

## Photographic Dimensions

### I really only mean the "third dimension"

2021-01-21

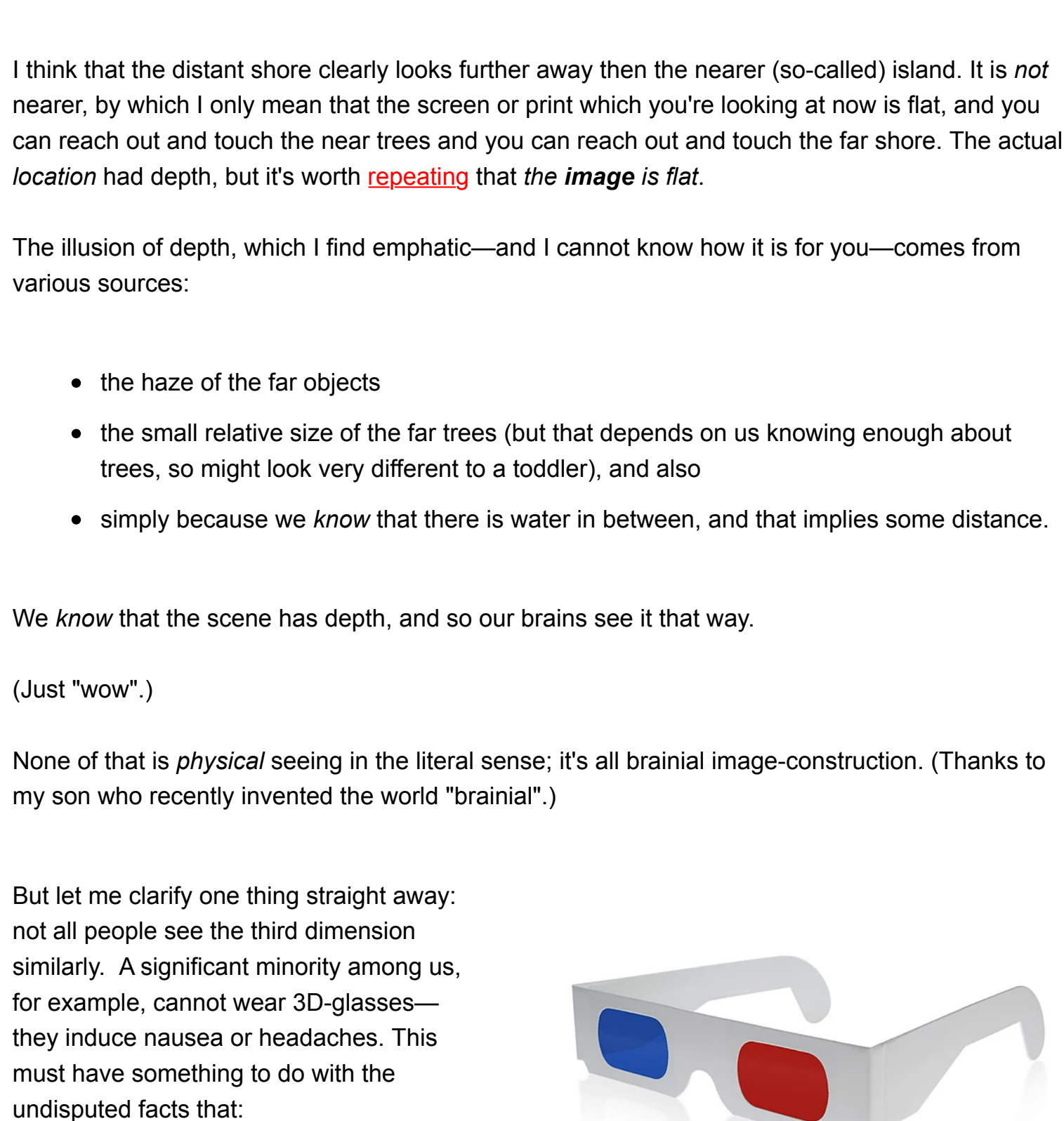
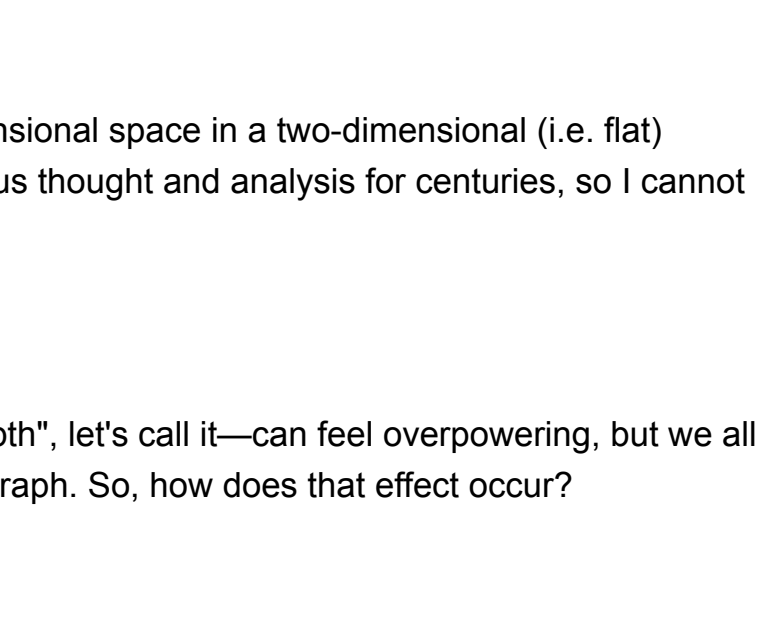
There can be more than three dimensions, if we start with the three in "spatial" and then add in other things, like time, and then meaning, and so forth.

