

Shadows: A Phenomenological Analysis

Carlos A. Morujão

Universidade Católica Portuguesa

cmorujao@fch.lisboa.ucp.pt



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Abstract

Shadows are intriguing phenomena. They do not have mass or energy. So, they are unable to have some basic characteristics of the objects of which they are shadows: they cannot move by themselves and they cannot experience the same kind of changes. At first sight, any theory of perception can skip this optical phenomenon or look at it only as a side-effect. Actually, in order to be seen objects must be illuminated and one of the consequences of this is that they project a shadow over the surrounding space. Is that all? In this paper I will argue that, from a phenomenological point of view (or at least from a Husserlian oriented phenomenology), shadows, with their specific hyletic data, must be considered as an element of the process of constitution of spatial-temporal objectivities. In other words, shadows no less than other predicates, like extension or hardness, although in a different manner, belong to the *a priori* structure of those objectivities. This means that their ontological status is quite different from that of fictitious objects or hallucinations. To show this I will draw mainly in Husserl's Lesson *Thing and Space*, from 1907, and other unpublished texts during Husserl's lifetime, like the second volume of the *Ideas* and the Lesson of 1925 on *Psychological Phenomenology*.

Keywords: shadows, perception, phenomenology, Husserl, constitution.

Up to now, shadows have not attracted much attention on the part of phenomenologists. Phenomenology deals much more easily with perceptions, illusions, remembrances, or fantasies. Phenomenologists that are used to deal with psychiatric diseases sometimes address hallucinations and other pathological behaviors of the same kind, where shadows are occasionally taken for real persons or animals. But the phenomenon of shadow has so far occupied

the backstage of analysis. It is a little strange that things have happened that way. One of the accepted translations of the German word *Abschattung* is adumbration. The Latin word *umbra*, from which adumbration comes, means precisely “shadow”. Of course, neither from the noetic nor from the noematic side may an *Abschattung* be compared to a shadow¹, even if we must reckon that a shadow is, simultaneously, something dependent on the thing intended and its external horizon, of the intending subject, and on how they both stand regarding the source of light. But here some difficulties arise.

1. Strictly speaking, a shadow is not something that belongs to an object. It is either the form of the object projected over the surrounding space (or sometimes over a screen) due to the place from which light comes from, or the form of a second object projected over the first, when the second object interposes between the first and the light-source.
2. The intending subject may project his own shadow over the intended object and in this circumstance be the cause of the adumbration of the noema.

These two difficulties – regarding what I dare to call the indeterminacy of the ontological status of shadows – seem to mean that problems regarding shadows have after all an easy solution. A shadow is so to speak a side-effect of the horizontal character of our worldly experience. Nevertheless, horizontal intentionality functions differently here from other perceptual experiences. In ordinary experiences, horizontal intentionality entails the fact that in every perceptual act I experience the absent profiles or adumbrations of the thing intended, although I can only see the present profile. In the case of shadows two different things happens: we “abstract” from the shadow (i.e. we don’t explicitly take notice of it) when we try to figure out the material characteristics of the perceived object – like shape or color – and simultaneously acknowledge its existence as inherent to the perception of a physical object under certain light conditions.

¹ Husserl in § 28 of *Phenomenological Psychology* (1968: 160) says that adumbrations are not silhouettes, i.e. profiles (*Schattenrisse*) in the usual meaning of the word. Silhouettes are spatial objects, subjected to the same adumbration process as other special objects. Of course, what I claim in this paper is that shadows are neither adumbrations – although, like adumbrations, they depend on the point of view of the perceiver – nor silhouettes.

Nevertheless, even if we must acknowledge that without an horizon there would not be shadows at all, moreover, that without the necessary location of every intending subject in a spatial “here” (and the corresponding location of the intended object in a spatial “there”), there would be no shadows, the problem is much more complicated as I intend to show in this paper. For the moment, three things at least can be said about shadows. In the first place, that they are perceived; and perception is the presentation of something “in person”, not a representation, like remembrance or fantasy; secondly, that shadows are different from adumbrations, although they can be part of the reason why a certain thing adumbrates itself when perceived from a certain perspective; in the third place, that shadows are indubitably phenomena, i.e. they are something that appears to consciousness, but hardly can be called objects, at least in the sense that we call “object” any space-temporal thing².

Adumbrations are not a hindrance to knowledge, at least as long as certain variation limits are not surpassed (Husserl, 1973: 128). This may happen when I look at an object from a distance too long to allow me to figure out its shape or color. Of course, it all depends on what my interests are directed to; a synthesis of a set of appearances may be enough to grasp the characteristics I am interested in, but not enough to grasp a different characteristic distinct from the former. It can also happen that some differences between appearances that first remained unnoticed become later of special importance to the fulfillment of an intention, due to a change in the interest. In some cases, adumbrations caused by shadows may be useful. When our interest is directed to such characteristics of the thing intended like the material of which it is made, or the properties of its surfaces (for instance, if they are more or less rough or scratchy), the contrast between light and shadow may be of some help.

