That "direct phenomenal beliefs cannot be false" (p278) is said to be true by definition. Time to review some definitions!

"Red" is the only public language word in the vicinity, naming an "external color". A "paradigmatically red" thing can be a thing that *every* normal color percipient in a community agrees is red: hexagonal stop signs in the US, postboxes and double-decker buses in the UK, blood, ripe tomatoes, etc.

**red**\(_C\): (the community relational concept) "the phenomenal quality typically caused in normal subjects within my community by paradigmatic red things" (255). Given the possibility of intersubjective spectrum inversion, I think should be read as "the disjunction of phenomenal qualities typically caused in ..." (Chalmers says "The community reading of 'red' guarantees a sort of shared meaning within the community in that all uses of the term are guaranteed to corefer" (p 255). To get coreference I think we have to allow its reference to be to *any* phenomenal quality typically caused in normal subjects within my community by those paradigmatic red things.)

**red**\(_I\): (the individual relational concept) "the phenomenal quality typically caused in me by paradigmatic red things" (255). Given the possibility of completed intrasubjective inversion, I think this should be read as "the disjunction of phenomenal qualities typically caused in me by ...

"completed intrasubjective spectrum inversion" (my term) requires the completion of three conditions. (a) You wake up one morning and the color appearances of many objects have changed from the colors of the day before to their "inverses". A simple model is that the hues of everything have changed to their complements, as in a color negative. Stop signs look green, grass looks red, etc. (b) You gradually "adapt" to the color change, so that your use of color words adjusts to match that of the other members of your community. You'll effortlessly assert that stop signs are red and grass is green even though they appear to you to be, respectively, green and red. (c) You lose all memory of the color swap itself and of having to adapt to it. Furthermore all memories of the colors of objects prior to the color swap are adjusted so that it will seem to you as if objects have always had more or less the colors they have now. Only after (c) are you once again functionally identical to your old self.

**this**\(_E\): the demonstrative phenomenal concept; "*this* quality of experience"

When seeing a tomato, I can refer indexically to a visual quality associated with it, using a concept I might express by saying 'this quality' or 'this sort of experience.' ... This concepts functions in an indexical manner, roughly by picking out whatever quality the subject is currently ostending. Like other demonstratives, it has a "character" that fixes references in a context roughly by picking out whatever quality is ostended in that context, and it has a distinct "content" that corresponds to the quality that is actually ostended--in this case, phenomenal redness. The demonstrative concept this; rigidly designates its reference, so that it picks out the quality in question even in counterfactual worlds in which no one is ostending the quality. (256)

(By "ostending" or "demonstrating" or "referring indexically to a visual quality" I think all that Chalmers means is: attending to it. See 268 ff. He says "all demonstrative phenomenal concepts are based in acts of attention to instances of phenomenal qualities" on p 268, last para.)
Chalmers argues we need a fourth kind, which does not pick out its extension relationally, but instead "directly, in terms of its intrinsic phenomenal nature". These are the concepts \( R \), \( G \), (etc) which he calls "pure phenomenal concepts" (256). We need these on the assumption that Mary learns a new fact when she sees red for the first time.

"She learns (or gains the cognitively significant belief) that the experience she is now having has such-and-such a quality, and that the quality she is now ostending is such-and-such". Call Mary's "such-and-such" concept here \( R \) ... she gains the belief this\( E \) = \( R \) -- roughly, that the quality she is now ostending is such-and-such." (256-257)

Some assertions about \( R \)

1. For Mary "this\( E \) = \( R \)" is not a priori. (p 257). But "\( R \) is a substantive concept that is tied a priori to a specific sort of quality" (258)--e.g., to a phenomenal quality.

2. "The primary intension of \( R \) is quite distinct from all of these [the primary intensions of red\(_C\), red\(_I\), and this\( E \)]. It picks out phenomenal redness in all worlds. When Mary believes roses cause \( R \) experiences or I am currently having an \( R \) experience, she thereby excludes all epistemic possibilities in which roses cause some other quality (such as \( G \), phenomenal greenness) or in which she is experiencing some other quality. Only epistemic possibilities involving phenomenal redness remain. (Chalmers 2010, 260)

3. "pure phenomenal concepts (unlike demonstrative phenomenal concepts) are not indexical concepts at all" (260, bottom)

4. "Mary's concept \( R \) and Inverted Mary's concept \( G \) differ not just in their referents but also in their epistemic content. When Mary leaves the monochromatic room... she is thereby in a position to rule out the epistemic possibility that tomatoes cause experiences with quality \( G \). The only epistemic possibilities compatible with her belief are those in which tomatoes cause \( R \) experiences. For Inverted Mary, things are reversed. The only epistemic possibilities compatible with her belief are those in which tomatoes cause \( G \) experiences." (264)

5. "the quality of the experiences plays a role in constituting the epistemic content of the concept and of the corresponding belief. One might say very loosely that in this case, the referent of the concept is somehow present inside the concept's sense in a way much stronger than in the usual cases of 'direct reference'." (264-65)

**direct** phenomenal concepts: pure phenomenal concepts whose formation is such that "the content ... is partly constituted by an underlying phenomenal quality" (267).

