NON-PASSIVITY OF PERCEPTUAL EXPERIENCE

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Abstract:

The main problems faced by a conception of perception as passive will be introduced through a critical examination of John McDowell's account of 'empirical thinking'. Overcoming these difficulties will lead to a conception of perception as involving an active cognitive participation of the perceiver, and an account of how observational judgment is warranted that is focused on the conditions of experience. In both cases, analogies to inquiry in scientific experimental practice will be explored.

"Seeing is in some respect an art, which must be learnt" William Herschel, 1782.

Seeing is believing, at least in the sense that perceiving something is a warrant and justification for belief that it is so. For perception to play this role, it appears that it must have content, suitably related to the content of the belief, and that what content it has must be a matter of receptivity rather than within our control. This basic intuitive understanding of the matter is prevalent; its articulation has proved exceedingly difficult. To arrive at a more precise understanding we shall explore analogies to inquiry in scientific practice. Taking the detailed account of 'empirical thinking' in the work of John McDowell as a starting point, we will strive for a conception of perception as inherently active, practical, and participatory.

The conception of perception as having conceptual content, defended by McDowell in *Mind and World*, has been the focus of innumerable discussions (see e.g. Gunther (ed.), 2003). Also central to McDowell's view is that perception is passive, in a sense to be specified. This alleged passivity, critical to the account because it purportedly warrants perceptual objectivity, has hardly been discussed in the literature, let alone called into question.

I will discuss two major difficulties which obstruct this account of perception as passive and argue for a double qualification of the passivity of perception. The first problem has to do with cognitive responsibility. Typically, the passivity of perception excludes from the domain of perception any experience with a content for which the subject has some cognitive responsibility. Much of what we ordinarily regard as perceptual experience presupposes, however, some cognitive activity and implies some cognitive responsibility for its content. The first qualification will then be to complement the domain of passive perceptual experience by a domain of *participatory* perceptual experience. The relation between the two forms of experience will provide a model for how 'seeing' is related to 'looking' in general. Drawing on an analogy with measuring activity, the relation between the two forms will be characterized as a diachronic relation.

The second problem is related to the justificatory function ascribed to perception with respect to empirical thinking. For perception to play this role, and this is the second qualification, the concept of passivity must be freed from the idea of non-endorsement of the content of experience which locates the latter outside the domain of our beliefs. The challenge is to do so without threatening the objectivity of empirical thinking. Looking once again to practice, and to reasoning involved in experimental inquiry, it will be argued that perceptual beliefs are ultimately justified not by pointing to supposedly non-endorsed contents of experience but by appealing to the *conditions* of experience.

1. Starting With McDowell's Account Of Perception

For perceptual experience to serve as a rational ground for empirical thinking, it must satisfy, according to John McDowell (1996), two conditions: it must be passive and its

content must be conceptual.¹ In McDowell's inquiry into the condition for the possibility of empirical thinking, the passivity of experience plays a fundamental role.

If our thinking is to be *empirical*, to be directed at the world, then the world, McDowell says, must exert a normative constraint on our thinking, and that constraint must be through the content of experience (1995, 231). For this constraint to be normative, McDowell argues, it has to be possible for the content of experience to entertain a rational relation with empirical judgments, and for that, this content must be conceptual (1996, 11; 1995, 237). But if the constraint exerted by the content of experience on our thinking is to be empirical, it must come from outside this thinking, it must take the form of being "saddled with [conceptual] content." As a (conceptual) given², impressed on our sensibility from outside the domain of our judgments and beliefs, the content of perceptual experience can exert a constraint on empirical thinking warranted to be, not only rational, but external to this domain. And the existence of such an external constraint is viewed as nothing less than a condition of possibility of the objectivity of our thinking directed at the world, a condition of our being in touch with the world. I will come back later to the problem of having the content of perception at the same time external to the domain of our beliefs and rationally constraining. First, we need to clarify the notion of passivity and what it means that one is 'saddled with conceptual content'.