But that’s not all; shadows can have other amazing characteristics. Experiments have shown that when the shadow of a sphere is projected against a screen, the shadow is not seen turning around itself when the sphere does

² Of course, in a wider sense of the word “object”, that is very common in Husserl’s writings, meaning anything that can be thought of without contradiction, – such as a mathematical concept or a moral value – shadows could also be called objects. As I will stress later, the fact that shadows have a relational character, since they have no independent existence from the relation between an object and a light source, means that they cannot be called strictly speaking “properties” of an object.

(Sorenson, 2006: 346). Now, if the sphere and its shadow may have opposite properties, why not ask the following question: what happens to the shadow when the sphere is not rotating? Or to put it more clearly: since the shadow of a rotating sphere is indiscernible from the shadow of an immobile sphere, what conclusions should we draw regarding the relation between the properties of a thing and its shadow?

Other difficulties arise. Husserl once talked about the difficulty in synthesizing all the hyletic data of an object (Husserl, 1968: 154). We could expect some congruence between optical sensations and tactile sensations, for instance, but as we know there is none. The tactile experience of a sphere is different from the tactile experience of a cube, but they can have the same color. From a tactile experience, I can deduce some aspects of the visual experience of that same thing, namely, how it will look like, i.e. its form, but not all the visual aspects. With shadows things are even more awkward: two different colored spheres can project the same grayish shadow.

Our previous example of the shadow of a rotating sphere could legitimate the definition of shadows as dematerialized forms. Dematerialized spheres cannot move, since movement is a characteristic of material bodies, or one of its modes, to take traditional philosophical vocabulary. However, most of the times, the shadows move with their objects; anyone that is making a journey by car or by train can easily see the shadow of the car or the train over the surrounding landscape, when light conditions allow it. Later we will also see that, in certain situations, shadows – or more exactly, the contrast between light and shadow – can show some specific material qualities of the objects.

Another interesting aspect is the fact that not all material objects that interpose between a first object and the light source can project a shadow. Molecules of oxygen or hydrogen, or small grains of dust (at least up to a certain quantity), present in the air that light passes through, don't project any kind of shadow. Aristotle called the air *diaphanes*, diaphanous milieu. Ignoring molecules and without taking dust into account, he nevertheless highlighted a fundamental property of light, namely, the fact that it spreads uniformly through the surrounding space.

Furthermore, shadows play an important role in the perception of objects endowed with aesthetic value. That is the case of three-dimensional objects, like statues and architecture. To a certain extent, they belong to the same world

where we find objects of everyday use or technical devices; they share with them some material and spatial characteristics, and they reflect light and project their shadows just the same way. Architects in particular took advantages of the knowledge of the properties of light to evince the aesthetic qualities of buildings. But shadows also play a special role in drawing and painting. Here they almost always have the role of simulating three-dimensional objects in a two-dimensional surface. However, their aim is not to replace normal perception or to function as a kind of substitute of it. As Merleau-Ponty once said (1948: 25), paintings don't imitate the real world, but paint it as if it were beginning to exist. Shadows are a part of this process.

I think we have already gathered several reasons to make shadows deserve being analyzed.

1. Multiple uses of the word “shadow”

The word “Shadow” has multiple uses, some of them proper, others metaphorical. We speak of a “shadow of a doubt” or of the “shadow of a smile”, most of the times in a negative sentence. We mean that, in certain circumstances, such things as doubts or smiles don't really exist, or can hardly be noticed. When a statement convinces me of its truth, when I have no reasons to doubt that it is true, I can say that I don't even have the shadow of a doubt. Something very similar happens when we speak of the shadow of a smile; this means that we guess that someone wanted to smile but didn't do it, or perhaps just smiled a little out of fear to show his own feelings. Anyway, the concept of shadow seems to point out to a certain absence³. That is exactly what happens, at least according to the mainstream interpretations, in the more

³ Husserl uses the expression “realm of shadows” when he speaks of fantasy images and distinguishes these last images from images in the proper meaning of the term due to the fact that the former need not be compared to the actual world, as the latter do. Here too we can find a relation between shadows and a certain kind of absence: in phantasy image reality is absent, phantasy is not mixed with it but forms a realm of its own. In the case of images there are two perceptual apprehensions, eventually conflicting with each other in those cases in which we say that the image does not fit to the reality. In contrast to perceptual reality, phantasy is composed of shadow images (Husserl, 1980: 181).

proper use of the concept (namely, in the optical realm), when the shadow is defined as an absence of light⁴. One of the things I intend to show in this paper is that it is possible to offer, in a theory of perception, a “positive” definition of it⁵. Of course, phenomenology doesn’t have any kind of optical theory to offer, but it can offer a philosophical explanation of the way we experience optical phenomena.

The relation between those phenomena like smiling or doubting and what happens with optical phenomena is clear in most of the cases. But their exact connection with what goes on in normal perceptions is not so clear. Because when an object projects the shadow of its form over the surface of another object, there is something to see; shadows in this situation can be seen – even if most of the times they are not taken into account –, otherwise they would be nothing at all. In this situation, what in one of the objects can be considered a negative phenomenon – it is less illuminated than it would otherwise be if there was not a second object that projects its shadow over it – must, regarding this second object, be considered a positive property. In other situations, when, in normal perceptual conditions, someone says that he sees no shadows he may only mean that, as long as the thing is seen from the place he occupies in space, the thing projects no shadow over its surrounding. As we know, in order to see shadows, we must not look in the direction of the light source. Shadows are never that part of an object that I cannot see for the moment, like for instance the back of a house hidden by its front, or the inside of an orange that has not yet been peeled⁶.

