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# How to talk (precisely) about visual perception? The case of the duck/rabbit

**Abstract:** In *Remarks on the philosophy of psychology* Wittgenstein uses ambiguous illusions to investigate the problematic relation of perception and interpretation. I use this problem as a starting point for developing a conceptual framework capable of expressing problems associated with visual perception in a precise manner. I do this by discerning between subjective and objective meaning of the term “to see” and by specifying the beliefs which are to be ascribed to the observer when we assert that she sees a given object. The framework (detailed in section 2) is then used to analyze the case of the duck/rabbit illusion. It shows that ambiguous illusions present us with a specific skeptical challenge but that the challenge can be overcome by empirical sciences. Along the way I explicate some of the common notions associated with perception (“to look at”, “to have an impression of...”, “to react as if one had an impression of..”, “to convince oneself that what one sees is...”).

**Keywords:** Wittgenstein, duck/rabbit, ambiguous illusions, optical illusions, perception, impressions, belief ascription.

## 1. Trouble with perception

It seems to be a paradox of sorts (or perhaps it’s just irony) that talking about perception leads to so much confusion and so many misunderstandings. After all, shouldn’t that which is given in perception be evident? Isn’t perception our model case of what “being evident” is? Nowhere is this tension better expressed than in the works of later Wittgenstein. In *Remarks on the philosophy of psychology* (1980) he presents the reader with a collection of visual puzzles the most famous

being the duck/rabbit picture.<sup>1</sup> All of these illusions are there to examine the relation between perception and interpretation. What do we see directly and what is interpreted or inferred from what we see? Is there such a thing as pure, direct perception? Questions like this are, of course, closely related to the question of relation between perception and language because interpretation is first and foremost a linguistic activity. As such it is something Wittgenstein had been interested in long before he started to analyze ambiguous pictures. It is evident in one of his most famous quotes from *Tractatus* – “What can be shown *cannot* be said” (1990: 79). One way of interpreting the quote is to take it as stipulating that visual perception contains a non-linguistic surplus. What illusions (ambiguous illusions amongst them) show is that even if there are things you can only show, things which escape successful description, it doesn’t mean that these aspects of perception are pure. It may very well be the case that our conceptual capacities always play an important role in perception. What ambiguous pictures have in common is that they seem to show us the backstage of our perception because we can clearly see that there is some kind of decision-like process that underlies the seeing process. Wittgenstein calls this process a “change of aspect” (1980: 8) but he is clearly having difficulties with finding its exact nature. How is this process different from normal illusions and normal, veridical perception? Does it raise any new and important philosophical questions? What exactly happens when we switch from the duck to the rabbit?

My aim in this article is not historical. I do not want to provide an accurate interpretation of Wittgenstein but rather to pursue the above problem and formulate it in a precise manner. I also want to stress that although the problem itself lies between philosophy of perception and philosophy of language, my paper leans heavily towards the latter. Let me relieve the tension – I will not solve the duck/rabbit problem. I will not solve it because, if I am right, it cannot be answered by philosophy of language. But in order for the question to be answered by anyone it has to be asked in a precise manner and this is something,

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<sup>1</sup> Originally introduced in Jastrow (1900).

I believe, I can do. My aim is thus strictly conceptual – I want to create a framework which will enable us to talk precisely about perception and restate the duck/rabbit problem in a solvable manner.

Let me start by identifying two important reasons why talking about perception often leads us astray. The first can be most easily introduced by a simple dialog:

A: Yesterday I saw a red cup in the kitchen.

B: You couldn't have seen a red cup. I don't have one.

A: I think I know better what I saw!

It's futile to ask who's right here. A and B clearly use the word "to see" with different meaning. Let's call A's meaning "the subjective meaning" and B's meaning "the objective meaning". As we will see it is important not to conflate these two meanings because they express two aspects of perception which are irreducible to each other.<sup>2</sup> The second problem can be introduced via the following reasoning:

1. A dog sees a postman.
2. The postman is the best chess player in the city
3. Thus, the dog sees the best chess player in the city.