(More on "meaning" perhaps some other time. My daughter thinks it deserves a blog of its own. She sees dancers, for example, in the seed-pods in my [video](#) blog.)

But this concerns how we represent three-dimensional thought in a two-dimensional (i.e. flat) medium, which has been the subject of conscious thought and analysis for centuries, so I cannot possibly add anything new here, except ...

... some of it may be new to you.

Of note, the illusion of the third dimension—"depth", let's call it—can feel overpowering, but we all know that there is no physical depth to a photograph. So, how does that effect occur?



Blockhouse Island, Brockville, Ontario, almost monochrome, definitely shows depth

I think that the distant shore clearly looks further away than the nearer (so-called) island. It is not nearer, by which I only mean that the screen or print which you're looking at now is flat, and you can reach out and touch the near trees and you can reach out and touch the far shore. The actual location had depth, but it's worth [repeating](#) that the *image* is flat.

The illusion of depth, which I find emphatic—and I cannot know how it is for you—comes from various sources:

- the haze of the far objects
- the small relative size of the far trees (but that depends on us knowing enough about trees, so might look very different to a toddler), and also
- simply because we know that there is water in between, and that implies some distance.

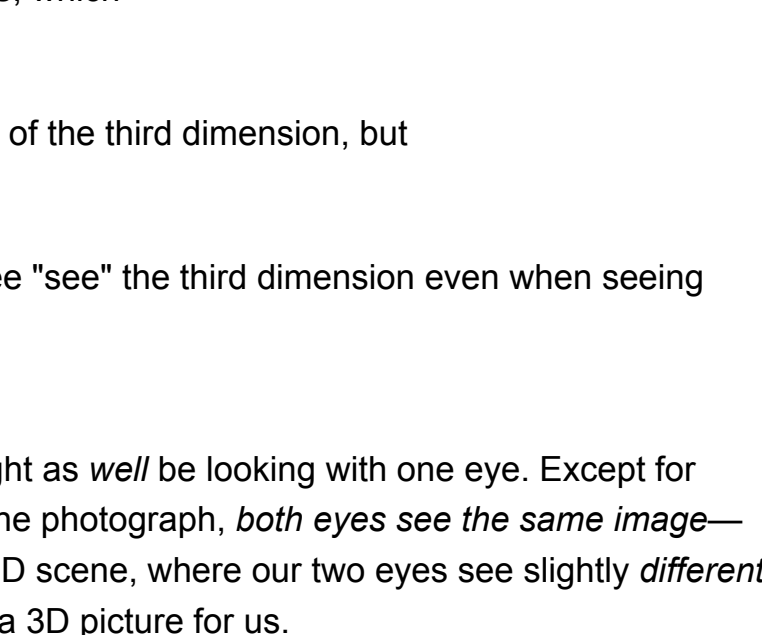
We know that the scene has depth, and so our brains see it that way.