⁴ Actually, due to the properties of the light waves, light is not entirely absent in shadowed areas. Behind a tree that hides us the sun, for instance, we can still see the surrounding space, because the sun rays contour the extremities of the tree.

⁵ In some metaphorical uses of “shadow” we can also find a positive meaning of the metaphor. Like the projection of a shadow over the surrounding space can have a protective effect, as e.g. the shadow of a tree in a hot summer day, similarly “to be under the shadow” of someone or something often has a positive meaning.

⁶ Husserl labels *Auffassungskomponente* (i.e. components of the interpretation of the meaning of the thing perceived) those elements in a thing that point to the not yet or no more perceived parts of it (Husserl, 1973: 56). I don’t think that this concept is very helpful to understand what happens in the case of shadows. I will try to show why above.

It seems then that if we take into account the ideal circumstances⁷ in which a thing should be given to perception – i.e., when it could be given just like it is, the intention directed to it founding its appropriate fulfillment –, shadows don't belong to things. Nevertheless, they play a specific role in perception. Looking to Figure 1,

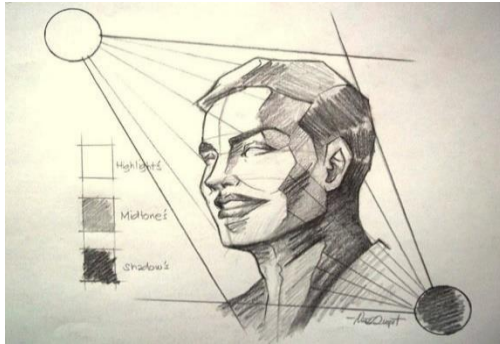


Figure 1

we conclude that shadows highlight the three-dimensionality of objects. Of course, since we are looking to a drawing, shadows and the distinction between different shadow zones – i.e. the different ways light is spread⁸ across the drawn human face – are the only process the designer has at his disposal to simulate the three-dimensionality. But I claim

that the same holds in the case of perception of real three-dimensional persons or objects: the abovementioned differences concur to the process of constitution of a three-dimensional object⁹. We can only suppose that light spreads with the

⁷ By “ideal circumstances” I mean what Husserl calls (1973, 127) *maximale Gegebenheit*. I will come to this issue above.

⁸ The fact that light (or brightness) as well as shadow spread along the surface of an object makes them different not only from other properties like weight or smoothness but also from color, which also spreads along a surface. Regarding color, the important difference lies in the fact that the lightened or shadowed parts of a surface are entirely dependent on the movement or stillness of the light source and of the perceiving subject. That's why light and shadow may be called *anhängende Eigenschaften* (appended properties). A paper from Filip Mattens (2008: 118) called my attention to this important Husserlian concept (Husserl, 1973: 67). I will come back to this issue in my Final Remarks.

⁹ I still have a further claim, but it goes beyond the limits of this paper. I claim that essences (*eide*) don't correspond to a vision from nowhere; on the contrary, Husserl's notion of essence (*eidōs*) includes a necessary reference to all real and possible perspectives of any intended object. That's why, in *Ideas I*, Husserl made a sharp distinction between geometrical and phenomenological essences and denied the possibility of a kind of geometry of lived experience. The objectivities that the phenomenologist tries to grasp are given in concrete and observable acts and based on

same brightness across the surface of a statue, for instance, when we imagine ourselves seeing it from nowhere.

That's why, to use an expression coined by Robert Sokolowski, we can say that shadows belong to the "noematic pattern" (Sokolowski, 1964: 155) of spatial-temporal objects. We would doubt of the existence of an object belonging to this "region" if someone had told us that he or she has seen one that, under a light source, didn't project a shadow over its surrounding space. For much the same reason, we doubt of the existence of vampires like Count Dracula, if, according to tradition, they are a kind of beings that don't have their own images projected by a mirror. As far as our present knowledge goes, it belongs to the "noematic pattern" of the type of things that have the property of occupying space the fact that their image can be projected by a mirror, as well as it belongs to the physical characteristics of a mirror the possibility of projecting the image of any kind of thing or object capable of standing in front of it. Likewise, a complete phenomenological analysis of a material thing, i.e. an analysis of the predicates that are proper to it, will show that it belongs to every material thing, besides such properties as extension or hardness – with its noetic counterparts in hyletic data like vision or tactile sensations –, the property of projecting a shadow¹⁰.

Now, our problem is: has Sokolowski's "noematic pattern" something to do with the above mentioned *Auffassungskomponente*? I claim they are closely connected as long as we mean ordinary thing-predicates or properties, but not when we mean shadows or, at least, not in the same fashion. Husserl says in the Lessons on *Psychological Phenomenology* that further intentional acts of the same object explicate the meaning intended in former ones (Husserl, 1968: 184). Going back to my previous example of the perception of a house,

human beings' lifeworld real experiences, even if in the process of variation, the phenomenologist may seek the help from imagination.

