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The Perception of Time and the Notion of a Point of View

by Christoph Hoerl

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Abstract: The aim of this paper is to investigate the temporal content of perceptual experience. I argue for a view according to which we must recognize the existence of perceptions the content of which cannot be spelled out simply by looking at what is the case at an isolated instant. Acts of apprehension can cover a succession of events. However, a subject who has such perceptions can still fall short of having a concept of time. I compare this with arguments which have been put forward to show that a subject who has spatial perceptions can fall short of having a concept of space. In both cases, it is the fact that perception is from a point of view which stands in the way of it constituting an exercise of a concept of how things are objectively. However, I also show that the way in which perception is perspectival takes a different form in each of the two cases.

keywords: perception, content, time, specious present, point of view

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The Perception of Time and the Notion of a Point of View

In the 1950's, *Mind* carried a succession of papers¹ in which startling phenomena were discussed. For instance, it was claimed that if one held a white piece of paper against a dark background and moved it across through a distance of about a foot while focusing one's gaze in the middle of the paper's path, one would see a 'white streak' which would still be there even after the paper itself had finished its journey and had been seen, out of the corner of one's eye, to have halted (cf. Mundle 1954, p. 38). What lead philosophers to make such astounding observational claims was the hope that an appeal to perception could help answering the question as to what it takes for a subject to have a concept of time, i.e. to know what it is for something to happen at one time rather than another.

It is one of my aims in this paper to argue that this project was misconceived, not just because of the unfortunate choice of examples. Indeed, I shall argue that there *are* perceptions the content of which is temporal, if that is to mean that what the subject can directly perceive cannot be captured by looking at what is the case at an isolated instant alone (and we won't need to appeal to 'streaks', 'afterimages' and the like to make this point).² But while we may have good grounds for ascribing such perceptions to a subject, these aren't at the same time good grounds for ascribing to her a grasp of temporal concepts. We can envisage subjects who have such perceptions but lack the concepts in terms of which we would describe their content.

These points may sound quite familiar from the literature on the spatial aspects of perceptual experience. It is often argued that we can ascribe spatial content to a subject's perceptions independently of ascribing concepts to that subject.³ But even if we don't think that perceptual content is in this way autonomous with respect to possession of concepts,⁴ there seems to be a general sense in which it is still true that perception cannot by itself equip us with concepts that apply to how things are objectively because perception is always from a particular point of view. However, it is also an aim of this paper to show that we should be wary of drawing analogies too quickly. It is not always for the same reasons that perceptual sensitivity falls short of constituting an exercise of a genuine conceptual ability. In effect, I shall

suggest that the very idea of what it is for perception to be from a point of view can take two different forms. In both the spatial case and the temporal case a contrast obtains between the contents of perception on the one hand and the contents a subject must be able to entertain in order to have a grasp of objective reality on the other. However, this contrast is of a quite different kind for each case.

I

The problem behind the question as to what underlies our grasp of temporal concepts has more recently been reformulated in terms of the 'acquisition challenge' towards a realist construal of our grasp of tensed statements. The problem there becomes how a training which is 'necessarily restricted to confrontation with experienceable situations' (Wright 1993, p. 86) can teach us the meaning of predicates which apply to situations which are not experienceable. Obviously, when we learn what it means for something to happen at a particular time, the only data available are those which can be drawn upon in the training situation - which obtain in the *present*. But what does that mean? How is the notion of the present to be fleshed out? Our language does not seem to give us a clear way to resolve this question. Some would hold that what is denoted by 'the present' is in fact an instant, i.e. something which stands in temporal relations to other times, but within which no temporal relations can be discerned. However, it seems clear that a training situation which does not confront us with various events standing in temporal relations to each other cannot teach us the meaning of temporal concepts. On the other hand, we sometimes speak of the present day, or even the present century, marking off a long stretch of time from others. But this can't be the sense in which something must be present in order to be of any use in the training situation. It is obvious that there are at least some limitations on what we can *experience* as happening in the present, even though this may cover more than just one instant of time.