The argument is formally valid, but I doubt you accepted (3) without hesitation. Why is that? It seems that (3) presupposes or at least suggests that the dog *knows that the postman is the best chess player in the city* which is rather absurd. Dogs just can't have such sophisticated beliefs. But the moment you realize this you also realize that accepting (1) is just as risky as accepting (3) because having beliefs about postmen is probably no less cognitively advanced as having beliefs about chess players. Does it mean that the dog didn't see the postman after all? It may seem that the natural way out of this puzzle is to say that the dog didn't see the postman *as a postman*. But what does it actually mean?

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<sup>2</sup> Valberg (1992) calls this split "the puzzle of experience".

Is it equivalent to having beliefs about postmen or maybe having a concept of a postman? In fact – do we ever see postmen? Maybe the only thing you can really see is a collection of color patches and shapes. It is easy to get lost in these questions, so the second thing we have to be extremely careful about is letting beliefs and concepts enter the picture unnoticed.

As I said, I believe that a solution of these problems will most likely come to us from cognitive psychology, but it won't happen if we don't formulate the questions in understandable and unequivocal manner. To do that we have to create a conceptual framework powerful enough to express the different possibilities that are taken into account in philosophy of perception. As is evident from above considerations the framework has to enable us to clearly distinguish between subjective and objective meanings of “seeing” and clearly state which beliefs are to be attributed to the observer. I construe such a framework in section 2. Section 3 is devoted to some of its possible applications – the duck/rabbit case amongst them.

## 2. A conceptual framework.

Let's start with the difference between subjective and objective meaning. We shall focus on a simple model situation, where an observer O sees a particular object A at a particular time:<sup>3</sup>

(S) O sees A at  $t_1$

What do we mean when we interpret the word “sees” in the objective sense? I propose two conditions which have to be met if it is to be the case:

W1: There exists an object  $x$  O looks at (at  $t_1$ )

W2:  $x=A$

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<sup>3</sup> „A” is to be understood as a constant.

There are a few things we have to clarify here. First of all, we have to explain the term “looks at”. After all, substituting one common term for another doesn't help much. The term should be understood as follows:

An observer *O* looks at an object *x* iff the object *x* reflects light which affects the receptors of *O* in a proper way.

I guess that the expression “in a proper way” may raise some eyebrows, so let me clarify – it is intentionally unexplained, because the question of what really is “proper” is not one a philosopher can answer. It is an empirical question which, as far as I know, has already been quite exhaustively addressed.

Let me elaborate on why these conditions look this way. First of all, we couldn't settle for a rather intuitive condition of vicinity (*O sees A in an objective sense if A is in a vicinity of O*). It is quite obvious that the object which is to be seen has to interact with the observer and not just “be there”.<sup>4</sup> But the interaction itself also has to be rather specific. To start with, it has to be related to a given sense – if we want to differentiate between seeing and hearing, we probably won't be able to avoid talking about the eyes, and not the ears. So maybe we could settle with something like: *O sees A in the objective sense if A interacts with eyes of O*? But it is easy to notice that even this isn't enough. I could easily establish that a given object is cold by touching it with my eyes closed, but it is far from the interaction we were thinking of.<sup>5</sup> By talking of the proper way the receptors register the light not only do we give credit where it's due (that is to empirical science) but we also leave the possibility of talking about observers with photo receptors quite different than eyes (for example robots or people using technologies like Brainport – see Bach-y-Rita et al. 2003).

Note that even with these clarifications a conjunction of W1 and W2 does not give a definition of “seeing objectively”. It is meant only to be a necessary condition but it is enough to differentiate it from “seeing in a

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<sup>4</sup> See [Grice \(1961: 141\)](#) for some rather convincing examples

<sup>5</sup> A similar argument can be found in Pitcher (1971).

subjective sense” which we are now going to discuss.

