

Figure 1: Sean is the coolest!

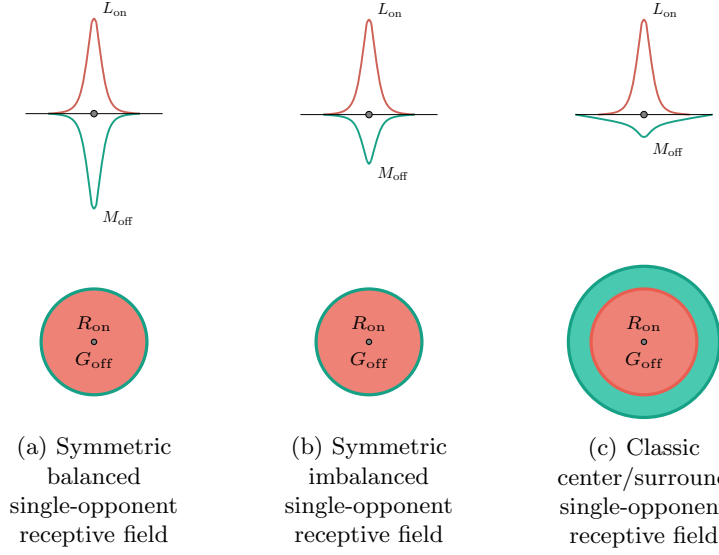


Figure 2: Examples of various possible single-opponent receptive field configurations, many others could be designed. All function to describe color properties of surfaces, though their response patterns to similar stimuli vary slightly.

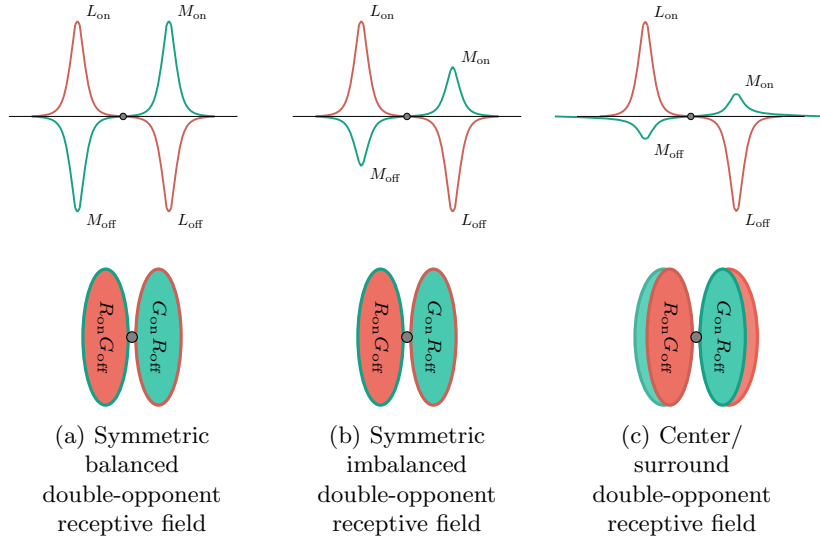


Figure 3: Examples of various possible double-opponent receptive field configurations, many others could be designed. All function to describe color properties of borders, though their response patterns to similar stimuli vary slightly.

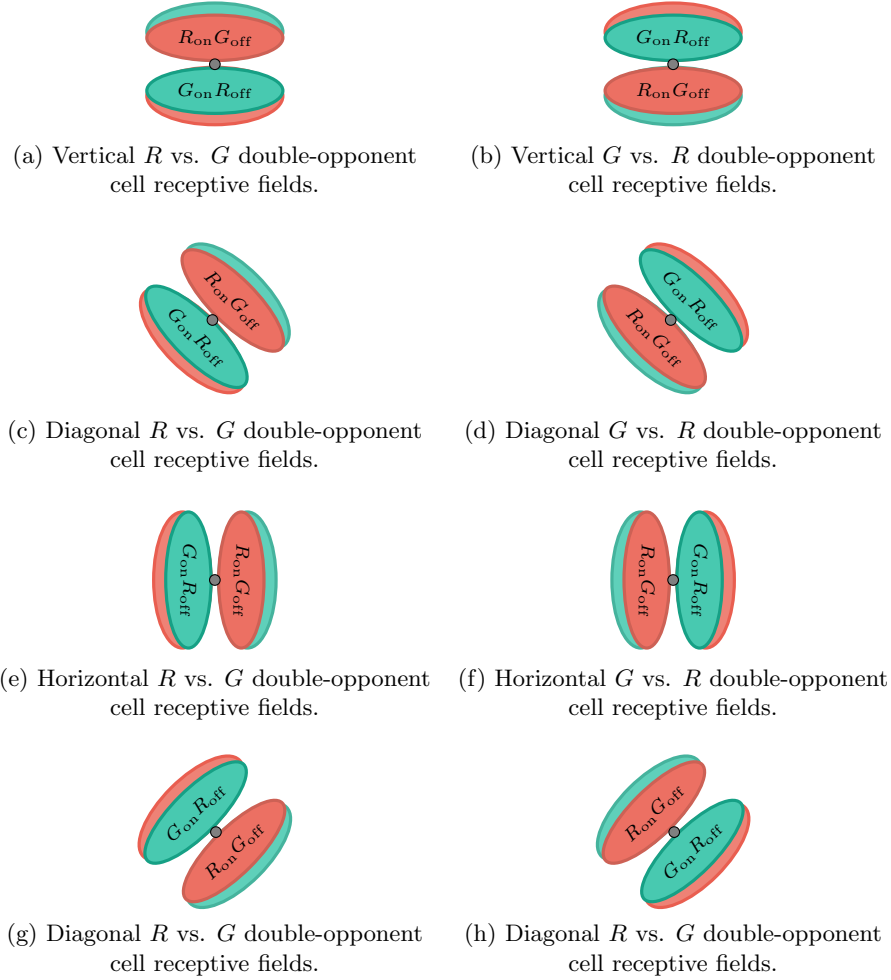


Figure 4: Schematic of orientation selectivity in double-opponent receptive field configurations. Any single double-opponent neuron only has one receptive field hard wired into it. By having collections of neurons, each selective to a different orientation at the same retinotopic location, we obtain a degree of rotation invariance.

