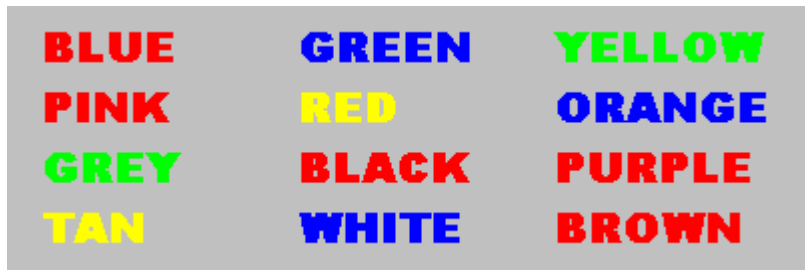


Readings week 3 – Bottom-up, top-down

Bottom-up processing of visual information refers to the process that is driven by the visual image itself. The eye grasps the image, eventually to deduct patterns and objects. In contrast, with top-down processing, the viewer is looking for specific information within the visual input, trying to single out certain elements that are of special interest. Bottom-up and top-down procedures can sometimes be conflicting. For example, the viewer might be explicitly looking for some information (top-down), but is so distracted by other elements of the visualization that ask for attention without specifically looking for them (bottom-up) that it becomes very difficult to find the information needed.



An example of a conflict between bottom-up and top-down processing can be found in the image above. In this exercise, the point is to say the color of the words, instead of reading out the words themselves. In other words, the top-down task that is to be performed is to establish the color of a word and say it, without being distracted by the words themselves. Thus, the point is that there is a bottom-up distraction: a form of automatic pattern recognition (in the form of the alphabetic characters and words) takes place, which makes it difficult to perform the required task. It seems that we are more programmed to interpret words than to identify colors. Thus, by visualizing a color in the form of a written word, the automatic response of the brain to the visualization, namely recognizing the words (bottom-up) and the task that the viewer explicitly tries to perform, namely identifying color (top-down) do not match. Objects are not primarily recognized as having a certain color, but are firstly seen as words.