There is a theory which sets out to give an account of what we mean by saying that the present, as it is given to us in perceptual experience, encompasses more than an instant. The *doctrine of the specious present*, as I shall refer to this theory, suggests that we can in certain circumstances know what it is for certain temporal predicates to apply to an event because we can directly perceive one event preceding the other within the scope of one act of apprehension. It is thus a doctrine about the direct perception of the temporal relation between events. We don't scan reality instant by instant. Instead, each

act of apprehension presents a finite period of time in which several non-simultaneous events take place. In what is probably its most famous formulation, this doctrine is expressed by the following quotation from William James:

In short, the practically cognized present is no knife-edge, but a saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time. The unit of composition of our perception of time is a *duration*, with a bow and a stern, as it were - a rearward- and a forward-looking end. It is only as parts of this *duration-block* that the relation of *succession* of one end to the other is perceived (James 1890, pp. 609f.).

What it means to say that we have an ability to perceive events standing in temporal relations to each other is sometimes illustrated by citing the example of the second hand of a watch which we can simply see moving in a way in which we cannot see the movement of the hour hand. We can, as Hugh Mellor puts it, ‘see the event of it passing the numeral ‘1’ occur just earlier, not just later, than the event of it passing the numeral ‘2’ (Mellor 1981, p. 27).⁵ It is not always the case that perceiving one event happen before another requires two separate acts of apprehension. The atomic unit of our experience of time is not an instant, but an interval: the so-called ‘specious present’. Experience can bring together a sequence of events, and it can therefore act, as James would say, as the original from whence we learn the meaning of temporal predicates.⁶

The doctrine of the specious present, as just introduced, comprises two main claims. The first is that a succession of several events can be the object of one act of apprehension.⁷ The second is that therefore the subject can know what it is for temporal concepts to apply to an event simply in virtue of having certain kinds of experiences. In the next section, I shall discuss the reasons one might have for making the first claim, before turning to the question as to whether the truth of the first claim also establishes the truth of the second.

II

A host of empirical data has been invoked by psychologists and philosophers alike to back up the claim that acts of apprehension cover a certain amount of time.⁸ However, it is difficult to assemble them into a coherent picture. The phenomena which have been taken to count as belonging to a study of the specious present form a motley crew, and, as a consequence, the doctrine of the specious present covers a series of positions. In particular, theorists adopting the term ‘specious present’ have often failed to draw a clear distinction

between the phenomenon of events being the object of one act of apprehension on the one hand, and the phenomenon of events being stored in short-term memory on the other (cf. Kinsbourne and Hicks 1990). This becomes particularly clear when we look at the suggestions as to how *long* the specious present is actually supposed to be. James, for instance, mentions as somehow relevant the fact that a minimum of 2ms must elapse between two auditory stimuli in order for us to perceive them as distinct from one another (James 1890, pp. 613f.). At the same time, he also speaks of the ‘maximal extent of our immediate distinct consciousness for successive impressions’ (ibid., p. 612) which he estimates to be about 12 seconds. Any discussion of specious present theories is therefore open to the criticism that it addresses only some of the phenomena appearing in the literature. To preempt such a criticism, and to single out the sense of the specious present which is relevant for an account of time perception, it is worthwhile to try and outline the general features of an account of the elements of time perception. One attempt at offering a general explanation for the existence of specious present experiences which does not rely on a contentious phenomenology has been made by J.R. Lucas. He argues as follows:

The “specious present” is a conceptual necessity in so far as we consider time from the standpoint of the agent. Deeds are not discrete. We cannot analyse activities into series of isolated atomic acts. Rather, the correct description of what a person is doing at any definite instant will depend on what he has been doing and is going to do. [...] Even when we are not acting, but only perceiving, we experience the present more as an interval than an instant (Lucas 1973, p. 24).

There is at least one important respect in which Lucas’ claim needs to be sharpened. There is a sense in which it is true that what a person is doing at any definite instant depends on what he has been doing and is going to do, but it does not have anything to do with the specious present. For instance, in order for a person’s act to qualify as an apology, it has to stand in a certain relation to something he did earlier. However, this is clearly not the dependence Lucas wishes to draw our attention to. On any theory of the individuation of actions, doing something and later apologizing for what one has done will count as performing two different actions and thus not as something which the subject has to be able to apprehend as a unity.

