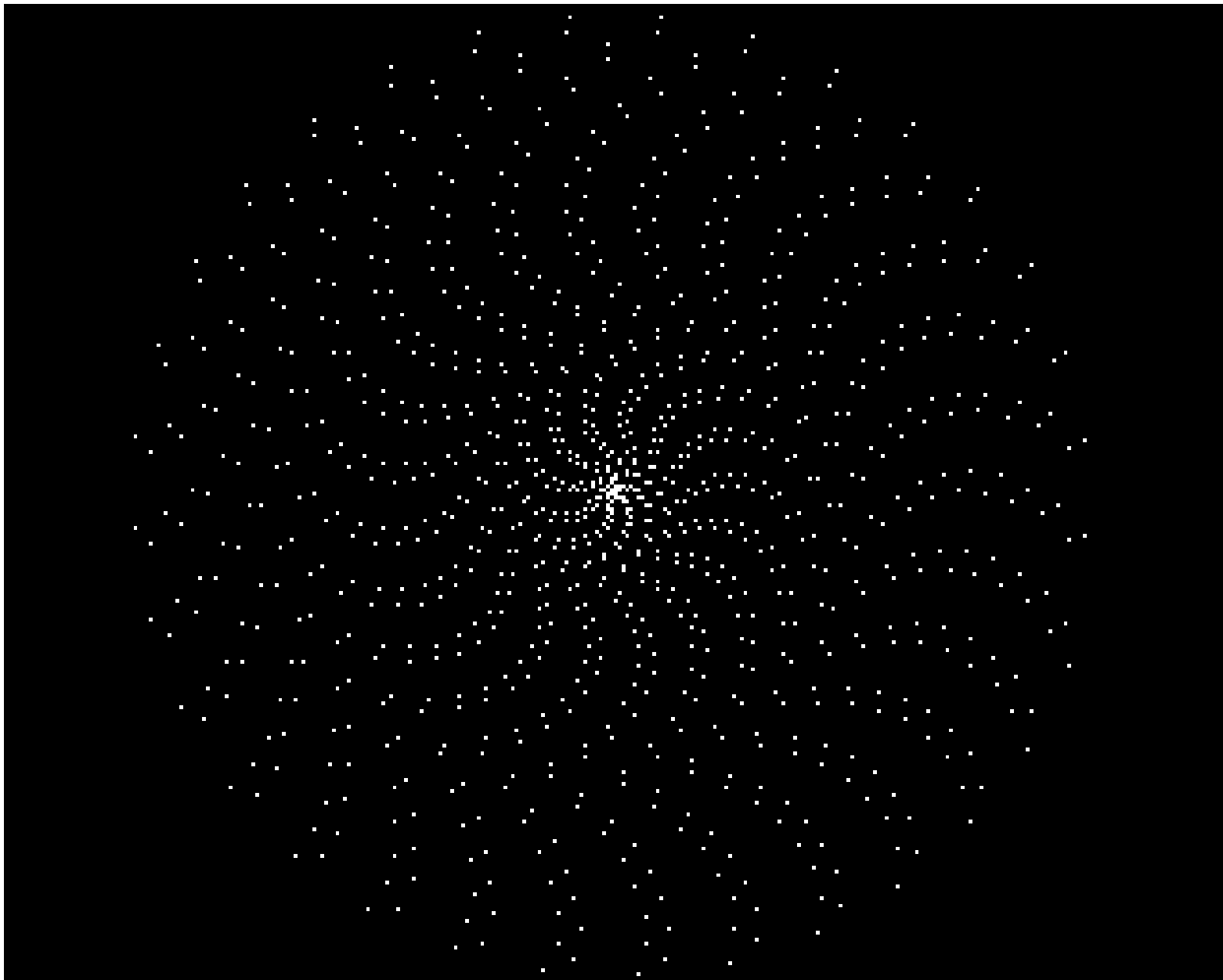












9. Fiziološko-Psihološke – Magično oko