¹⁰ It seems to be a common property of light and shadow the fact that they are both projections. An opaque object like the Moon can project the Sun's light that illuminates it. That's the reason why we can perceive them, otherwise they would be invisible, even if some other senses, like touch, would give us notice that something "is there". Nevertheless, projected light, just like the shadow, are clearly distinct from such properties as color or shape. The fact that light and shadow can affect the way we pick up those other properties is a quite different issue.

we could say that the perception of the back explicates the full meaning of the act that presented me its front, because while perceiving the front I was actually intending the whole house. That is why the back can be labelled an *Auffassungskomponent*. He was already there for me to see and I could have seen it first if my perspective, i.e. my previous “here”, were different.

It is doubtful that shadows are there for me to see or measure in the same way that the ordinary thing-predicates, which Husserl calls *raumerfüllende Eigenschaften* (1973: 67), are. For someone in a certain “here”, shadows just don’t exist where another person, in another “here” (that for me is a “there”), can see them. Although the perceived qualities of an object always have a certain relation to our kinesthetic system, shadows have not the same kind of relation that other predicates have. In *Ideas II*, Husserl claimed:

The qualities of material things as *aestheta*, such as they present to me intuitively, prove to be dependent on my qualities, *the make-up of the experiencing subject*, and to be related to *my Body and my “normal sensibility”*. (Husserl, 1952: 56)

Differences are obvious, but by no means least important. I cannot cut across an extended body, but I can cut across the shadow of that body; I can make a tactile experience of an extended body, but I cannot touch a shadow (at most I can feel a lower air temperature when I put myself under the shadow of an extended body); and other similar differences that anyone can easily find for himself.

In § 44 of *Ideas I*, Husserl, without mentioning shadows, makes an important remark about “abnormal” ways of givenness that have a certain connection with our issue. In brief, Husserl argues that if we took from the thing that is being presented (namely through perception) the multiplicity of its appearances other than the normal ones, the fact that we are entitled to speak of a givenness wouldn’t mean anything at all (Husserl, 1950: 102). For a white surface to appear like a gray surface some “abnormal” condition must be present: namely, it must be dimmed by a shadow. If we follow Husserl’s thought in *Ideas I*, we should conclude that it belongs to the way things are given such “abnormalities” as the fact that the space behind a thing may appear surrounded by a halo of its own shadow, or that on some of its sides or on its

front is project the shadow of another thing. Shadows, so it seems, no less than light, play some role in the process of constitution of spatial-temporal objects. As Merleau-Ponty once stressed, shadows, like other optical phenomena, are not things, but play nonetheless an important role, since they set the limits to their possible “fields of variation” (Merleau-Ponty, 1960: 202).

However, in other places, Husserl seems to say something different from what he claimed in *Ideas I*. In *Thing and Space*, namely, he speaks about a “maximum of givenness” of a thing as an ideal that governs every intentional act and he elucidates what he means with the example of the perception of an hexaeder (Husserl, 1973: 127). Not only must the hexaeder be in front position regarding the intending subject but it must also be under good lightning conditions. A little further (1973: 132), while discussing the conditions of clarity¹¹ in the perceptual givenness of an object, Husserl numbers a series of physical circumstances that can hinder that clarity and among them he mentions again the poor lightning conditions. Given the fact that the “ideal circumstances” I mentioned above are not subjected to variations in degree – only the “abnormal circumstances” can vary according to their greater or lesser vicinity with the ideal ones –, and given also the fact that shadows can be counted as an abnormality, we must give a closer look to one of my claims in this paper: namely, the fact that shadows can be considered as a factor that we cannot put aside in the process of constitution of space-temporal objects.

In our lifeworld perceptual experience of things shadows play a role that is not very different from the role played by light and colors, i.e. normal perception in normal circumstances includes abnormalities, if by this last word we mean something that hinders a thing to appear like it is. That is the great lesson of the impressionist painters in the late XIXth century (Merleau-Ponty, 1948: 20-21). If the green leaves of a tree could be painted with small patches of red, for instance, it was because the relation of each single leaf with all the others, with the light of a bright summer day and with the human eye entailed the sensation of seeing a red color. Or, as Merleau-Ponty explained, to render

¹¹ Clarity is my translations of *Deutlichkeit*. Husserl dedicates the entire § 38 of *Thing and Space* (Husserl, 1973: 132-134) to a determination of the conditions of clarity in the givenness of a thing. There, Husserl also distinguishes *Klarheit* from *Deutlichkeit*. The distinction seems to be grounded on the fact that *Klarheit* has degrees; *Deutlichkeit* is only the highest degree of *Klarheit*.

the natural vibration of the grass seen at the open air under the light of a room where a painting with green grass will hang on a wall, the painter must mix the green with patches of red. A similar experience could be said to happen when we perceive real objects in the real world, in cases of contrast between light and shadow, or between colors of objects seen under a light source and seen under the projection of the shadow of another object.

2. Shadows do not adumbrate

We must give shadows the same kind of transcendence we give to perceived objects. Just like we, perceiving the latter, put them into the world, amid other objects of the same ontological kind, we have to put shadows in the world where we perceive them. However, shadows have a different status from other physical objects, as well as a different status from other kinds of transcendent “objects”, like moral values or mathematical concepts. To sum up, from what has been said so far, we can say that, albeit their transcendence, the possibility of being perceived seems to depend on three different factors:

1. The existence of physical objects, from which they are shadows, or whose own shadow they project over others.
2. The existence (at least in some cases) of a horizon in which those objects make their appearance.
3. The existence of an intending subject who sees the shadows or projects its own shadow over what he sees.