For McDowell, conceptual capacities belong to the 'faculty of spontaneity', they are "capacities whose exercise is in the domain of responsible freedom" (1996, 12). And McDowell insists that the capacities drawn on in receptivity could not be regarded as conceptual were they not the same as the capacities that are involved in active thinking. How, then, is it possible to have perceptual experience, at the same time, being passive and involving conceptual capacities, with the ideas of spontaneity and responsible freedom attached to them? To answer this, McDowell introduces a crucial distinction: perceptual experience involves the same capacities as are exercised in active thinking, but in receptivity these conceptual capacities are merely *actualized* (1996, 9; 1998, 410).

To assert the conceptual character of the content of experience is to reject a two-level conception of empirical thinking of the sort defended for instance by Evans (1982), in which one level does not involve conceptual capacities. But there are still two levels; it is

rather that the demarcation is now in terms of *how* conceptual capacities are involved. The first level is the one of impressions, experiential intakes, in which conceptual capacities are (merely) actualized. The second is the level of judgment, of the exercise of conceptual capacities, where acts of thinking are realized and contents are endorsed or rejected.

This contrast between actualization and exercise of conceptual capacities is all the more important since McDowell does not dwell much on characterizing passivity, besides saying that experience is "a kind of occurrence or state" (1996, 9) and using such metaphors as 'being saddled with content' or 'passive reception'. But it is indirectly characterized through a systematic contrast with the (active) exercise of conceptual capacities. Conceptual capacities are "defined as the kind of capacities they are by their role in active self-critical thinking" but "experience itself is not a case of that." Conceptual capacities are fully exercised in judgment, "which is the end… of the controlled and self-critical activity of making up one's mind. (…) But the very same capacities can be actualized, outside the control of the subject, in the receptivity of sensibility." (1998, 410) Even in judgments closest to experience "one's conceptual capacities have already been brought into play, in the content's being available, before one has any choice in the matter." (1996, 10)

The distinction between the passivity of experience and the activity of thinking hinges thus on the strict opposition between the subject of experience having or not having some control on the operation of conceptual capacities. That experience is passive is tantamount to saying that the subject of experience has no cognitive control on what the content of his or her experience is: to experience is to undergo a certain occurrence, finding oneself in a certain state, characterized by a certain content. Can this conception of perception as passive account, accurately and comprehensively, for our perceptual life?

2. Toward A Concept Of Participatory Perception

Imagine you are looking hastily for a particular book on the bookshelf and are able, without identifying the titles, suddenly to discriminate this book from the others. Throughout, no doubt that you are completely engaged with the world; but this is a highly

controlled and sophisticated form of perceptual engagement. You have shaped your perceptual faculty into a specific instrument of search and adopting, as well as sustaining, this specific 'radar-search' perceptual attitude is up to you. This is not an experience one can simply find oneself having, but it is, nevertheless, a very common sort of experience and an experience that it seems difficult not to identify as part of our perceptual life. If this sort of experience involves some cognitive control, however, according to a passive conception of perception, it cannot count as perceptual experience. Could a passive conception of perception offer a satisfactory alternative account of it?

There is indeed an alternative account that a passive conception of perception may try to put forward by somehow dismissing the 'call to account'. I will examine that option in a moment. But there is also a positive account that may seem available to a view on perception as passive. I will call it the 'active preparation' account, and begin by considering it first.

There are well-known cases of perceptual experience apparently involving some activity and however accountable in terms passive reception. Take the phenomenon of 'color constancy' (Thompson 1995). A sheet of paper that looks black when seen in the shade will still look dark if the perceiver goes out in the light; and this phenomenon is commonly interpreted as a demonstration of the non-passivity of the perceptual system. However, Thomas Johansen (2002) argues, it can be made compatible with perception as passive by understanding the relevant activity as merely an adaptive preparation of the perceptual system, rather than part of the perception itself: "vision has an *active* ability to adjust its mean in relation to the circumstances... The eyes have to reset themselves emerging from a dark room so as to register relatively stronger movements, which are at first blinding." On this view, the senses adjust themselves to the new environmental conditions so that perception can take place, passively, in an optimal way. The passivity of perception can be maintained by deflecting the activity involved from the perception itself towards the *preparation* for perception.