(Just "wow".)

None of that is *physical* seeing in the literal sense; it's all brainial image-construction. (Thanks to my son who recently invented the word "brainial".)

But let me clarify one thing straight away: not all people see the third dimension similarly. A significant minority among us, for example, cannot wear 3D-glasses—they induce nausea or headaches. This must have something to do with the undisputed facts that:

- we don't see with our eyes, which only collect data; we see with our brains, which
- construct a picture for us, which
- for me includes an overwhelming sense of the third dimension, but
- doesn't do so identically for everyone.
- Also, many of us can still to some degree "see" the third dimension even when seeing with only one eye.



When we're looking at a flat photograph, we might as well be looking with one eye. Except for slight differences in the angle from our eyes to the photograph, both eyes see the same image—not so in the real world, gazing upon an actual 3D scene, where our two eyes see slightly different images ([catoptics](#)), from which our brains create a 3D picture for us.

If you need more convincing, then look at the Blockhouse Island photograph, above, with one eye closed, and you (or at least "I") still see depth. Find another scene—just look around you wherever you are now—note the three-dimensionality, then again close one eye; it quite likely doesn't go completely flat.

With monocular vision, the third dimension doesn't look the same as with two eyes—again all I can say is "to me"—but it's still there.

Why this occurs I can only partly explain, but the important thing for now is that it does occur.