Let’s get back to our situation S. What is meant by saying that O sees A at  $t_1$  in a subjective sense? I propose to explicate it with the following conditions:

W3: O is in an unconscious visual state S (at  $t_1$ )

W4: S is a typical unconscious state for O and A

W5: O is in a conscious visual state V (at  $t_1$ )

W6: V is a typical conscious state for O and S

First of all, note that I avoided the most natural way of expressing the subjective meaning of “seeing” which is “having an impression of A”. The reason I don’t want to talk about impressions is that they create intensional context and that their identity conditions are rather mysterious. Consider “an impression of a postman”. Is it the same impression as “the impression of a man dressed as a postman”? Maybe, technically speaking, there is no such thing as an “impression of a postman” and we should talk only of simple impressions like color or shape impressions? But then, consider “an impression of white” and “an impression of the color of my shirt”. Granted that my shirt is white, do you have an impression of the color of my shirt when you look at the margin of this page? Could you have it without ever seeing my shirt? I don’t have a good solution to these puzzles, and that is why I prefer to use W3-W6 instead of the notion of “impression”. Let me elaborate on these conditions so we can learn that they may be treated as an extensional explication of the problematic notion of “impression”.

First of all, we have to discern between unconscious and conscious stages of perception. After all, it is pretty well established that the three dimensional picture we experience starts as a two-dimensional pattern. The contours of objects I discern in a given scene have to be detected by the edge detection cells, there is a blind spot in my vision which is filled by my brain and so on. You may be curious about the specifics of this stage – is it something that happens in the retina or does it perhaps span

to some parts of the visual cortex? We don't have to go into these details. The only point is not to conflate conscious with unconscious stages.

Note that neither W3 nor W5 says anything specific about the respective states. The only thing said is that the observer is in some internal visual states. We learn more about these states in W4 and W5. The point of these conditions is that they inform us that O has a disposition to be in a given state. The key expression “being a typical (un)conscious state for...” can be defined as follows:

A visual state X is a typical unconscious state for an observer Y and an object Z iff there exists a moment  $t_n$  when Y looked at Z and every time Y looks at Z she is in an unconscious visual state X.<sup>6</sup>

A visual state X is a typical conscious state for an observer Y and an unconscious visual state Z iff there exists a moment  $t_n$  when Y was in Z and every time Y is in Z she is in a conscious visual state X.

Note that what W3-W6 boil down to is much more intuitive than it may seem at first glance. What these conditions try to express is that when we describe someone as seeing an object in a subjective sense, what we really mean is that she is in some (unknown to us) internal state which she normally is in when she sees this object in an objective sense. We do not know the state, because it does not manifest itself to us in any way in normal acts of communication.<sup>7</sup> The states are thus relativized to the observer – the state which is typical for observer O when she looks at A may be quite different from the state you are in when you look at A.

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<sup>6</sup> The reason this definition looks like that is that we have to block a well known counterintuitive consequence of defining a dispositional notion via a material implication. If we decided to use just the second conjunct, then considering that there are things the observer has never seen and will never see – a dragon for example – every state would have been “typical” for a dragon. The same *mutatis mutandis* can be said about the second definition. Also, the term “looks at” is to be understood in the technical sense defined earlier.

<sup>7</sup> They can be registered in various nonstandard ways – for example we can use PET scans to try to correlate them with different stimuli.

It is, to use the famous Wittgensteinian expression, a beetle in a box (1958: 100). Similarly to conditions W1 and W2, conditions W3-W6 should be understood as necessary conditions.

This way we can precisely differentiate between objective and subjective meaning of “seeing”. Subjective seeing means that conditions W5-W6 (but not necessarily W1-W4) hold. Objective seeing means that conditions W1-W4 (but not necessarily W5-W6) hold.<sup>8</sup>

Once we have conditions W1-W6, what is left is to add beliefs to the mix. In order to do that we have to differentiate between two senses of “having a belief” - verbal and non-verbal (indicated by an asterisk).

O has a belief that  $p$  iff O has the disposition to assert a sentence “ $p$ ”.

O has a belief\* that  $p$  iff O’s behavior can be best explained by attribution of a belief, that  $p$ .

The sense of having a belief\* is very similar to Dennett’s “intentional stance” (1989: 17). Although we can ascribe having a certain belief to anything, only sometimes does this ascription really help us with our predictions. This definition explicates the common expression – “it behaves as if it believed that  $p$ ”.