Regarding what I said in 1, we must now add that the dependence of the shadow from existing physical objects or persons is of a totally different kind from the dependence of certain physical characteristics, which, like heat, for instance, Husserl labelled “dependent determinations” (Husserl, 1973: 78). When a body has been uniformly heated, it is possible to feel the same heat in any of its parts, touching them with our hands. Of course, one can feel the heat just by approaching the body without touching it, but regarding its causes this whole phenomenon is independent of the subject who feels the heat. With shadows, it’s just the opposite. Since shadows do not keep constant their geometrical form like the objects of which they are shadows, it’s enough to get closer to an object or to go around it to see its shadow changing shape and

dimensions¹². In extreme cases a shadow can disappear altogether if someone changes the place from which he was until then looking at a certain object. All this means that shadows depend on a certain relation of the perceiving subject to the world and they change with changes in that relation in a way that is not exclusively dependent on the objects of which they are the shadows.

There are still other interesting differences when we compare shadows with the so-called “dependent determinations”. I can heat a body at leisure, at least up to the point it begins to melt, but I cannot move the shadow of a body without first moving the body. In the same way, a body, once disconnected from the source of heat, starts spontaneously to lose temperature, at a speed that depends on its own material constitution (that speed is not the same for different kinds of metals, for instance); a shadow cannot move spontaneously, it doesn’t accumulate any form of energy as well as it is deprived of any.

As is well known, Husserl explained in *Ideas I* that, owing to an essential law, every transcendent physical object adumbrates itself and that the kern of what is actually present is surrounded by something concomitantly given, even if in a vague and indeterminate way (Husserl, 1950: 100). We can easily reckon that, albeit the shadow’s physical nature, the distinction between a kern and the concomitantly given has no place here. Of course, someone could argue against this what we just said in the last paragraph: when we turn around a physical object, we can see modifications in the shape of the shadow, corresponding to our position regarding the source of light. But we are not experiencing new “profiles” of the same shadow as we experience new profiles of the same thing. “Normally” we don’t even look at the shadow, we are just experiencing new profiles of the thing perceived, eventually accompanied by the consciousness that each new profile of the same thing projects in the surrounding space a new shape of the thing’s own shadow¹³.

¹² A special field of geometry studies the way physical bodies project their shadows; it’s called projective geometry. One of the first mathematicians to dedicate himself to a thorough study of the geometrical laws of the projection of shadows was Johann Heinrich Lambert, a contemporary and correspondent of Kant.

¹³ We say that a shadow is the same as long as it is the shadow of the same object. I think it is the most appropriate way of putting things. If we imagine a source of light (for instance, the Sun) turning around the same object, from rise to dawn, the shadow will change in form and size, but it will always be the same. Of course, this is a special

There is another remarkable difference between a thing seen from a certain perspective, with its respective profile, and the shadow a thing projects when seen from that same perspective. A profile points out to other profiles. Even if we look to a thing immobile and we also stand immobile – not moving our head or our eyes –, the limits of that profile are never a well-defined line. The limits always point out to what lies beyond themselves and entail an expectation regarding what will be seen next if we change our perspective. As Aron Gurwitsch once remarked (1957: 174), the succession of the perceptual noemata is a never-ending process. Nothing similar happens with shadows. Shadows are always two-dimensional, and their limits can be outlined. Sometimes there are zones of penumbra, but most of the times what lies beyond shadow is light. In normal perception, shadows can change their form, they can move with the movement of an object, they can even become more or less intense depending of the intensity of the light source; but, just as they don't point out beyond themselves, they don't offer new profiles to the perceiving subject.

Perhaps Husserl's well-known statement that the process of variation of the intending subject's viewpoint may be carried out in imagination was also destined to answer similar difficulties. In fact, I can imagine myself turning around an object (or an object turning around its axe in front of me) disregarding all the surrounding objects and the place from which the light comes. Essential characteristics of the object, specifically its geometrical form, can then be grasped without the factual interference of others. Following the phenomenological reduction¹⁴, we may previously "suspend" those interferences. The identity of the object is only dependent of a single factor:

case since we can perceive the continuity of the changes. However, in cases where this continuity cannot be perceived, would the identity of the object, regardless the identity of the light source, be sufficient to warrant the identity of the shadow? I think this question has no meaning. The reason has to do with the ontological status of the shadow; it is not related to the object like color and other properties.

¹⁴ Husserl recalls the necessity of making the phenomenological reduction in order to carry out the analysis of perception in § 7 of *Thing and Space* (Husserl, 1973: 19-21). However, these interferences can be "bracketed" only as long as our main purpose is to grasp the object's invariant form. Our purpose now is quite different. That's why these interferences must be taken into account, all the more so that a lived experience corresponds to them.

following *Thing and Space*, we could label it, *okulomotorisch*, i. e., dependent on the movement of the eyes (Husserl, 1973: 226). This means the possibility of seeing in a succession (due to the impossibility of doing it simultaneously) different albeit congruent parts of the same object. Congruence is, from the noematic side, what guarantees the identity. Speaking about external perception, Husserl says:

To be sure, the appearing object is there, and that in every phase of the perception. But in the transition of phases into ever new and temporally separated phases no real moment can be identical, whereas the appearing object appears evidently as identically the same throughout all phases and appears in differing content. (Husserl, 1968: 172-173)

Does the same hold for shadows along the transition of phases in perception? Perhaps *prima facie* one should say that, since they depend on the perceiving subject's position and on the eventual movement of the light source, shadows vary in shape and size, they must be considered inessential to the identity of every noematic pole of the perceiving intention. However, so are colors (i.e. slightly differences in color don't hinder the identification process) and similar characteristics, although shadows, as we shall soon see, are ontologically distinct from them. Husserl, in *Thing and Space*, stresses the fact that data of different fields, for instance, visual and tactile, have no hyletic unity (Husserl, 1968: 173). And although Husserl does not mention shadows, he could have added that different hyletic data from the same visual field, like the colored surface of an object and the dark shadow it projects, also have no hyletic unity.

Merleau-Ponty (1948: 26) has called our attention to a well-known painting of Cézanne, *Le Portrait de Gustave Geoffroy*, that offers an interesting solution to the issues connected with the representation of congruence between different perspectives. For Merleau-Ponty, it was especially noteworthy the way the French painter represented Geoffroy's work desk¹⁵, but this painting has other interesting aspects. Cézanne displays the desk as if it was seen from

¹⁵ Of course, those objects don't project their respective shadows over each other. They are not able to do it since, as we will stress in a moment, they are represented as seen from nowhere. This also entails the fact that the light comes from no specific point in Cézanne's painting.

nowhere, or from different perspectives at the same time. We can only take a look of a desk from somewhere in space and, depending on our momentary “here”, the desk “there” is seen in a certain way. The fact that we say that it is always the same desk – i.e. the fact that the several perceptive noemata overlap – is a consequence of the fact that “distortions” due to our viewpoint are automatically “corrected” and the desk actually seen is every time reconstructed in its geometric form¹⁶. The overlapping process occurs in time and Cézanne was busy in trying to render this temporal process – with its peculiar multiplication of perspectives – in one sole image. However, overlapping is just a consequence of an intending subject’s movement around the intended object¹⁷. Cézanne tried to offer a pictorial solution to this problem. That’s the second interesting aspect of his painting: how to render the illusion of movement? Cézanne offered a solution by the way he depicted the books in the shelves behind Geoffroy and on the desk. The fact that, in the shelves, some are standing, but some are inclined to the right and others to the left, and on the desk they are represented according to different angles of perspective, gives the strong impression that someone’s eyes and body are moving around the objects depicted. Things would obviously be much complex if a painter intended to represent, simultaneously, the movement of the subject, of the objects and of the light source, along with the variations of luminosity, brightness and shadow. Perhaps only motion pictures can create such an illusion.

This doesn’t mean that Cézanne thought that the never-ending process of perception of a physical object could come to an end. The hidden parts of the

¹⁶ Not the “ideal” geometric form of the mathematician, but instead the more or less exact form of our lifeworld experience. That is a point Husserl strongly emphasizes in *Ideas II*. Our pre-scientific perceptual encounter is not an interaction with ideal theoretical objects, but with books, tables, houses, friends, and the like (Husserl, 1952: 25).

¹⁷ Most of the times, philosophical analysis of perception is carried out as if the perceiving subject was immobile (Gallagher & Zahavi, 2008: 99-100). But he is never immobile and even a static object is seen from the perspective of a possible movement of the perceiver, that would bring it closer or further away from him. In painting, the cubist painter Georges Braque was perhaps the one that approached most this phenomenological notion, with his idea of a tactile space. He was also concerned with the unfolding in the same single painting of all possible perspectives of the same object (Golding, 1983: 57).

desk, in case we were beyond a real thing, would need further intuitions to be grasped. However, Cézanne was trying to represent a lived experience, where things come to existence for an intending subject, and the geometrical impossibility (according to the laws of projection) of his painted desk only intended to show that lifeworld phenomenal experience is different from the achievements of science.

3. Some ontological problems

In what comes to ontological decisions, shadows bring huge problems. Descartes, as is well known, allowed for the existence of three different kinds of things: substances, attributes and modes. In the phenomenological jargon, we can say that to each of them corresponds a specific mode or appearance. According to Descartes, only substances had real independence, even in the cases where that independence was only a numerical one, like, for instance, two spheres of the same material and size; the existence of attributes was entirely dependent on the things of which they were the attributes; modes had an even more dependent existence: for instance, movement was dependent of the attribute matter (only material bodies have movement), which in its turn was dependent on the existence of extended substance. As long as the notion of extended substance can be applied to light-waves, perhaps light can be seen as a part of extended substance. But shadows have a completely different kind of being.



Figure 2

Now, let us take a look to the three images on Figure 2. We see three different shadows that have a distinct contour; they are projections of the forms of a cylinder, a cone, and a sphere. With the help of a pencil we can trace the limits of each of the shadows. If we imagine the light source turning around these three

objects, we can also imagine the shadows turning around them and, after a 360° turn, the three shadows occupying the inside of the area we previously

delimited with our pencil. However, if, when the shadow is at the opposite side from the one it occupied at the beginning of our experiment (remember we are imagining the light source turning around these three geometric solids), we fill the contour of the shadow with our pencil, and give it the same gray tonality of the shadow, what shall we conclude? Are these two appearances (the shadow and the gray area) equivalent? The answer seems to be “no”, for a very simple reason: the colored grey area is an appearance, but the shadow is the way the geometric solids appears under certain circumstances.