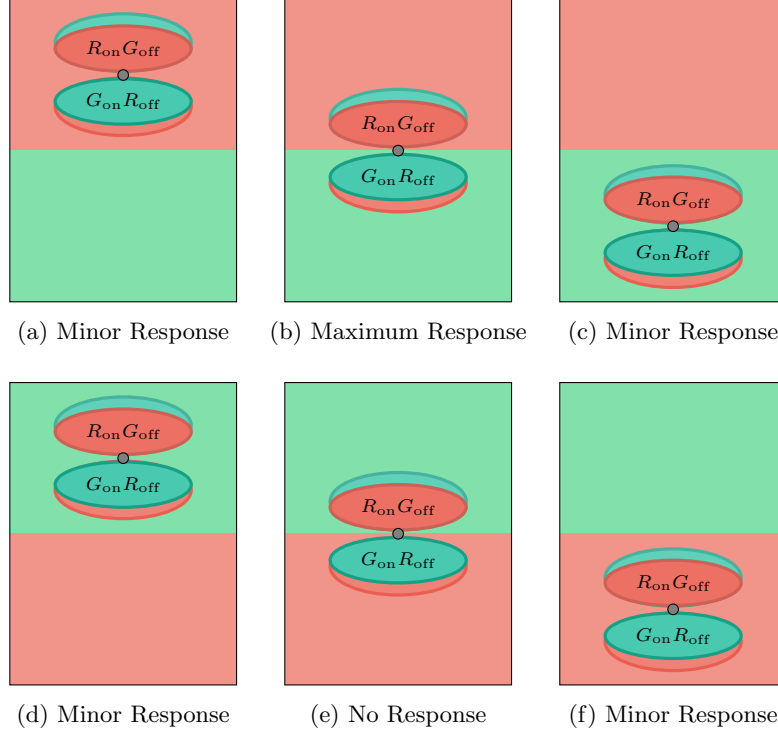


Figure 5: A double-opponent cell selective to horizontally oriented borders with red above and green below; only responsive to that particular stimulus. In Figure (b), the neuron is presented with its ideal stimulus: its L_{on} and M_{on} receptive fields are fully activated while its L_{off} and M_{off} receptive fields are completely unactivated. Figure (e) presents the neuron with the exact opposite stimulus, neither its L_{on} nor M_{on} receptive fields are activate at all, and both its L_{off} and M_{off} receptive fields are fully activated, ensuring no response possible from the cell. While its L_{on} receptive field might be strongly stimulated in (a) and (f), it's L_{off} receptive field cancels it out. Similarly, in (c) and (d) its M_{on} receptive field is stimulated but cancelled out by activity in its M_{off} receptive field.

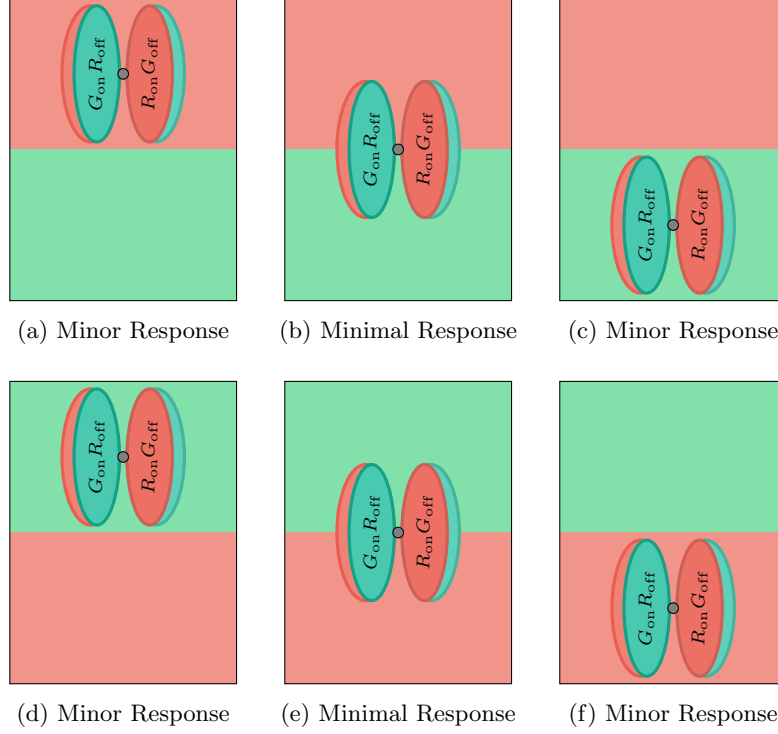


Figure 6: A double-opponent cell selective to vertically oriented borders with red to the right and green on the left; completely unresponsive to a horizontal border. While its L_{on} receptive field might be strongly stimulated in (a) and (f), its L_{off} receptive field cancels it out. Similarly, in (c) and (d) its M_{on} receptive field is stimulated but cancelled out by activity in its M_{off} receptive field. In (b) and (e) both of its L_{on} and M_{on} receptive fields are moderately activated, but again, cancelled out by activation in its L_{off} and M_{off} receptive fields, respectively.