The good news is that introducing extra “belief conditions” will now be extremely easy, because we will be using a simple sentence form “O believes that  $W_n$ ” or “O believes\* that  $W_n$ ”.<sup>9</sup> The bad news is that this triples the number of conditions. Fortunately, there is no point in talking of certain combinations. For example, there is nothing like believing\* that W3 – the whole nature of unconscious states boils down to the fact that we do not register them (without advanced equipment) and hence we never act as if we believed that we were in those unconscious states.

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<sup>8</sup> It may seem that the objective sense also demands W5-W6, but the blind seeing phenomenon (mentioned in section 3) and the case described in Gazzaniga et al. (1962) show that they are not necessary.

<sup>9</sup> To shorten the number of conditions I sometimes use a conjunction: O believes that  $W_m$  &  $W_n$ .

Similarly, although we could speak about “believing that W3”, it is, in fact, completely irrelevant to perception.<sup>10</sup> The belief conditions we will be using in the next section are:<sup>11</sup>

W7: O believes that W1 & W2

W8: O believes\* that W1 & W2

W9: O believes that W5

W10: O believes that W6

W11: O believes\* that W5 & W6

After everything we said up to this point, it should be easy to understand the conditions W7-11. W7 means that the observer has the disposition to affirm that she looks at A. W8 means that she behaves as if she looked at A. W9 means that O has a disposition to affirm that she is in some specific visual state, W10 means that she believes that she recognized the state as being typical (in a defined sense). W11 may not be obvious at first but it should be easier to grasp once we realize that it is supposed to capture the common expression “reacts as if she had an impression...” as opposed to “reacts as if she saw...”. It is well suited to express (among other cases) our purely aesthetic or emotional judgments. For example, when I look at a cinema screen and see a fast approaching train, I might react to it because I like steam trains and thus I do react as if I had an impression of a train but it does not mean that I reacted as if I had seen a fast approaching train.

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<sup>10</sup> It is only possible because we can have third person knowledge about our own states.

<sup>11</sup> I do not have the space here to elaborate on the reasons some of the possibilities are missing from the list.

### 3. Framework applications

Let's list all conditions in one place, because we shall be addressing them quite often.

- W1:. There exists an object x O looks at (at  $t_1$ )
- W2:  $x=A$
- W3: O is in an unconscious visual state S (at  $t_1$ )
- W4: S is typical for O and A.
- W5: O is in a visual state V (at  $t_1$ )
- W6: V is typical for O and S.
- W7: O believes that W1 & W2
- W8: O believes\* that W1 & W2
- W9: O believes that W5
- W10: O believes that W6
- W11: O believes\* that W5 & W6

Various combinations of conditions W1-W11 constitute the framework we were looking for. To understand how it works consider two cases:

**Case 1:** W1-W11 obtain.

The observer looks at A, has proper visual states (conscious and unconscious), reacts accordingly (as if she saw A and as if she had the impression of A) and believes that she sees A and has a visual state she typically has when she looks at A. We can classify this case as a **model veridical perception**.

**Case 2:** Only W1-W4 and W8 obtain.

The observer looks at A and reacts as if she saw this object, but there is no conscious experience of seeing nor any belief about seeing the object. This case corresponds to the phenomenon of **blindsight**.

Now, if you treat both cases as boundaries, what you get is a set of possible cases in-between. Using these combinations you can express various philosophical positions or describe new interesting cases – both real and imaginary. For example, if you take Case 1 and subtract W1 and W2, you end up with **hallucination** (let's call it Case 3).<sup>12</sup> If you take Case 2 and add condition W7, you end up with **Block's super-blindsight**<sup>13</sup> (let's call it Case 4): the observer does not have the conscious experience but not only does she react as if she saw the object, she also learns to give proper verbal reports of the object. It is a good place to remind us that the framework I present here is purely conceptual. It is a set of linguistic tools to speak about perception, not a theory of perception. The latter should be provided by philosophy of mind or psychology. Because of that we should not worry if the idea Block suggested is empirically possible or not. The only thing we are interested in is that it is coherent and can be expressed via the combination of W1-W11. Generally speaking there are two ways you can approach the framework. You can analyze different philosophical positions and try to express them within it or simply combine the conditions and look for interesting cases. I discuss it in more detail in Grabarczyk (forthcoming).

