Seven Puzzles of Pictorial Representation

Gabriel Greenberg (UCLA) Originally published online 9.7.13, at "Aesthetics for Birds"[1]

In this short essay I pose seven puzzles about the representational content of pictures. By "pictures" I mean, roughly, perspectival images like architectural and figurative drawings, photographs, or maps. All the puzzles here presuppose that pictures have *content*. This is a natural idea: a picture represents the world as being a certain way; *how* it represents the world as being is its content. The fact that pictures have content is what makes them useful for communication, problem solving, and entertainment.

The puzzles here focus especially on the kinds of *properties* that are attributed in pictorial content. The very first puzzle brings to the fore how rich and complex such attribution can be. The remainder zero-in on relatively low-level spatial properties. As you'll see, there is no shortage of perplexity, even at this very basic stratum. As far as I know, these puzzles represent basically open questions.

To characterize the content of a picture, I'll typically use a sentence of the form "Picture P *depicts* Object O *as* Property P." The property in this case is *attributed* by the picture *to* the object. I'll call the object which is having properties attributed to it the "subject" of the picture. When the geometry of a picture fits perfectly with the basic geometry of the scene (no matter if it happens to be misleading), I'll call the depiction "perfectly accurate." (For those who'd like to get into more detail about these terminological decisions, I've included an appendix at the end.)

1. Some changes have been implemented to make this piece more appropriate for the present (non-blog) setting. The original post can be found here: http://www.aestheticsforbirds.com/2013/09/seven-puzzles-of-pictorial-content.html

1 The Portrait of Lady Gaga

Context. Here is a fan-art portrait of Lady Gaga. For the sake of argument, let's suppose it was drawn from life.[2]

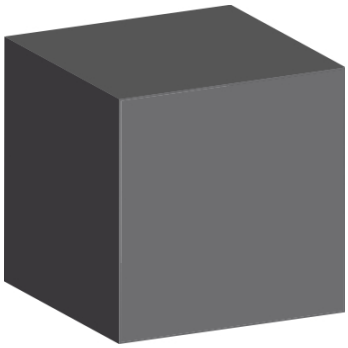
Puzzle. Does this portrait of Lady Gaga depict her as...

- *having nose, eyes, and mouth?*
- *having lungs?*
- *having feet?*
- *being a person?*
- *sitting for a portrait?*
- *being a musician?*
- *having sung the song "Telephone"?*
- *having sung the song "Pokerface"?*

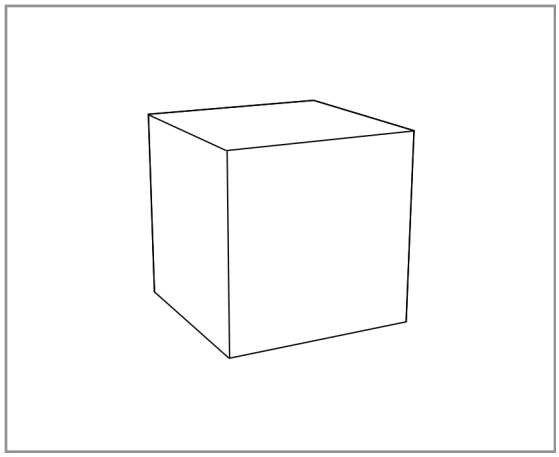
2. Drawing by Vania, http://www.stars-portraits.com/en/portrait-120503.html

2 Two Views of a Cube

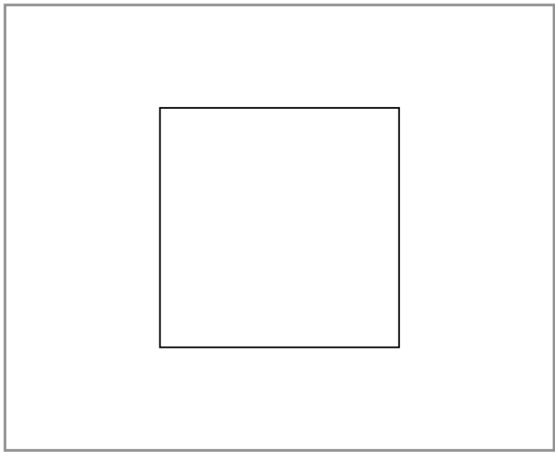
Context. I've got a favorite cube. You can see it here.



