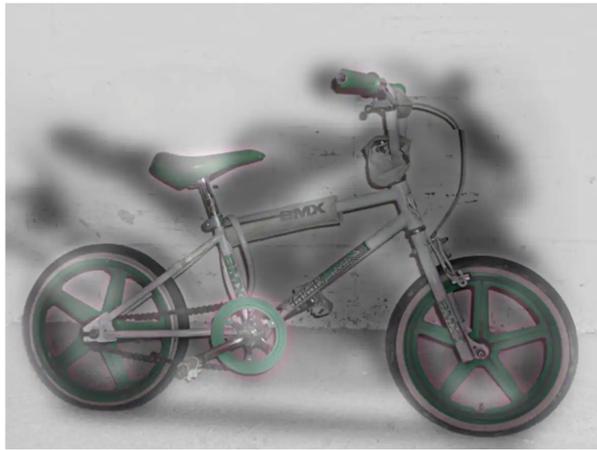


Motorcycle Bicycle

Dr. Aude Oliva

What do you recognize from the distance in the picture?



Look at the picture. What do you see?

Look at the picture again from a few meters away. What do you see now?

From a distance you probably saw an image of a motorcycle but as you get closer it seems to transform into an image of a bicycle with a green seat and green spoked wheels.

Two images are combined in this picture but you recognize each more easily at different distances. The motorcycle image is blurry because it only shows an average of the variations in light and dark area and an average of the contours and shapes. In image processing terms, the image is reduced to the low spatial frequency features and has lost its sharp details. However whenever you are viewing from a longer distance, normally you would only see the same low spatial frequency pattern and easily recognize the motorcycle.

In contrast, the image of the bicycle is reduced to its high spatial frequencies and you can clearly see the outline of the frame, the brake cables, the pedals, etc. You don't notice these details from a distance but once you are close to the picture, you see the bicycle immediately and the blurry motorcycle starts to look like shadows of the bicycle.