What Lucas must have in mind is rather that actions take time, and that once we start subdividing what happens into shorter temporal parts the fact that there is an action taking place disappears out of the picture. In this sense, however, it is misleading to say that what a person is doing at any definite

instant depends upon what he has been doing and is going to do. A photograph may show me riding a bicycle, and that this is the right description of the action depicted (rather than, say, 'balancing on a bicycle') depends upon what has happened before and after the picture was taken. But this does not mean that it depends on any *action* which I performed before and after the picture was taken. Rather, the picture was taken while I was performing an action of riding a bicycle, an action which took longer than the time of exposure.

In the first place, this means that what one is doing is not simply a question of where one's limbs are at a particular instant. However, there is another aspect which is more immediately relevant to questions of perception. What one is doing also depends upon the situation in which one is doing it, and very often this situation itself cannot be captured by saying what is the case at a particular instant. What I do on a bicycle depends crucially on whether the bicycle is moving or not, or the direction in which it is moving, or the speed at which it does so. Thus, in so far as we ascribe to an agent an ability knowingly to perform certain actions (like riding a bicycle), we credit her with the capacity to make out such features.⁹ In other words, we ascribe to her perceptions the content of which must be spelled out in terms of events happening non-simultaneously and their relation to each other.

The perceptual ability described here clearly involves some capacity for integrating events which happen non-simultaneously. It may therefore look like it owes just as much to memory as it does to perception. Saying that some kind of memory faculty is involved, however, does not by itself undermine the claim that acts of apprehension can cover a succession of events. It would do so only when combined with the view that judging that one event happened after another is always a question of perceiving the second, and only the second, event while remembering the first. A view of this kind seems to be held by Hugh Mellor (1981, ch. 9), who argues that judgements of temporal order rely on a causal connection between perceptions. He claims that one can be conscious that one event follows another only if one's perception of the second event is causally affected by one's perception of the first. The appeal to memory thus comes in as an appeal to a causal mechanism. However, I don't think that the necessity of a causal mechanism which makes the way in which we perceive the second event different from that of the first (or different from what it would be had the first not occurred before) forces us to adopt Mellor's way of putting things. In a neutral terminology, we could say that the fact that one event has already been registered when another is registered makes it the case that we see the first event preceding the second, rather than vice versa, without this committing us to the existence of separate perceptions of the two

events. The mere fact that the causal efficacy of registering an event can go beyond simply causing us to perceive it and can affect the way we perceive another event that follows it, so that we become aware of the temporal succession of the two events, does not prove that our awareness is based on having had separate perceptual experiences of the two events. According to the view I am advocating it is of course still possible to say that someone who sees one event preceding another sees both events, but not in the sense that those two events are the objects of two separate acts of apprehension. The sense in which she can be said to see each of the events is rather like the sense in which we can say of someone who sees two objects that she also sees each of the objects, without being committed to the existence of two separate acts of apprehension (I shall come back to this analogy, and possible disanalogies, below). What prevents Mellor from holding such a view is his claim that the perception of one of the two events causally affects that of the other, together with the view, to which he subscribes (*ibid.*, p. 120), that events are individuated by their causes and effects, which presumably also applies to perceptual experiences.¹⁰

Of course, saying that there are cases in which a number of events in succession can be the object of one act of apprehension does not mean that just any kind of temporal sequence can be perceived as such. In effect, what kind of temporal content can be ascribed to a perception depends on two factors. As a matter of empirical fact, there are temporal constraints on what can become the object of perception at all. Some processes are over too quickly, others take too long for us to be able to perceive them. There is a window of time within which events must occur in order for the relations between them to be perceptible.¹¹ But even so, this does not mean that there is a standard ‘unit of perception’ of time which is itself somehow represented in each perception. This is because perception can only ever discern temporal structure as the structure of a particular process perceived.¹² Think of vision as an analogue: We can only perceive the size of things which occupy more than a certain minimal angular size and less than the maximum angle of the whole visual field. But that does not mean that we perceive the size of our visual field. What we perceive is the size of things presented in it.

III

We have seen why one might claim that there are perceptions whose contents we can only specify appropriately by acknowledging that they present us with events standing in temporal relations to each other. Granted that there are at

least some such perceptions, do they explain how we come to grasp temporal concepts? The argument put forward so far gives us reason to say that temporal features of reality can enter into the content of perception in the light of the immediate implications they possess for actions.¹³ This close connection between perception and action, however, raises the question of whether the temporal contents of perception can ever possess the generality that would be characteristic of exercises of genuinely temporal concepts.