I put the cube on my desk and then make two perfectly accurate line drawings of it, from two different views. The first view is from an angle off one corner of the cube. From this view I produced picture A. The second view is from directly overhead. From this view I produce picture B.



A

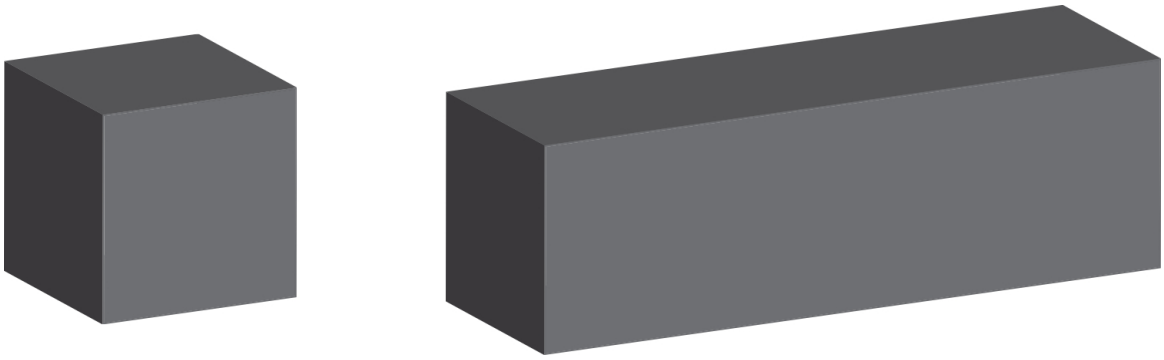


B

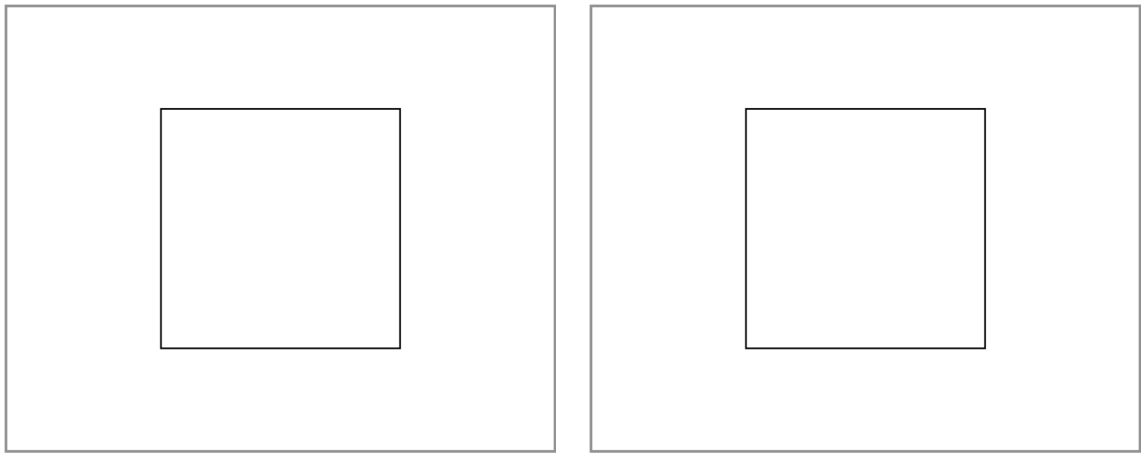
Puzzle. It's natural to think of picture A as depicting its subject as *being cube-shaped*. But does picture B depict its subject as *being cube-shaped*? If *no*, then what grounds the difference in content between the two pictures? If *yes*, then I invite you to the next puzzle...

3 The Cube and the Rectangular Box

Context. I've got a favorite cube and a favorite rectangular box. Here they are:



Now, I place my favorite cube before me, and assume a viewpoint directly across from it. I proceed to make a line drawing of the cube, without any of the background included. I produce picture C. Later on, I place my favorite rectangular box before me, and assume a viewpoint directly across from one of its short faces. Now I make a line drawing of the box, again without any of the background included. I produce picture D. Both drawings are perfectly accurate from their respective viewpoints. As it happens, the two pictures are type-identical.