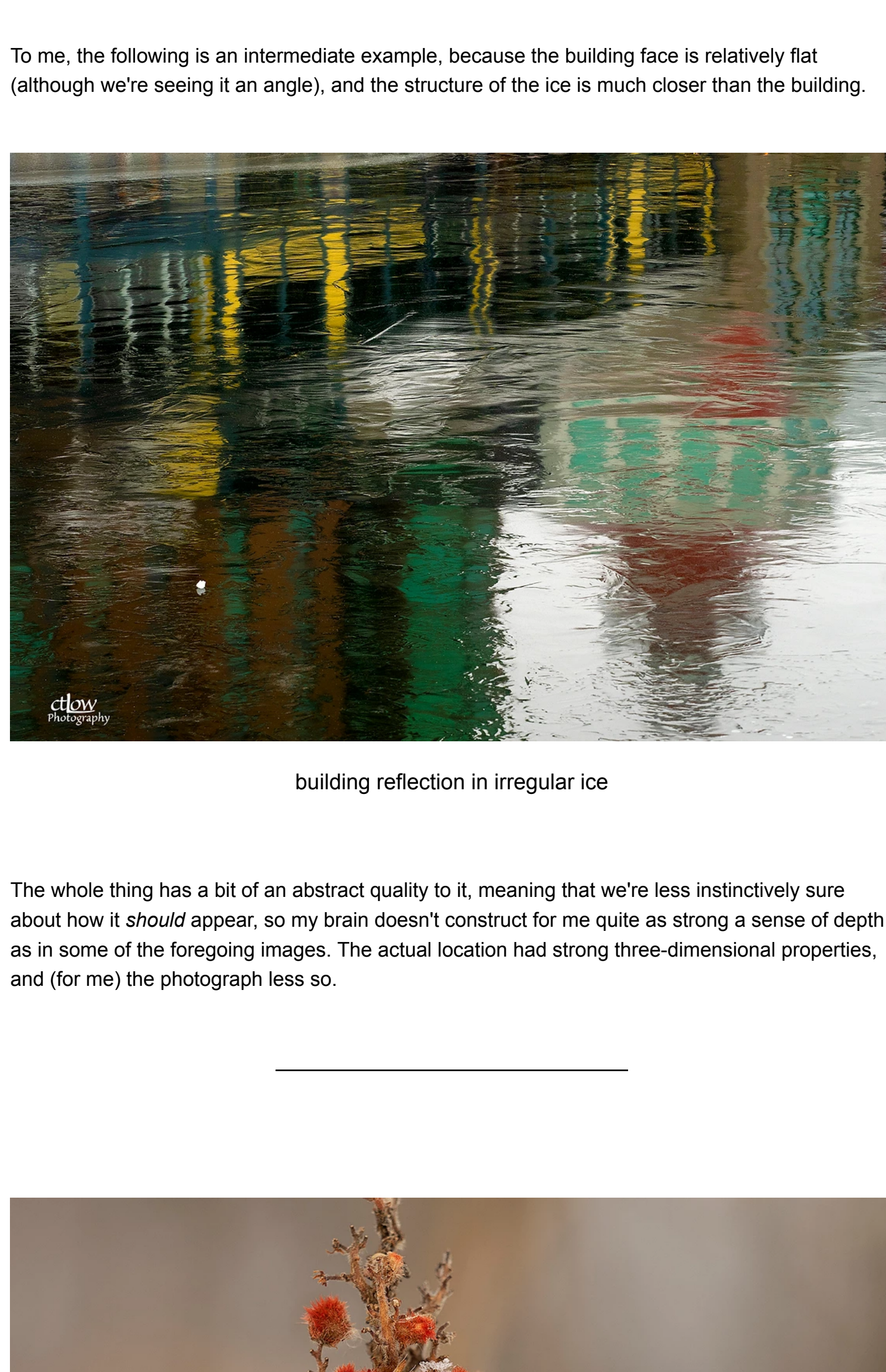
But the sense of depth from flat media has limits, which I don't find completely predictable. In general, when representing a three-dimensional actual scene on any two-dimensional medium, I find it safest to assume that all sense of depth will vanish, unless the artist takes specific measures to counter that.

On a group shoot a year or three back, a photographer beside me was lining up some shot, and getting a little excited (as we do) because it looked so great, and I uttered these simple words: "Look at it first with one eye closed."

They did so and said, "Oh," and didn't bother with it any further. (Sorry. But I think that was the right decision.)

Things which look absolutely stunning to me, I often find, depend so heavily on their three-dimensionality that there's nothing of worth there when I line it up as a two-dimensional photograph.

I used to scout for telephoto photo-opportunities with binoculars, and soon desisted, because almost everything which looked so amazing when seeing stereoscopically just became blah when viewed flat; it worked better simply to use my camera lens to search for compositions, and then at least I knew what I was getting, and saved myself much disappointment.



Brock Trail - I see the third dimension

Once again, the image above is 100% flat (the image, not the actual location), and yet we ("I" see depth, because ... the trail gets smaller, the footprints get smaller, the trees get smaller, and ... we all know how trails work! The last point is so integral to our intellects, so early on in life, that it can seem trivial, but I submit that the 3D effect will be less apparent when we don't know what we're looking at.

Check out this amazing video demonstration ([Asamorphosis](#)), if you've got 17 minutes to spare.

The church spire on the right is from a different church, a block further away than the near one. No one gets that. (It took me a while to get that.) As soon as we don't know that it's further away, it doesn't look further away (in a two-dimensional photograph).

Isn't that wild?