Following this experiment, we seem *prima facie* to be legitimized to infer that shadows like all other “abnormalities” disappear altogether in the process of constitution of the identity of an object when we carry out the method of variations. However, things are not so simple. We cannot think of the essence of an eclipse without thinking, among other things, of the shadow of the Earth on the Moon’s surface¹⁸. Shadows in this case are constitutive of the intended objectivity, i.e. they belong to their meaning, they cannot be put aside by the process of variations as if they were unessential to the phenomenon under consideration. Of course, for someone looking at the positions of the Sun, the Earth and the Moon from, say, out of the Solar System, there would be no eclipse. However, he or she could not grasp the meaning of “eclipse” without understanding that the interposition of a celestial body between a star and another celestial body would be the cause of the astronomical phenomenon called by that name. Consequently, shadows are a part of his understanding of the phenomenon, even if we picture a situation where he can only have a signitive experience of it and will never be able to fulfill his intention¹⁹. (Just like someone can understand what means a statement like “a black bird is flying up”, even if he cannot actually see a black bird or has never seen one²⁰.)

¹⁸ From an astronomical point of view, it seems that shadows in the Moon surface, during eclipses, have particular characteristics. However, since we are speaking of the perception of shadows in the life-world experience, we can put aside the outcomes of scientific achievements. Those characteristics, namely speed, can only be detected by rigorous measurements with scientific instruments.

¹⁹ On the importance of the distinction between signitive intentions and intuitively fulfilled intentions for a phenomenological theory of perception, see Gallagher & Zahavi (2008; 90 ff.).

²⁰ I take this example from Husserl’s *Logical Investigations* (1984: 550), who is discussing a slightly different issue.

Nevertheless, the shadow of the Earth is not a property of the Earth, no more than it is a property of the Moon²¹. Perhaps we have gained a first definition of shadows: they have a relational character in the sense that they are always the product of a relation; they are either the outcome of a relation between two or more objects or of the relation between an object and its surrounding space, and in both cases due to the fact that light comes from a certain point.

From a logical point of view, we may call the relation between an object and its shadow an irreflexive relation, i.e. the shadow of an object A is not projected over itself; but between two different objects A and B the relation between the respective shadows can be a symmetric one: A projects a shadow over B and, at the same time, the shadow of B may be projected over A, regardless their respective sizes²². Now, we must take notice of the existence of a third factor, in this last example, that is absent when, in the logic of relations, we talk about symmetry; this factor is the light source. However, since light always comes from somewhere, this symmetry will never be perfect, i.e. the shape and size of both shadows – even if the objects have the same form and size – will not be the same. For the same reasons, the degree of adumbration of the color of the respective shadowed surfaces will also vary.

What I have just said can be explained the following manner: suppose the object A is red (R) and a shadow from B adumbrates one of its surfaces (aR) during the stream of time $t_1 \rightarrow t_2$; then suppose that B is blue (B) and a shadow from A adumbrates one of its faces (aB) during the same stream of time $t_1 \rightarrow t_2$; supposing additionally that A and B remain motionless, any motion of the light source can have the following effect: during the next stream of time $t_2 \rightarrow t_3$ A may adumbrate the color of a surface of B and in turn not be adumbrated by B.

²¹ Actually, the problem is a bit more complex, because we must take into account, at the same time, the movement of the earth around the sun and the movement of the Moon around the earth. But this is another astronomical issue that I don't need to take into consideration for my present purpose. Anyway, see Sorenson (2006: 347).

²² In some limit situations, the shadow of A over B can render B invisible, especially if B is at a certain distance from the perceiver. One of the remarkable characteristics of shadows is the fact that they can render invisible an object even if the space surrounding the shadowed space still gets some degree of luminosity.

Further, there is the ontological problem of the relation between a whole and its parts. Color, for instance, is always an “inseparable” part of a whole, since I cannot think of an object that does not have at least one color in its surface. Things don’t change if I make the experience of a two-colored object, for instance, one red and another blue. Nonetheless, I can “abstract” from the color or colors and think only on the way an object fulfills space, i.e. on its geometrical form and on its material characteristics. The same happens when I think of two objects of the same color or of different colors; I can abstract from whatever color they have and grasp only their (similar or different) geometrical form. In the same way, I can abstract from shadows either taking into account the color of each object – that may be adumbrated in some parts of the surface by the projection of a shadow – or just taking into account their geometrical form. Shadows may render a little more difficult the grasping of the color or the form, but I can “abstract” from them altogether, as most of the times I do.

4. Final Remarks: shadows, brightness and color

Section VI of *Thing and Space* addresses some important issues for our analysis of shadows. In this final section of his Lecture Husserl replaces his previous “static” analysis (from a phonomical point of view) by “dynamic” analysis. This means that the perceived object is now regarded as moving (Husserl, 1973: 263). The way sensible qualities like color²³ and brightness fill in the geometrical space is different. Differences in tonality, as the object is moving, become relevant for the constitution of the object as an identity pole. Shadows get a similar relevance.