Before we can see how this framework can help us with Wittgenstein's illusions we have to see how it works for some of the more typical cases of illusion. Let's use a following convention: we can transform any condition W<sub>n</sub> into an alternative condition W<sub>n'</sub>, W<sub>n''</sub> and so on. We do that by replacing every instance of A with A' (or A'') where A' (A'') is a name of a different object than A (or A and A'). Subsequently we replace every instance of S and V with S' and V' (or S'' and V''), where S' and V' are names of states different than S and V (or S, S' and V, V' accordingly).

Having established that, let us try to analyze the phenomenon of

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<sup>12</sup> Hallucination would have been described differently if we wanted to embrace disjunctivism. I use this framework to express different positions in philosophy of mind in Grabarczyk (forthcoming).

<sup>13</sup> Discussed in Block (1995).

optical illusion. As we said earlier, philosophers often describe illusions as if they were erroneous interpretations or inferences.<sup>14</sup> If we wanted to take their words for granted we would have to interpret the phenomenon of illusion in a following way:

**Case 5:** W1-W6 obtain but instead of W7-W11, W7'-W11' obtain.

What is meant by this is that the observer O looks at A and has all the proper visual states (unconscious and conscious) but, for some reason has a wrong set of beliefs (both verbal and non-verbal). At first it may seem to fit the descriptions cited above, because it is natural to connect the notions of inference or interpretation with beliefs. Even if we accept that the act of interpretation or even an act of inference can start with something different than a proposition, it seems obvious that it leads to a proposition that is held by the interpreter. But upon further inspection Case 5 seems to be more fitting for a description of **delusion** than illusion. Fortunately we have at least two different possibilities of describing illusion using conditions W1-W11.

**Case 6:** W1, W2', W3, W4, W4', W5, W6, W6', W7, W8, W9, W10, W11 obtain.

**Case 7:** W1, W2', W3', W4, W4', W5, W6, W6', W7, W8, W9, W10, W11 obtain.

In Case 6 the observer looks at something different than the object A but, for some reason this different object produces in O the unconscious state S (W3) which is the state O is disposed to be in when she sees A (W4). Because of this O is in a wrong conscious state V (W5). It is wrong for her because she clearly has appropriate dispositions (W4, W4', W6, W6') – O was perfectly capable of having a veridical perception if the error hadn't happened. We have to assume that she has all of these dispositions because this enables us to differentiate between her having

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<sup>14</sup> A notable example of this is Russell (1948: 167).

an illusion and her not being able to discern between A and A'. Let's call this type of illusion **Lower level illusion**.

Let's now turn to Case 7. The only important difference here is that the object A' O looks at produces the right unconscious state S', but for some reason it is transformed to a wrong conscious state V. Let's call this type of illusion **Higher level illusion**.

It is higher level illusions which invite terms like "inference" or "interpretation" into the visual discourse. And, as Wittgenstein (1980: 3) points out, it is much more problematic than we may initially expect. There is just no way for us to use these terms in their normal meaning. Seeing is immediate and quick, while interpretation or inference is a process which takes much more time. Postulating unconscious inferences or interpretations also appears to be rather counterintuitive, but it seems inevitable if we stick to these terms in this context. Fortunately, as conditions W1-W11 show, we can avoid talking about inferences and interpretations altogether and still differentiate between veridical perception and different types of illusion. You might object that it is a cheap win, because we simply dodged the problem – conditions W1-W11 do not tell us anything about the nature of the transition between unconscious and conscious states (maybe it is an act of interpretation after all). But the point is that it is an empirical question and as such shouldn't be pre-conceived by the definition of illusion. The framework I am proposing gives us an opportunity to be neutral in this respect.

Unfortunately, as Wittgenstein anticipated, the duck/rabbit (and other, similar examples) introduce their own problems and lead to a unique form of skepticism. With conditions W1-W11 we are in position to show exactly why it is so. One last time, let's start with a set of two more familiar cases.