In general, a satisfactory answer to the question of what it is for a subject to have a particular concept must do two things: Firstly, it must explain the sense in which it can be said that the subject can appreciate that objects or events within the class which are present in the learning situation fall under certain predicates. Secondly, it must explain what enables the subject to grasp what it would mean for the same type of predicates to apply to events outside that class.¹⁴ In fact, any attempt to account for our acquisition of temporal concepts will either succeed or fail on both counts. The two constraints mark the two sides of the same coin: The subject can be counted as discerning the relations obtaining within the specious present as genuinely temporal only if she is able to conceive of the perceived events as standing in the same kinds of relations to events outside. We can describe a particular judgement as involving temporal concepts only if these concepts are also available to the subject in other circumstances. In particular, in order for them to count as temporal concepts, they must furnish the subject with an understanding of her own position in time *vis-à-vis* the past and the future.

Alfred Ayer has suggested the following procedure leading from the perception of an order of succession among events to a definition of the concepts of past and future.

It can, I think, plausibly be maintained that the relation of temporal precedence is 'given' to us in experience. As a matter of empirical fact, one can see or hear A-following-B, in the same immediate fashion as one can see A-to the left of-B. And this relation of temporal precedence, coupled with the notion of the present, which may be defined ostensively, is all that is required to yield the concepts both of the past and of the future. Defining the present as the class of events which are contemporaneous with *this*, where *this* is any event that one chooses to indicate at the given moment, one can define the past as the class of events which are earlier than the present, and the future as the class of events which are later than the present (Ayer 1956, p. 152).

Ayer's proposal is not entirely clear, especially because he does not spell out the precise connection between the claim that the relation of temporal precedence

is given in experience and the claim that we can employ the concepts ‘earlier’ and ‘later’ in a definition of the concepts ‘past’ and ‘future’. What he must have in mind, I take it, is something like this: Perception makes available to us two different kinds of concepts. On the one hand, it allows us to form concepts of the type ‘this relation’ picking out what are in fact relations of temporal precedence between events. On the other hand, it also allows us to form concepts of the type ‘this event’ picking out individual events themselves. The second kind of concept, we are told, can be drawn upon for an ostensive definition of the word ‘present’. Once this is done, however, ‘past’ and ‘future’ may be also be defined. All we need to do, it seems, is to employ the first kind of concept and make use of the fact that the past precedes the present and the present precedes the future.

Problems with Ayer’s proposal become apparent as soon as we take into account some of the empirical literature on time perception. The first thing to note is that in a taxonomy of ‘elementary temporal experiences’ (cf. Pöppel 1978) the perception of precedence does not seem to form the most basic case. We can see changes occurring without being able to tell in which ‘direction’ they occur. There is a clear-cut distinction between the ‘fusion threshold’ which defines the minimal interval between two stimuli at which the subject is able to perceive them as distinct, and the ‘order threshold’ which defines the minimal interval between two stimuli at which the subject is able to tell which of the two came first. The value of the fusion threshold varies depending on which sense modality is involved, but can be as short as 2ms for auditory stimuli. The order threshold seems to lie at about 20ms for all modalities.¹⁵

This means that there are some perceptions the content of which must be explicated by saying that they represent two events as being non-simultaneous, but of which we cannot say that they also represent the temporal order between those two events. It should be clear that Ayer’s proposal does not work if we take this kind of experience, rather than the experience of temporal precedence, as our starting point. First of all, the relation discerned would not allow a subject to develop a notion of the direction of time. Thus, even equipped with a concept of the present, the subject would not be able to form distinct concepts of the past and the future. It might, of course, still be thought that the subject would be able to form a more basic idea of times *other than* the present. But even this is doubtful, because it seems impossible that the subject should ever come to possess a concept of the present in the first place. When we take as our starting point an experience of two events as happening non-simultaneously which does not allow us to discern which of them came first, there does not seem to be anything within this experience that would allow us

to single out one of the perceived events in contrast to the other, and thus the proposed ostensive definition of 'the present' would never even get off the ground.