(Click that spire image, or any other image here, to see it bigger—even more surprising that way.)



no 3D illusion, largely because we simply don't know



converging lines

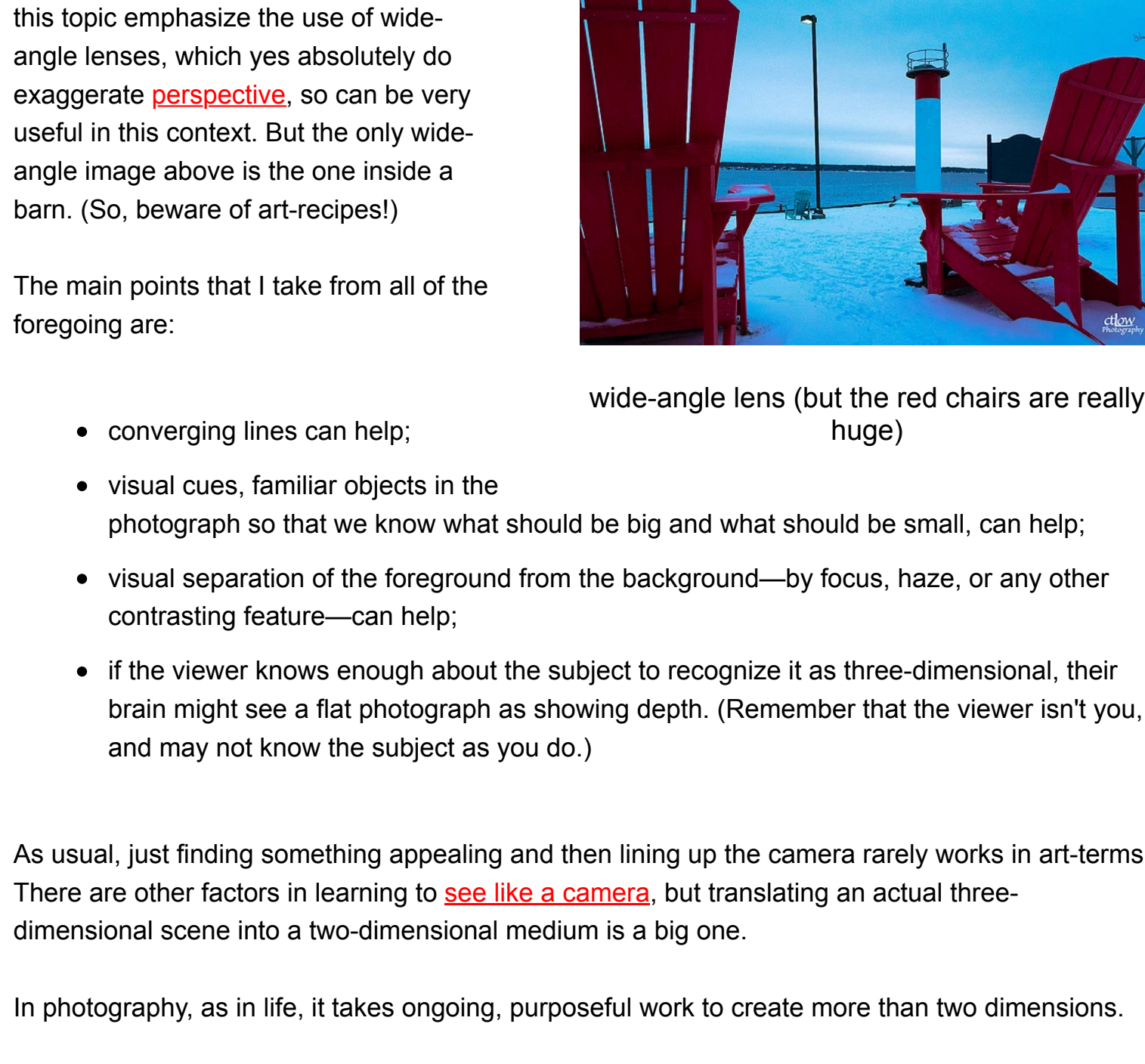
Another way to analyze the snowy trail is by comparing it to the ubiquitous example of converging lines, which give a sense of depth to an image.