The clearest cases of direct phenomenal concepts arise when a subject attends to the quality of an experience and forms a concept wholly based on attention to the quality, "taking up" the quality into the concept. This sort of concept formation can occur with visual experiences, as in the Mary case... (267)

The central example is Mary, forming the concept \( R \) when she sees a red thing for the first time. Direct phenomenal concepts have a "limited lifespan" (272), presumably ending as soon as attention can no longer pick out the identical phenomenal property. But they allow the formation of a **direct phenomenal belief**:

Mary has a phenomenally red experience, attends to it, forms the direct phenomenal concept \( R \), and forms the belief this experience is \( R \), demonstrating the phenomenally red experience in question. ... In this framework, we can say that a direct phenomenal concept is formed by attending to a quality and taking up that quality into a concept whose content mirrors the quality, picking out instances of the quality in all epistemic possibilities. A direct phenomenal belief is formed when the referent of this direct phenomenal concept is identified with the referent of a corresponding demonstrative phenomenal concept. This
happens, for example, when Marry forms the belief this quality is R. The general form of a direct phenomenal belief in this framework is \( t_{E} = R \) (268).

Some provisos about "direct phenomenal beliefs"

1. "For a direct phenomenal belief, it is required that the demonstrative and direct concepts involved be appropriately "aligned"." (268). If their extensions are not identical, then by definition the concepts are not "appropriately aligned", and we don't have an instance of a direct phenomenal belief. An example he gives: Mary experiences phenomenal redness on both sides of her visual field, attends to the left side of the fixation point while thinking "this quality of experience", but attends to the right side while forming the pure phenomenal concept \( R \). The result is not a "direct phenomenal belief"; the concepts don't have the same extension. (And this is why infallibilism is true by definition of direct phenomenal beliefs.)

2. So \( t_{E} \) and \( R \) must be based on the same act of attention. (see 268, bottom)

3. Attention to exactly the same experience might pick out more or less determinate phenomenal properties. One person might be able to attend to the highly specific (fully determinate?) shade of phenomenal redness, while another might only manage to attend to its reddishness (or for that matter its being non-greenish). (269). These yield different phenomenal beliefs. (269)

4. The Nancy case (p 269-270). Nancy attends to a patch but fails to notice it has a "nonuniform phenomenal color". In this case \( t_{E} \) fails to refer; the demonstrative phenomenal concept will refer to no quality at all (see 270, top).

5. "The lifetime of a direct phenomenal concept is limited to the lifetime of the experience (or the instantiated quality) that constitutes it." (272). They "might persist for a few moments due to the persistence of a vivid iconic memory". But in general no "standing phenomenal concept" is direct.

Two notes: (1) we're pretty clearly talking about how things appear; it's hard to translate the talk about left and right sides, determinable and determinate shades, color patches, and nonuniform colors into talk about the properties of the havings of experiences. (2) It isn't clear whether a human could ever know whether or not they have formed a direct phenomenal belief, given these provisos. His examples illustrate how a belief might to its subject appear prima facie to be a direct phenomenal belief, but fail to be so.

Some final murky terminology

- **quasi-direct** phenomenal concepts =df all the concepts that "share the cognitive structure of a direct phenomenal concept" (p. 270). Likewise for quasi-direct phenomenal beliefs. Some of these are direct, but they have to satisfy the provisos above. Others are not direct, though they have the right structure. See next.

- **pseudo-direct** phenomenal concepts =df the quasi-direct ones that do not satisfy the provisos above. Same for pseudo-direct phenomenal beliefs. The concept could (I guess) either fail to pick out any one phenomenal property, or it might somehow fail to "take up that quality into the concept". The belief can fail to have the two relevant extensions "aligned", in which case it is false and (by definition) not a direct phenomenal belief. It might be simpler to call the "quasi-direct" ones **prima facie direct**, and the "pseudo-direct" ones **not direct**.