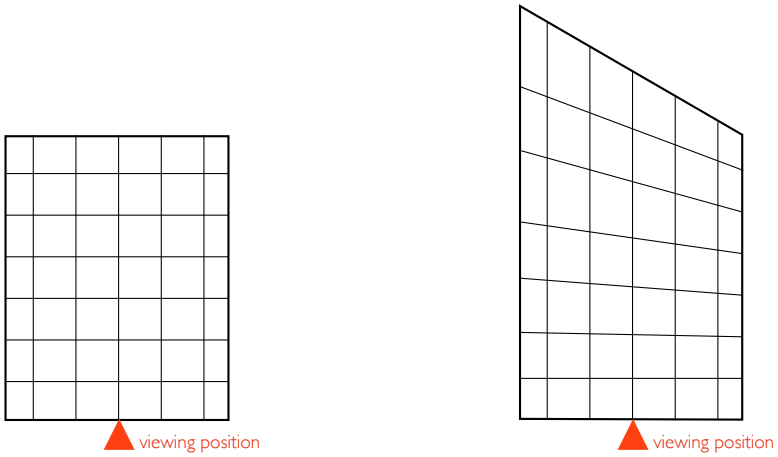


C **D**

Puzzle. Does picture C depict its subject as *being cube-shaped*? Does picture D depict its subject as *being rectangular-box-shaped*? If the answer to both questions is *yes,* what grounds the difference in content between the two pictures? If the answer to both questions is *no,* then what properties do these pictures attribute to their subjects?

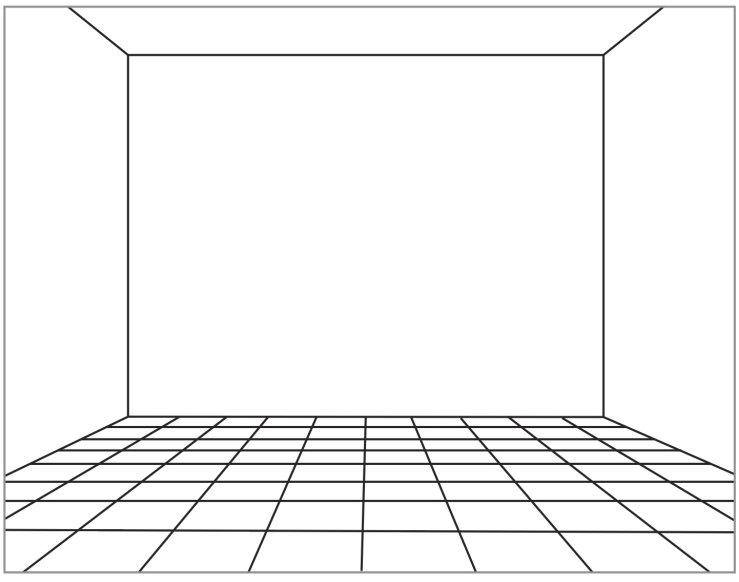
4 The Ames Room

Context. An Ames Room is a room with bizarre geometry, carefully designed so that, when viewed from a standard viewing position, it appears to have the rectilinear geometry of a normal room. The diagram below illustrates (pretty crudely) the difference between a normal rectilinear room and an Ames room.



Rectilinear Room *Ames Room*

While walking down a hallway in strange building, I peer through a tiny peep-hole in a door. Inside I see a room. The room appears to have the geometry of a rectilinear room, and this is what I come to believe. I draw what I see, producing picture E below. In fact, unbeknownst to me, the room is an Ames room, and I am looking at it from the standard viewing position.