To me, the following is an intermediate example, because the building face is relatively flat (although we're seeing it at an angle), and the structure of the ice is much closer than the building.



building reflection in irregular ice

The whole thing has a bit of an abstract quality to it, meaning that we're less instinctively sure about how it should appear, so my brain doesn't construct for me quite as strong a sense of depth as in some of the foregoing images. The actual location had strong three-dimensional properties, and (for me) the photograph less so.



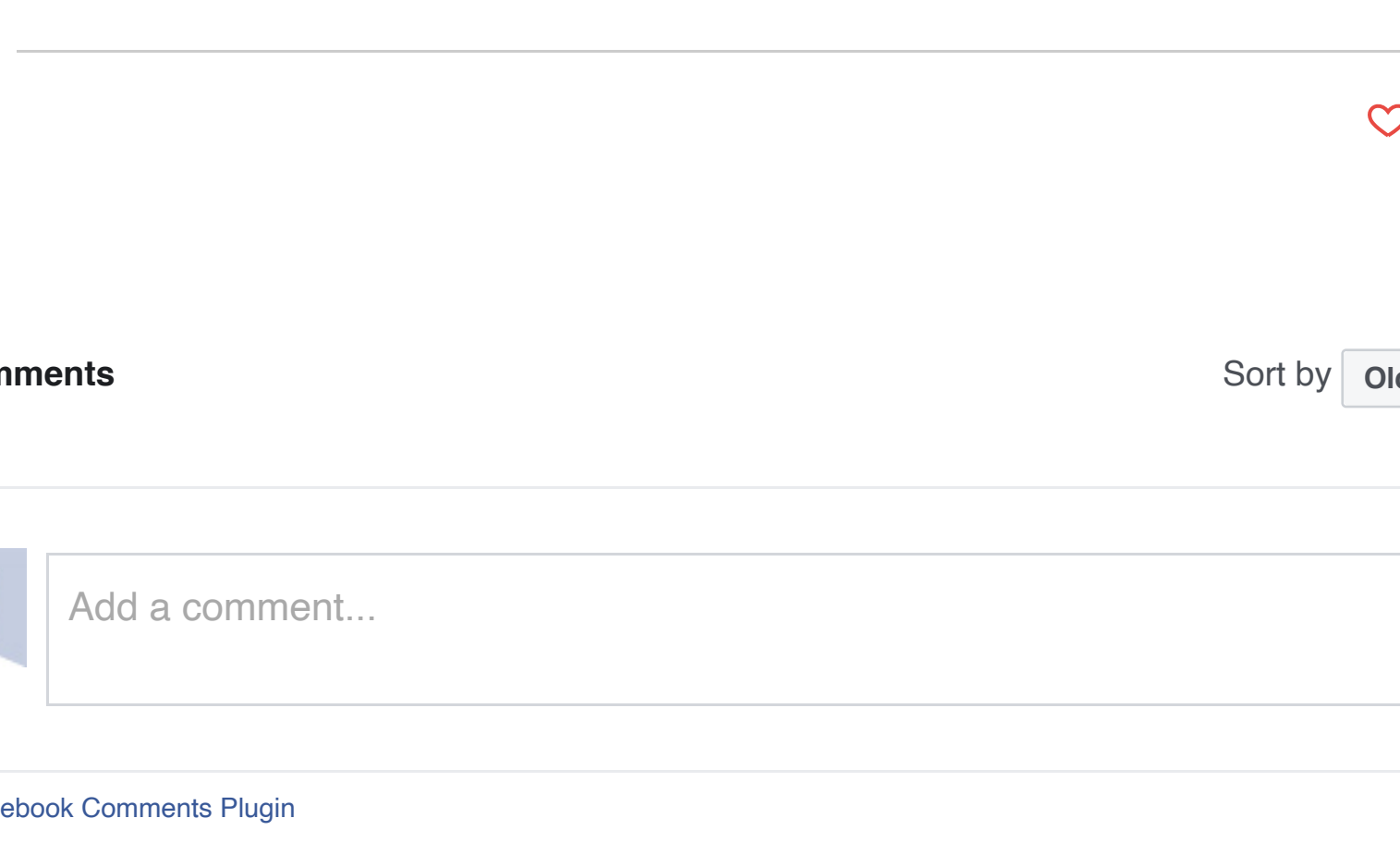
mixed 3D properties

The above shows (to me) two effects:

- the seed-pod structure was strongly three-dimensional, but I don't think looks so much that way in the photograph, because the plant has fewer recognizable visual cues about near and far, but
- it stands out from a clearly more distant background.

I made the background "recede" (in quotes because I mean "recede visually"—there was nothing I could do about its actual distance from the branchlet), by manipulating my camera settings. (If you don't know how, ask me. This one was a bit complicated.)

Finally, this:



curly winter branchlet against snow ... with some sense of depth

Do you get the feeling that the right-most parts of this branchlet were closer to the camera than the left-most? (I do, but then I was there, so I know.) You may perceive some visual cues about the third dimension from the overall structure, but I can say that over many years, I have struggled with images like this, which may look very intriguing to my eye (brain) but lose all depth as a photograph.

I think that the one above does show depth—enough depth—and that may be partly because the near and especially the far portions are less in focus than the rest. I also very consciously and carefully chose the distance from the very small subject (about 1 m), and the angle (to allow the structure to be more self-evident), and the depth of field, among other things.

But it's a tough one.

(Oh, and ... do you like it? You know I like it, because I'm showing it. It feels quite [disimilar](#) to my usual non-style, which is good, as long it's good.)

So, those are my idle musings on simulating the third dimension in photographs.

Note that many standard expositions on this topic emphasize the use of wide-angle lenses, which yes absolutely do exaggerate [perspective](#), so can be very useful in this context. But the only wide-angle image above is the one inside a barn. (So, beware of art-recipes!)

The main points that I take from all of the foregoing are:

- converging lines can help;
- visual cues, familiar objects in the photograph so that we know what should be big and what should be small, can help;
- visual separation of the foreground from the background—by focus, haze, or any other contrasting feature—can help;
- if the viewer knows enough about the subject to recognize it as three-dimensional, their brain might see a flat photograph as showing depth. (Remember that the viewer isn't you, and may not know the subject as you do.)

As usual, just finding something appealing and then lining up the camera rarely works in art-terms. There are other factors in learning to [see like a camera](#), but translating an actual three-dimensional scene into a two-dimensional medium is a big one.

In photography, as in life, it takes ongoing, purposeful work to create more than two dimensions.

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Stay safe; the pandemic still rages, and doesn't care if we're tired of it.

Charles T. Low

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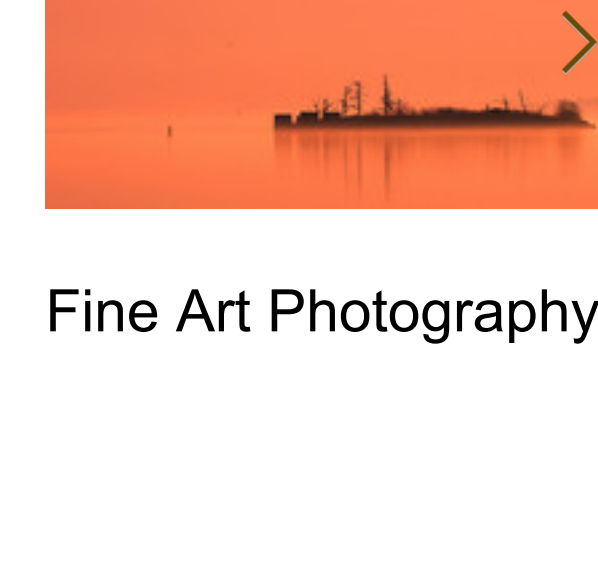
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