What is Binocular Rivalry?

• When each eye is shown a different image, percept oscillates between them
  • typically after lengthy exposure to fixed stimuli
  • timescale and spatial extent of rivalry depend on stimulus characteristics
What is Binocular Rivalry?

- Different from bistable percepts such as necker cube or face/vase
  - visual elements “appear/disappear” in binocular rivalry, rather than regroup
Why is it interesting?

• Probe the neural mechanisms and psychophysics of
  • binocular vision: how information from two eyes is combined and suppressed as needed
  • adaptation: static/repetitive information is ignored by the brain. At what time and spatial scales? under what conditions?
  • awareness: visual stimulus is constant, but percept changes. What’s different in the brain?
  • “consciousness”: if you do not perceive information, is it still represented in your brain?
  • top-down and attentional influences: how does expectation or preference impact perception?
Each eye viewed rotating grating of different color
- percept oscillates between them
- FMRI recordings used to predict current percept
- highly accurate at prediction, based on V1 activity

Haynes & Rees, 2005