It therefore seems to make good sense that Ayer takes as his starting point not the perception of non-simultaneity, but rather the perception of precedence. On his picture, the concept 'this relation' picks out a transitive relation with an intrinsic direction. However, in order for his account to work, perception must also provide the basis for the proposed ostensive definition of the concept 'the present'. And this is where an appeal to the perception of precedence does not fare any better than an appeal to the perception of non-simultaneity. Suppose we could single out one of the events in question in virtue of the fact that our perception presents it as happening after the other and suppose we could even somehow indicate this event. If we were then to utter something like 'The time of this' while indicating that event, we would refer to a particular time, moreover, to the time that is present when the event takes place. However, we would surely not have made clear what it is for this time to be *present*. The way it is picked out is in virtue of its being the time of a particular event, and that event will soon be past.

In short, the fundamental weakness of Ayer's account lies in the proposed ostensive definition of 'the present'. It seems reasonable to say that only events which are present can be perceived,¹⁶ but this does not mean that perception can convey all by itself what it is for an event to be present - if anything, it seems to rule it out.¹⁷ This becomes particularly obvious when we allow perception to cover a succession of events. Each of them will be perceived to happen before or after others, but none of them will be perceived as being present while the others are being perceived as past or future.¹⁸ And even if only one event was perceived it would not be perceived as present either. We can only ascribe a particular content to a perception if we can make sense of perceptions which lack this content, and nothing could possibly count as perceiving something as anything other than present. In order for it to be possible to define 'the present', it seems, it must be clear what it is to be distinguished from, namely the past and the future. However, on Ayer's account, an understanding of the past and the future is what the definition is meant to yield, not what it has to rely on.

IV

One might try to summarize the argument so far by drawing out a parallel between temporal and spatial reasoning as, for instance, the following words from William Friedman suggest:

We come to understand the layout of a town or a city by piecing together information learned from many different journeys, from directions others have given us, and from maps, eventually forming mental representations of large-scale spaces (often called *cognitive maps*) that are much more powerful than any collection of snapshot views. Similarly, our knowledge of time goes far beyond the piecing together of impressions of brief durations. Of course the brain receives information successively over time. But, to an extent unique among species, we are gifted with mental processes that allow us to step outside the “now,” the endless succession of stimuli, and to build elaborate models of time: of the fluctuations of nature, the past, the present, the future, near time and far time (Friedman 1990, pp. 6f.).

The truth of this quotation lies in the fact that, in the case of both spatial and temporal reasoning, the subject’s grasp of reality is dependent not only on her possessing perceptions the content of which is determined by the spatial and temporal relations in her environment, but also on something else which manifests itself in her ability to combine these perceptions in a particular way.¹⁹ However, emphasising this similarity threatens to obscure the fact that there obtains a crucial difference between two ways in which our grasp of objective reality may have to go beyond the information imparted by individual perceptions. This difference may become clear when we take a closer look at the two cases of our perception of the relative location of objects in space and our perception of the sequence of events in time, respectively.

To be precise, the case with which I wish to contrast our perception of the sequence of events in time is that of our perception of the relative spatial location of two objects in the horizontal plane. The typical case I have in mind is that of a perception of *A* as being to the left of *B*.²⁰ The reason why such a perception does not by itself equip us with knowledge of the objects’ positions in objective space is that it is inherently egocentric. In the content of the experience, the location of the objects is given in relation to the subject’s body and its axes, within the framework of what Evans calls ‘egocentric space’.²¹ If the subject was located at a different position relative to *A* and *B*, the content of the perception would be different.

The mere having of the perception thus does not imply that the subject also has a representation of the objective locations of the perceived objects. In order

to have such a representation she has to appreciate that her having a perception with this content is the joint upshot of two factors: the actual positions of A and B , and her own position relative to them. But since the individual perception only gives the positions of A and B within egocentric space, the subject must know what is involved in imposing upon that egocentric space a non-egocentric framework in which the actual positions of A and B can figure, before she can count as representing to herself the objective relation between them. This is what it means to possess a cognitive map of the region involved, and it is only the subject's possession of such a cognitive map which gives her perceptions genuinely *spatial* content.

