

# MATERIAL PERCEPTION

## Observer instructions

December 14, 2010

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In this experiment, we are interested in the perception of object material properties. By material properties we mean both what an object appears to be made of (e.g. plastic, wood, metal, fabric, etc.) and what color it is (red, blue, gray etc.).

The experiment is intended to measure when two objects appear to be made out of the same material. In each trial, you will see a pair of images appear on the display. Your task is to look at the two images and make judgments about the material that the blobs in the images are made of. On some trials, you will be asked to judge the perceived glossiness of the blobs; on other trials, the perceived lightness of the blobs. There will always be 12 consecutive trials of one type. The type is indicated in the beginning of each group of 12 trials by a computer voice. It is also indicated with text above the images throughout the experiment.

In both types of trials, you will give your response about on which side the lighter/glossier blob is by pressing the left hand or the right hand keys on the top of the joystick.

Although we are interested in how you perceive object material, there will also be irrelevant differences between the images. In particular, there are conditions where each blob will be illuminated differently, and there are conditions when the two images contain blobs of different shapes. We would like you to ignore the illumination and shape differences and judge what the stimuli appear to be made out of.

To give you a more concrete idea of what we mean by perceived glossiness and perceived lightness, please look at the images in this handout. All of the images are of the same shape and rendered under the same lighting. Some look glossier than others and some look lighter than others. In particular, all of the images on the bottom row look glossier than any of the images on the top row. Similarly, all of the images in the right column look lighter than any of the images in the left column. Indeed, as you look down any column, the images become progressively more glossy. As you look across any row, the images become lighter. [Do you see what we mean by this? Discuss.]

In the experiment, the comparisons may not be as straightforward as the ones we have just illustrated. For example, you may be asked to judge the relative lightness of two objects that differ in glossiness or vice-versa. Also, there may be differences in illumination and shape across the judgment. What we would like you to do is to focus on the glossiness and lightness of the material that the object appears to be made out of.

One block of the experiment consists of 240 trials, and it normally takes between 10 and 15 minutes to run such a block. Each stimulus will remain on the screen until you give a response, so if you need to take a break within a block, you can do so by not responding until you are ready to continue. If you do take a break within a block, please remain in the experimental room with the lights out. You will have a chance to take a longer break and leave the room between blocks.

After one block has finished, you will be asked whether you want to continue to the next block. Press the left hand key if you wish to exit, and the right hand key if you wish to continue. In the latter case, you can take a break before you continue. In general, each experimental session takes about an hour, but this may vary a bit between observers.