However judicious, this account cannot be an immediate answer to the problem we are concerned with. The form of perceptual activity that Johansen considers is one in which it is 'vision' that adjusts itself, 'the eyes' that reset themselves. The case we are considering

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is one where the subject himself is actively involved. But this distinction between preparation of the perception and the perception itself is nevertheless relevant. It appears to be precisely what McDowell seems to recommend when he admits that to attribute passivity to experience is not "to deny that experiencing the world involves activity. Searching is an activity; so are observing, watching, and so forth. But one's control over what happens in experience has limits: one can decide where to place oneself, at what pitch to tune one's attention, and so forth, but it is not up to one what, having done all that, one will experience" (1996, 10, n8).

McDowell does not develop any further his account of such activities as searching, observing or watching, and it is not clear how the difference between mere seeing and observing or watching would be accounted for. But this scarcity may itself be informative: it suggests that there is no important difference between the perceptual experience one has when one is merely seeing and the perceptual experience one has when one is searching, observing or watching. Searching, observing or watching are regarded as activities in that one actively contributes to the realization of certain conditions, for instance, by looking in a certain direction, by being more attentive. But perception itself takes place after that, without being different from a mere seeing in significant ways. So, what may seem to be cases of non-passive perception would have to be understood as cases of actively prepared passive perception.

The problem is that, whatever one does with one's body, as long as one is not perceiving, that may be acting but it is not searching, observing, or watching. Searching, observing and watching presuppose, not that one is *going to have* a perceptual experience, but that one *is* having a perceptual experience. Admittedly, to place oneself somewhere and to turn one's eyes in a certain direction may not qualify, in themselves, as *cognitive* activities. But as activities, rather than mere movements, they presuppose some intentionality and some cognitive control.

To answer that objection, one may try to analyze the searching, observing or watching in a series of passive seeings separated by brief periods of activity in which the perceiver resets her orientation, turns her body, tunes her attention, and so on. The new problem

would be to account for these seeing and activities being elements of a unified experience without appealing to some form cognitive activity permeating the whole series.

But perhaps the most fundamental difficulty is to square any such separation, between preparation for perception and perception itself, with the character of the experience itself. Think of watching the sunset, or scrutinizing a painting and discerning progressively subtler details. These experiences could not count less as perceptual than scanning the shelf in search of a book. They are necessarily not instantaneous events, but there is nothing they could be said to be a preparation for but themselves. Some other cases seem to admit the distinction more readily, like someone trying to recognize from the window the person standing at the gate. Let's imagine there is a moment where the person in question, Ulysses, is recognized. It is tempting to think of this moment of recognition as, perceptually speaking, different from what happened before. But the difference is not one between being a perceptual experience and not being a perceptual experience. Rather, the difference in play here is analogous to the difference between running a race without having crossed the arrival line (which is compatible with maybe never getting to this point) and crossing the arrival line. Trying to see who is there is already, at each instant, as much of a seeing as aiming to run to the arrival line is already, at each instant, running. What makes crossing the arrival line particular is 'only' that it makes the whole run a success. Similarly, what makes the experience of recognition different from whole process of 'trying to recognize' is 'only' that it makes the latter praiseworthy.

As mentioned above, there is, however, a second account of cases like the 'radarsearch' that is apparently available to a passive conception of perception. The ability to discriminate a book on a shelf, without precise identification of the others, seems to involve some cognitive control on the experience. But the proponent of passivity may simply dismiss the request to account for this experience. It may be true, one would argue, that the observer actively contributes to the content of his or her perception and that this contribution has a cognitive dimension. But the result is that she doesn't see the books clearly, she only sees blurred objects. It is not a case of perceiving how things are, not a case of *objective* content. And this is not the sort of experience that the conception of

perceptual experience as passive reception needs to account for since passivity is meant to ensure objectivity.

This proposal requires a particular conception of the norms of evaluation of the content of perception, to rule it as defective, that is, non-objective. That the content of my experience is objective means, to use McDowell's formulation, that 'when I am not misled', I am perceiving what is there, in the world, or certain aspects of it. But we have to keep in mind that objectivity, in the context of McDowell's own enterprise, is not to be accounted for from a 'sideways' perspective (a perspective that is not the perceiver's own). McDowell's project is to answer the *perceiver*'s worry as to the objectivity of her perceptual experience, not the worry of someone who could compare the perceiver's content of experience to something else.