**Case 8:** W1, W2', W3, W4, W5, W6, W6', W7', W8', W9, W10, W11 obtain.

**Case 9:** W1, W2', W3', W4', W5, W6, W6', W7', W8', W9, W10, W11 obtain.

What Cases 8 and 9 represent are two types of **conscious illusion** (lower and higher level). In Case 8 the observer looks at the object A' (W1 and W2') and it produces in her the subconscious state S (W3) which she is normally disposed to be in when she looks at A (W4). Because of this she is in a state V (W5) which she should be in if the object is A. But, contrary to this, she believes that what she looks at is actually A' (W7'). She acts as if she looked at A' (W8') although she believes that she is in a visual state V (W9) and that it is something she normally is in when she looks at A (W10) and cannot help but have associations and aesthetical judgments about A (W11). Case 9 is analogous, the only difference being that the error enters at a later stage (at the stage of W5). Let me show it on a concrete example. Consider a rather typical case of looking at a stick in the water. You see it as if it was bent (W3-W6) and know that you see it as if it was bent (W9,W10). If you have any associations, let's say that you associate it with a letter of an alphabet, you will associate the stick with the letter "V" rather than "I" (W11). Furthermore, you can differentiate between straight and bent sticks (W6,W6'). But you realize that the stick is straight (W7') and you act as if it was straight (W8') – for example, if you were to touch its submerged end, you would probably know where to put the finger.

The most striking thing conscious illusions teach us is that not only do we sometimes see things differently from what we believe them to be, but also that we couldn't see them veridically even if we tried. Exposing the illusion does not break the spell. Consider the Ponzo illusion. Even if you use a ruler and see for yourself that the lines have the same length you cannot stop seeing one of them as if it was shorter. It leads to a conclusion that perception is somehow immune to belief. Let's call it *a rule of belief independence*. Note that this rule is a very important tool against skepticism. Beliefs are somewhat arbitrary – they probably depend on the language we use, the culture we live in, and some of our idiosyncrasies. If perception was dependent on them, we wouldn't have been able to position it as epistemically basic or pure as we often wanted to do. This intuition is quite easily recognizable in history of philosophy, from Locke's simple/complex ideas division to the ideal of observational

sentences. It has been attacked and pronounced dead several times, but it still returns in different forms, being very attractive for the non-skeptic.

And this is the main reason why the duck/rabbit example is so special. Contrary to other conscious illusions, it seems to debunk the rule of belief independence. The distinctive aspect of the duck/rabbit picture is our ability to voluntarily switch between two ways we can see it – once as a picture of a rabbit, once as a picture of a duck. If this switch is, as we feel, something that we actually do, and not just something that randomly happens to us, then a question arises: how exactly do we do it? Note that there are not that many options we can choose from. As should now be obvious from earlier considerations, we can divide conditions W1-W11 into three groups. The objective part (W1-W2), the subjective part (W3-W6) and the belief part (W7-W11). We do not have the ability to directly induce visual states (even the conscious states).

I can imagine a horse, but I cannot subjectively see the horse, just because I want to see it. Therefore we are not able to directly manipulate with W3-W6. So, if the switch changes them, it can only happen indirectly, as a result of voluntary change of something else. But then, if we decide that this change is the result of the voluntary change in the belief part (any of the conditions W7-W11), we negate the rule of belief independence. Needless to say, it is everything that the skeptic wanted. If a change of beliefs can lead to a change in our visual states, then perhaps we could do the same trick in other, seemingly veridical cases? Maybe everything is an ambiguous illusion waiting to be discovered?<sup>15</sup>

Fortunately, there are at least two ways to describe the duck/rabbit scenario without giving the skeptic the upper hand. Note that because of the ambiguous nature of the duck/rabbit illusion we have to present the cases as disjunctions.

**Case 10:** W1, W2, W3, W4, W5, W6, W6', W6'', W7, W8, W9',  
W10', W11' **or**  
W1, W2, W3, W4, W5, W6, W6', W6'', W7, W8, W9'',  
W10'', W11''

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<sup>15</sup> Something along these lines is suggested in Strawson (1974: 58).