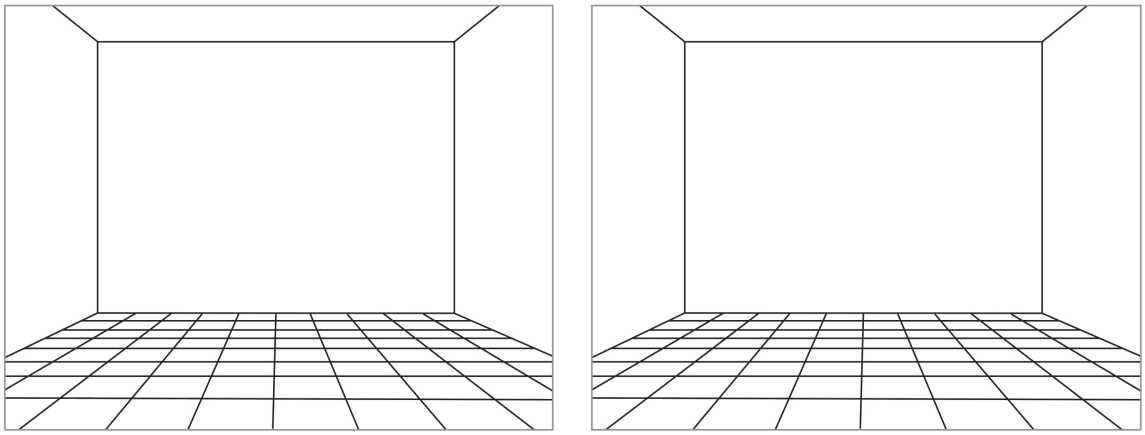


E

Puzzle. Does picture E depict its subject as *having Ames geometry*? or as *having rectilinear geometry*? or does it attribute some other geometry to the room?

5 Two Rooms

Context. One day I knowingly visit my local Ames Room, and draw it from the standard viewing position. I produce picture F. Picture F is perfectly accurate, given the viewpoint. The next day I knowingly visit my local Normal Room, which has rectilinear geometry, and draw it from some viewpoint. I produce picture G. Picture G is perfectly accurate, given the viewpoint. As it happens, the two pictures are type-identical.

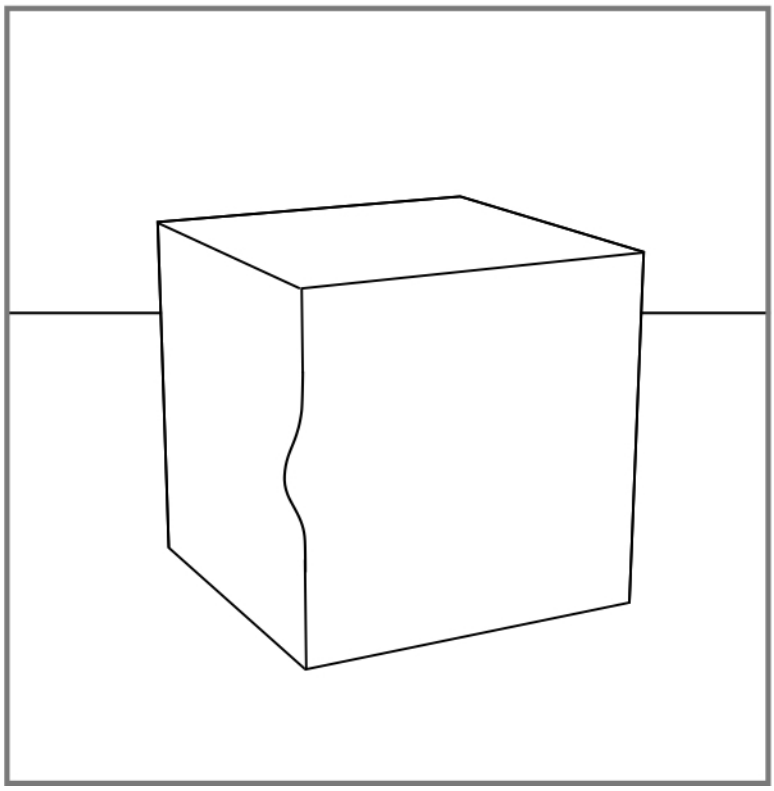


F **G**

Puzzle. Does picture F depict its subject as *having Ames geometry*? Does picture G depict its subject as *having rectilinear geometry*? If the answer to both questions is *yes*, what grounds the difference in content between the two pictures? If the answer to both questions is *no*, then what properties do these pictures attribute to their subjects?

6 Unsteady Hands

Context. I have occasionally unsteady hands. I set out to draw my favorite cube perfectly accurately, and do pretty well, but mistakenly add one superfluous curve to an otherwise accurate drawing.