²³ Husserl speaks sometimes of pre-empirical coloration (Husserl, 1973: 264). Ignoring if there is any explanation for the employment of the concept of “pre-empirical”, I advance the following one. The coloration of an object is pre-empirical as long as our perception of the color (or of the colors, in case it has more than one) reflects not an objective chromatic scale but instead the colors as they are seen with their differences in brightness. Perhaps we could label them “phenomenological colors”. However, they cannot be considered mere subjective phenomena, since they are the outcome of the relation of the intending subject with the intended object, under certain circumstances.

As I already said, shadows have a particular influence in the perception of the color of an object. The concept of adumbration also finds its application here. In most of the cases we speak of adumbration when an object shows us one of his many profiles (for instance, the front-side and not the backside), but adumbrations also play a specific role in the perception of colors. Normally, poor light conditions render difficult the perception of the exact color of a surface; but also do shadows. In *Thing and Space*, Husserl described thoroughly what happens with the perception of color when an intending subject turns around an object (Husserl, 1973: 101). The possible variations in tonality and brightness are experienced in a continuous process, so that the subject knows that in these cases it's still the same color of the same object. Since the continuous process of variations that follows the primal adumbration of an object is Husserl's main concern, the variations of the lightning condition are not very important, provided those identification conditions remain constant. That is what one must conclude from the following statements:

I don't see clearly the corporeal form of my matchbox in the dark corner between my books, and the same happens with colors. I would also say that I would not reckon them if I were too far away, etc. But if I have the box on the table, in front of me, in broad daylight, I will be satisfied if I see it from all sides, with which these continuously overlapping appearances, as I turn and change the place, have the character of the highest consciousness of givenness. (Husserl, 1973: 127)

And as he goes on saying, what is really important in these cases is to have "good light". This is not a very harsh condition, and perhaps one can characterize it by saying that it is some intermediate state between light at the sunrise and after the sundown. Or, in other words, just what above we called the "normal" conditions. It is now easier to see what Husserl means by this: we may call "normal" any condition that allows the perceiving subject to correct the disturbances in the right perception – of color, form, or whatever – entailed by shadows or by distance from the intended object (Gallagher & Zahavi, 2008: 90). So, we must conclude that a difference in the stimuli does not entail a correspondent difference in perception. When someone knows, for instance, that the color of a certain surface is light blue he won't see it as a deep blue

only because it is darkened by a shadow. I don't mean, of course, that the intending subject always makes a conscious use of his past perceptions of the same surface, compares the outcome of his former perception with the outcome of the present one and then adds a "correction factor" (the shadow in my present example). Obviously, I am not also denying that this may sometimes happen.

Perhaps only in extreme cases does a shadow make us change one color for another, but it's a very common experience that a shadow may deceive us regarding the exact tonality of a certain color in cases we see an object for the first time. (It can make us change a light blue for a deep blue.) Shadows must however be distinguished from the more common phenomenon of interference, that sometimes entails similar effects. For instance, we may come close to the sea expecting to see the typical blue coloration of the water in daylight under normal solar luminosity; instead, the water looks like a vast gray surface due to the presence of clouds. Of course, the normal effect of interference is the projection of a shadow, but interference is only a special case of the general phenomenon of shadows we are trying to grasp. It's easy to see what the distinctive mark of shadows is: they have to do, in the first place, with the spatial relation between three-dimensional objects and the sources of light.

Perhaps painting is able to render more accurately the experience of the relation between shadows and the perception of color than psychology (perhaps with the sole exception of Gestalt psychology) and non-phenomenologically oriented philosophies. The latter are most of the times busily showing the deficient character of visual perceptions made under the projection of shadows above the perceived objects, while at the same time explaining how the perceiver "automatically" corrects his first impression and reestablishes the "true" color of the intended object. Abnormalities are not understood as a part of the normal experience, but instead as something that must be put aside. The danger of this attitude seems clear: we run the risk of speaking not of actual perceptions but of theoretical reconstructions of what a certain perception should be.

There is a fundamental difference between perceiving shadows and perceiving brightness and color, which has to do with the relation between these properties and the other properties of an object. That's why it would be wrong, in my opinion, to oppose the experience of light, shadow and brightness, on the one hand, and the experience of other non-visual properties, namely, tactile

qualities, on the other. I briefly addressed this issue at the beginning of this paper, when I mentioned the strange fact that the shadow of a sphere cannot tell us whether it is turning around its own axis or not, whereas we can almost infallibly acknowledge its movement by direct vision. Of course, then I was only thinking of the projection of the shadow of a sphere over a surface or over a screen. However, the shading of the surface of a sphere may have a certain importance in the perceptual experience, not only of its movement but also of its three-dimensionality (Mattens, 2008: 120)²⁴. The situation is different with color and brightness since they enable us to guess the smoothness of a thing and very often the tactile experience only corroborates what we had already guessed. With shadows this is almost impossible, except perhaps in the case of the shadow seen from near of a very irregular surface. Regardless these differences, shadows must be considered no less indispensable than color and brightness in the process of constitution of an object as an identity pole.

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²⁴ As Mattens correctly argues, a sphere illuminated from all sides would be indiscernible from a circle to the visual perception. In this case, only the tactile experience, that can be carried out independently from the existence of a light source, would enable the apprehension of the spherical form.

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