Contrast this with the case of our perception of the relative temporal positions of two events M and N . Clearly, the contents of temporal experience in this sense are not egocentric in the way just described. Of course, in order to perceive M and N at all, the subject will have to perceive them when they happen - she must have her eyes open at the right time, for instance. But this does not mean that the perception will present her with temporal reality as seen from a particular point of view which would allow for other points of view from which the same reality can be perceived under a different aspect. In this sense, the information imparted by my perception of M as preceding N is not sensitive to my own position in time.²² The contents of time perception can be spelled out by using words like 'earlier' and 'later', i.e. in terms of what McTaggart called the B -series.²³ And the point McTaggart made about the predicates locating an event in the B -series was that they apply to this event permanently, i.e. independently of when they are attributed to it.²⁴

Now, what does this mean when it comes to the question as to whether the subject has a representation of the two events' location in objective time? Again, in order to have such a representation, the subject would have to appreciate that her having a perception with that content is the joint upshot of two factors: the actual positions of M and N , and her own position relative to them. However, as we have seen, the subject's position relative to M and N does not seem to enter into the content of her perception of them. This could only be the case if there were other possible perceptions of M and N which differed from the one she actually has in that they somehow show the same two events from a different position in time. But there can be no such perceptions.²⁵ It thus still holds that in order for the subject to have a representation of the two events' position in objective time, she has to be able to make an identification, except that the direction of fit is reversed with respect to the spatial case: Perception supplies us with non-egocentric information about the temporal relations between events, but in order for this

information to enable us to refer to the particular times when these events happen, we have to be able to impose upon this information knowledge of the egocentric relations between us and them. Otherwise we would simply fail to locate the perceived events in objective time.²⁶ In other words, in order for us to conceive of an event in time, not only do we have to know what it is for that event to occupy a position in what McTaggart called the *B*-series, we also have to know what it is for it to occupy a position in what he called the *A*-series - the series of positions running from the past through the present to the future, or conversely.

In Friedman's terms, a subject's knowledge of a certain domain consists in her ability to locate things perceived on a cognitive map of that domain. But in the two cases we have discussed, this ability manifests itself in two different ways of imposing onto the information given by individual perceptions an additional framework. Either this additional framework is needed to introduce the idea of how things are independently of where the subject is located in the domain, as in the case of spatial perception, where the subject must grasp what it is for a possible multitude of different perceptions of two objects to be conditioned by the same objective spatial relation between them. Or the additional framework is needed to introduce the idea of what it is for the subject herself to be located in that domain,²⁷ as in the case of temporal perception, where the subject must grasp what it is for a perception of two events to be conditioned by the fact that they must be present in order to be perceived. In either case, an identification needs to be made which goes beyond the information imparted by the individual perception.

V

The doctrine of the specious present, as I have discussed it in this paper, sets out to give a positive meaning to the claim that the relation between events which happen at different times can sometimes enter into the content of perception. Arguably, we can sometimes simply see a traffic light change from red to green, hear a musical piece being played at very slow speed, or feel the raindrops running down our face. I have argued that in order for this to be possible, acts of apprehension must cover an interval of time. In other words, there are perceptions the content of which can only be spelled out in terms of events standing in certain temporal relations to each other. Once this much is established, however, a central question still remains. We have yet to show whether the fact that perceptual experience can comprise a sequence of events can be said to make available to the subject the concepts in terms of which the

temporal relations within this sequence can be specified. I have argued that this is not the case, since the contents of time perception do not possess the requisite generality in order for having such perceptions to count as exercising genuinely temporal concepts.²⁸

Fundamentally, perception allows a subject to react differently to differences in the environment. On the basis of feeding into this discriminative capacity perception can be ascribed contents, because it represents the world as being a certain way. In perception, we can say, features of reality are represented in the light of their immediate relevance for the subject's actions. This close connection between perception and action also ties the contents of perception to the subject's point of view. So far, the dominant way of approaching the perspectival nature of perception, and thus the way in which perception can fall short of providing the subject with a conception of objective reality, has been to look at cases in which, as we might say, this perspectival nature manifests itself as a feature of the content of perception itself. A case in point is that of a subject's perception of an object *A* being to the left of another object *B*. Here, the point of view defines a way in which objects are being perceived by the subject situated at that point of view - the content of the perception is egocentric. However, the example this paper was meant to highlight - that of a subject's perception of an event *M* happening before another event *N* - shows that this is not the only way in which the perspectival nature of perception can manifest itself. The temporal contents of perception, I have argued, must be spelled out in non-egocentric terms. It is not the *way* the events in question are being perceived which is marked by the fact that perception is always from a point of view. Rather, the subject's point of view defines a condition upon her being able to perceive these events *at all*. However, as I have also tried to show, this does not make the contents of temporal perception any more objective than those of spatial perception. A subject who perceives *M* happening before *N* but fails to see that her being able to perceive the two events at all depends on them being present has no more of an objective conception of time than a subject who perceives *A* being to the left of *B* but fails to see that her perceiving the two objects in this way depends on where she is located relative to them has an objective conception of space.