Let's explain the idea behind Case 10. The observer looks at the picture of the duck/rabbit and has visual states which she normally has when she looks at the picture of the duck/rabbit. Apart from the disposition to see the duck/rabbit picture she also has the disposition to see pictures of ducks (W6') and pictures of rabbits (W6''). She believes that she looks at the picture of duck/rabbit and acts accordingly (W7, W8). But (and here comes the interesting part) she somehow manages to switch between beliefs that what she experiences is the rabbit visual state (W9', W10') and the duck visual state (W9'', W10''). This switch does not result in producing the corresponding visual states, but it produces in her a non-verbal belief W11' (or W11'' accordingly). It is the difference between these two states that gives the distinct feeling of aspect change. What changes is our attitude to what we see, our associations (of something being similar to ducks or rabbits), and our aesthetic feelings towards it (we may like rabbits but not ducks).<sup>16</sup> Case 10 can be understood as an explication of a common expression "she convinced herself that she sees...".

But there is one more way to preserve the rule of belief independence. Remember that our aim, if we want to block the skeptical threat is to avoid suggesting that a change in beliefs results in a change in visual states. We achieved it in Case 10, because we suggested that the change happens only in beliefs (verbal and non-verbal). But you may object that it is not compatible with what we really experience, because we in fact do experience some change in visual state when we switch from the duck to the rabbit. The solution is now evident. If any of the subjective conditions are to be changed and the rule of belief independence is to be preserved, the only place the switch can happen are the objective conditions W1-W2. Let's show this case and explain it in some detail.

**Case 11:** W1, W2', W3', W4', W5', W6, W6', W6'', W7, W8, W9', W10', W11' **or**  
W1, W2'', W3'', W4'', W5'', W6, W6', W6'', W7, W8, W9'', W10'', W11''

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<sup>16</sup> Or, as Schroeder (2010: 365) **says**, she may feel that the beak is simply too long.

What is meant here is that the observer, in fact, changes the object she is looking at. The rest of the conditions are simply the result of that. It is worth to mention that we assume that in order to be able to make the switch the observer has to have the disposition to be in visual states induced by duck/rabbit pictures, duck pictures and rabbit pictures ( $W_6, W_6', W_6''$ ) and that even though the switch is quite convincing, she still believes that what she looks at is a duck/rabbit picture although in fact she is looking at something else. How can it be possible? After all the duck/rabbit picture does not change! One possible explanation is that in order to change the visual state, the observer inadvertently looks at different parts of the picture.<sup>17</sup> To see the duck she has to focus on the left part, to see the rabbit she has to focus on the right part. If we assume that the difference in focus is radical, then we could treat the two distinct parts of the picture as different objects the observer looks at. The idea that the switch of the aspect boils down to looking at different parts of the picture has been suggested and tested by psychologists, but the results are unfortunately mixed (see. Wimmer and Doherty 2007).

There are no fundamental reasons, however, to believe that the hypothesis will not be conclusively tested in the future. The important fact is that we are able to formulate the problem in a perfectly solvable way.

#### **4. Summary**

As we saw, talking about perception often leads to some confusion and creates paradoxes. The main culprits of these confusions are: conflating two different notions of the predicate “to see” (subjective and objective) and the uncertainty as to which beliefs (if any) are ascribed to the observer whenever she decides that she sees a given object. My aim was to create a precise and unequivocal conceptual framework capable of

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<sup>17</sup> Some readers may be alarmed by the fact that parts of objects are now treated as new objects. Are we entitled to change the ontology like that? I analyze the relation between perception and ontology in Grabarczyk (2013).

expressing problems and solutions connected to the phenomenon of visual perception. The framework consists of eleven conditions, combinations of which give us different descriptions of acts of perception (veridical and non-veridical). Using the framework we were able to reconstruct the reasons why the duck/rabbit case can be thought of as leading to a specific type of skepticism and show how we could avoid the skeptical conclusions. Along the way, we replaced some of the unclear or problematic common notions connected with perception by their explications: “to look at”, “to have an impression of”, “to behave as if one believed that...”, “to react as if one had an impression of..”, “to convince oneself that what one sees is...”. If the proposed interpretation of the duck/rabbit case is right, then whether it poses a skeptical threat Wittgenstein feared, remains an open question. But it is now a question to which further empirical studies can give a perfectly adequate answer.

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