H

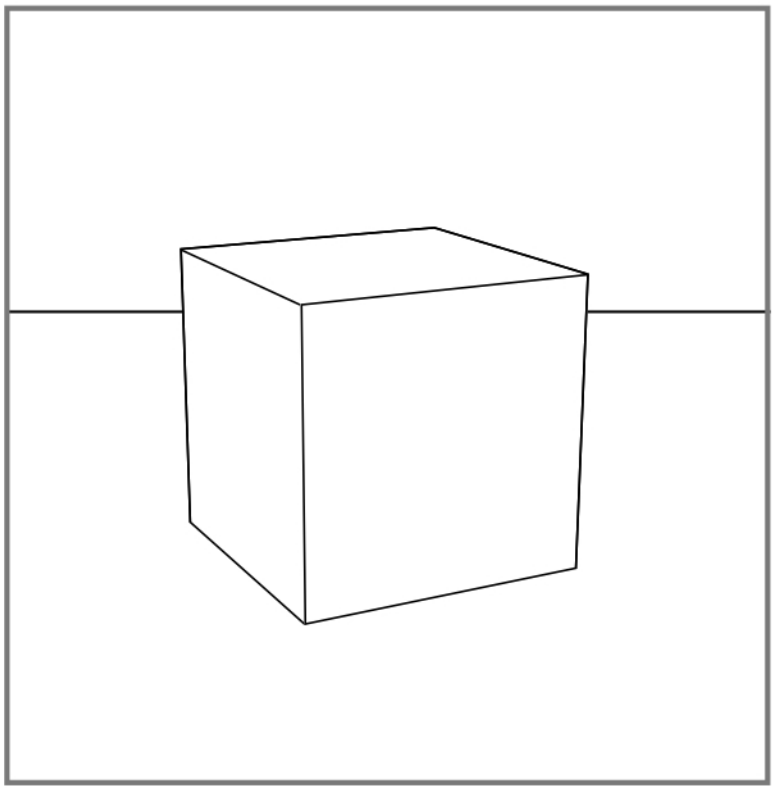
Puzzle. What is the precise spatial content of my picture H? Assuming it does not depict its subject as simply *being cube-shaped*, then... Does it depict it as *having a flat front face that protrudes above its top corners* (pictured at left below)? Or as *having an indented front faces that does not protrude* (pictured at right below)? Or something else?

Profile 1

Profile 2

7 The Absent Cube

Context. I sit down at my empty desk, pop some acid, and soon hallucinate a perfect but unfamiliar cube sitting on the desk before me. I proceed to create the drawing J below, which I believe perfectly accurately depicts the situation before me. (Alternatively: I draw the surface of my desk from memory, not life. I have a false memory that there was a cube on the desk. I believe my drawing accurately depicts the situation I remember.)



J

Puzzle. Does picture J depict my desk as *having a cube sitting on it*? Yes is the natural answer, but why? If it is because of the artist's beliefs or intentions, did you also give artist's beliefs or intentions primacy in Puzzles 4, 5, and 6?

Addendum on Terminology

It can be useful to standardize the way we talk and think about pictorial content, especially since using language to describe pictorial content can be an awkward fit.

We can divide pictorial content into pictorial reference and pictorial attribution. What a picture *refers* to are the things that the picture is *of* or *about*. What properties a picture represents its referents as instantiating is what it *attributes*. This distinction is reflected in the common "depiction as" formulation for describing pictorial content. I use the formulation in sentences such as these:

1. The picture depicts Ponyo as walking across the street.
2. The picture depicts the president as waving her hand.
3. The picture depicts the cube as being a cube.

All of these have the format

> [picture] *depicts* [object] *as* [property]

where the thing denoted by the term in the [object] position is a referent of the picture, and the thing denoted by the term in the [property] position is a property attributed by the picture to its referent. No single "depicts as" sentence, at least none of readable length, will capture the entire content of a picture. Each such sentence offers only a partial characterization of a picture's content.

Any singular term can fill the [object] position, such as a name in (1) above, or definite description in (2) and (3). As I choose to fix things, I'll never take a definition description in the [object] position to express what properties the picture itself is attributing. (Natural language may be less rigid in this regard.) Thus (2) above does not characterize the picture's content as attributing the property being the president. For the same reason (3) is not a triviality.

A picture may have many referents. To avoid the philosophical burdens of the term "reference," I call the referents of a picture its "subjects." When one such subject is especially salient, I call this "the subject" of the picture.