Notes

¹ Cf. Mabbott 1951, 1955 and Mundle 1954. The discussion at the time arose over remarks originally made by Broad 1923. For other precursors of this debate cf. James 1890 and Russell 1915.

² Talk about perception (or perceptual experience) in this sense is meant to exclude an appeal to episodic memory. I have used the term ‘directly’ to emphasise this. A judgement made on the basis of episodic memory might also be described as based on perceptions, *viz.* perceptions made at some time other than the present, but these perceptions could only figure in the judgement in virtue of being remembered.

³ Evans (1982, chs. 5 & 6) is sometimes thought to have held such a position, see also Cussins 1990 and Crane 1992.

⁴ Cf. Evans 1982, pp. 158f., Peacocke 1992, pp. 90ff.; McDowell (1994) has argued that perception cannot be ascribed content at all unless it is itself an exercise of conceptual capacities.

⁵ See also Broad 1923, pp. 351ff. and the discussion of Broad’s position in Plumer 1985, pp. 26ff.

⁶ Zihl et al. (1983) point out that visual movement perception can be selectively disturbed as a result of brain damage. Their patient could not see a target in motion when it was faster than a certain speed. Instead, she would see apparently stationary targets appearing successively at various positions along its path.

⁷ As I will show below, the perception of succession may not form the most basic case, though it may be particularly important for an attempt at spelling out the doctrine of the specious present. The point here is that events can be perceived *as* occurring in succession. Two events occurring in the same specious present need not be perceived as occurring simultaneously.

⁸ For an overview of at least some of them cf. Whitrow 1980 and Pöppel 1978.

⁹ That animals can be responsive, for instance, to the direction of movement of an item was shown in experiments testing the reaction of young gallinaceous birds, ducks and geese to a bird-shaped model that was sailed over their heads. The model had symmetrical anterior and posterior wing edges, and at one end of the body axis there was a short protuberance, while on the other there was a long one. ‘When this model was sailed to the right it had a short neck and a long tail. When flown in the other direction the neck was long and the tail short. In the first case it elicited escape responses; in the latter it did not’ (Tinbergen 1969, p. 77). Thus, the reaction does not just depend on the shape of the stimulus but also on the direction of movement. The explanation Tinbergen offers for this phenomenon is that the model will resemble a bird of prey (which characteristically has a short neck and a long tail) when moved in one direction, but quite a different bird (with long neck and short tail) when moved in the opposite direction.

¹⁰ Mellor’s position is actually more ambiguous than these words suggests. He says that ‘[t]he perception of precedence demands a corresponding causal order in the perceptions of the events whose succession is thereby perceived’ (Mellor 1981, p. 145). This does seem to allow for talk about a perception of several events, though only in so far as this perception is itself grounded on separate perceptions of each of the events.

¹¹ Some way of determining the maximum duration an act of apprehension can cover must be in order, though this is a very thorny issue. What can count as belonging to one act of apprehension seems to have something to do with the way the subject actively organizes perceptual input. In fact, some such idea is already in place when we distinguish acts of apprehension by their *spatial* contents. For instance, two perceptions will count as distinct if they present us with different aspects of the Necker cube. The Necker cube is also an interesting example in the context of the temporal organization of perception.

It has been suggested that there is a limit both to the rate at which we can 'make' the aspects switch and to the time for which we can actually focus our attention exclusively on one aspect before it 'automatically' switches into the other (Fraisse 1963, p. 93). Data cited in support of the claim that there is a certain limit to the length of time a process can take and still be experienced as a unit also includes the fact that poetry and music work with similar units of composition across cultures (ibid., p. 92).

¹² Thus, the doctrine of the specious present does not imply that intervals are perceptible objects; cf. Newton-Smith 1980, ch. VI. See also the programmatic title of Gibson's 1975 article 'Events are Perceived but Time is Not.'

¹³ In so far as they enable us to adapt our behaviour to certain features of reality the contents of perceptions are most appropriately specified in what John Campbell (1993, pp. 82ff.) has called 'causally indexical' terms. Campbell gives as examples for causally indexical terms 'is a weight I can easily lift', 'is too hot for me to handle' and 'is within reach'.

¹⁴ Cf. Peacocke 1986, pp. 66f. James' own metaphor is revealing here: Why should it count as an explanation of how we can look forward and backward in time to point out the breadth of the saddle we sit on?

¹⁵ Cf. Hirsh and Sherrick 1961. This was already recognized by James (1890, p. 610).

¹⁶ Taken literally, this is clearly false, since astronomers can see events which happened thousands of years ago. It would therefore be more appropriate to say that only events which presently impinge upon one's senses can be perceived.

¹⁷ On this point see also Mabbott 1955, p. 382.

¹⁸ It is true that if one event happens before another we can also say, for instance, that the former is past when the latter is present, leaving open which event is actually present. But I think it would be misleading to say that perception can similarly represent, say, one event as being past when the other is present while remaining silent on the question as to which event is actually present. A comprehending use of the concepts of the past, the present and the future must go beyond an ability to apply them in cases like this and must extend to cases where events are actually judged to be past, present or future.

¹⁹ This point is made particularly vividly in Strawson's (1974, pp. 52f.) discussion of the connection between perception and imagination.

²⁰ Garnham (1989) distinguishes three different meanings terms like 'to the left of' can assume: (a) 'When a speaker uses a spatial relational term with its *basic meaning*, he or she locates a single object relative to him- or herself' (ibid., p. 54); (b) 'The *deictic meaning* of a spatial relational term relates two external objects to one another via the speaker-centered co-ordinate system' (ibid.); (c) One can also use a spatial relational term with its *intrinsic meaning*. In order to do so, 'one must recognize that other people and objects have their own person- or object-centered co-ordinate systems [and] recognize that two people or objects can be related to one another via the intrinsic parts or co-ordinate system of the second-mentioned person or object' (ibid., p. 55). My own example concerns exclusively perceptions in so far as they may give rise to deictic uses of spatial relational terms. An example for an intrinsic use of a spatial relational term is 'She sits to the left of the Speaker in the House of Commons.'

²¹ Cf. Evans 1982, p. 154 & passim. See also Peacocke (1992, p. 62), especially on the relevance of the bodily axes.

²² It is to some degree dependent on my position in *space*. If *M* and *N* happen at places which are very far apart and I am close to *M*, someone located close to *N* might see *N* preceding *M*.

²³ The point here is that if we wanted to say that the content of the perception is ‘*M* is past and *N* is present’, then there would need to be a perception the content of which is, for instance, ‘*M* is present and *N* is future’. But why should this describe a separate perception, granted that, in both cases, both events need to have been registered in order to be perceived?

²⁴ Cf. McTaggart 1927, p. 10. In a different terminology, we could call the content of such perceptions *allocentric* - from no particular point of view.

²⁵ We can describe episodic *memory* as representing formerly perceived events from a different temporal point of view. But here we are pursuing the question as to whether a subject could have a concept of time just in virtue of having certain perceptions, so that she would be able to have such a concept even if she lacked a faculty for episodic recall.

²⁶ Wilfrid Sellars (1962, p. 592) puts this point by saying that only against a picture of time which includes an explicit ‘now’ can the *non-fictional* character of statements about time become clear. This echoes McTaggart’s (1927, pp. 16f.) example that the mere *B-series* formed by the adventures of Don Quixote does not constitute a temporal series.

²⁷ This thought is not quite so prominent in Evans’ discussion of cognitive maps. But he says, for instance, that ‘nothing the subject can do, or can imagine, will entitle us to attribute such a representation [i.e. a cognitive map] to him if he cannot make sense of the idea that *he* might be at one of the points representable within this map’ (Evans 1982, p. 163).

²⁸ The *theorist* may have good arguments for saying that any kind of change necessarily involves a temporal relation between how things are before and how they are afterwards (cf. Le Poidevin 1991). But from this it does not follow that the perception of change involves the perception of the temporal relation between before and after.

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