But there is a more fundamental problem with a account of perception that precludes the involvement of cognitive activity. It is that, most often, not only does cognitive activity appear to be compatible with our perceptual grasp of the world but it appears as an instrument of enhancement of our perception of the world, and sometimes even as the condition of possibility of faithful perception, rather than passivity.

Simply consider a specialist examining a wall for signs of fragility. Little by little, she begins to see, here and there, black traces, cracks, stains etc. It is a process which requires some cognitive activity: one has to sustain an intent and oriented focus, one has to keep in mind what one is looking for, and to entertain the global image that develops in the course of the observation. The content of perception becomes if anything richer, more realistic.

Active thinking doesn't take the observer away from the world; if anything, it takes her closer. An illustrated argument of this point is offered by Iris Murdoch in "The Idea of Perfection" (2001, 1–45) where she introduces a character M, a mother, who thinks of her daughter in law, D, that she is "lacking in dignity and refinement", "sometimes positively rude", "always tiresomely juvenile". Time passes and M settles down with this fixed picture of D. But at some point, thinking that she herself may be prejudiced, snobbish, M decides "to look again". Her vision, the content of her perception, little by little, is transformed: D is finally seen as "not vulgar but refreshingly simple, not undignified but

spontaneous, not noisy but gay, not tiresomely juvenile but delightfully youthful, and so on".

What made the change possible, Murdoch argues, is that M has worked at seeing D differently, and this activity directed at looking attentively, and changing the way one sees things is, for her, a case of "moral activity". No doubt that active, responsible thinking is part of this activity, it is a condition of possibility of it as moral activity. But her responsibility doesn't introduce a gap between the way things appear to M and the way things are. She is describing one's working at seeing the world one is living in (Dunphy 2003, 145–163). It is in the progressive attempt to see a particular object clearly that she thinks we exercise our responsible freedom, a process that is infinitely perfectible and carries with it a necessary fallibility.

One may rightly wonder whether we are still speaking about the same thing here. Even granted that striving to see a person correctly is relevant to moral evaluation, what does it have to do with the objectivity of the content of experience in seeing *things*, in 'getting in touch with world'? The responsibility pointed out by Murdoch need not pertain solely to a moral dimension. Think of someone looking at the sky after she read a book about constellations, and trying to discern a certain constellation. "Many a night have I been practicing to see", Herschel relates, "and it would be strange if one did not acquire a certain dexterity by such constant practice." ³ But one certainly does not find oneself saddled with perception of the constellation. Granted, it is passively that the observer sees the stars. But as she is working at seeing something else, she will recall what she saw in the book, focuses on a certain part of the sky, trying to recognize and select the right stars, so as to relate them into a new object.

Working at seeing the particular arrangement of the stars that constitutes the constellation, involves active thinking in remembering, selecting, relating: "To pay attention is not merely further to elucidate pre-existing data, it is to bring about a new articulation of them by taking them as figures..." (Merleau-Ponty 1962, 29) Eventually, looking up at the heavens she will simply see this constellation, being then, one may say, saddled with content. But that should not obliterate her responsibility for that content. Were she a student, she could certainly be praised or blamed for her success or failure.

The domain of application of the passive conception of perception is too limited to encompass the whole scope of our perceptual life. It has to be complemented by a domain where the perceiver is cognitively involved in perceiving and thereby cognitively responsible for the content of her experience. In this domain, perception needs to be conceived of as participatory in that the perceiver participates in it through the cognitive control she exerts. But what is the relation between these two domains? Discerning progressively a constellation cannot be accomplished without first perceiving the stars, so these two domains cannot be understood as separate. The example even suggests a form of dependence of participatory perceptual experience on passive experience with passive perceptual experience being more fundamental, with a somehow simpler content. On the other hand, if passive perception of the constellation is eventually possible, participatory experience is a condition of this possibility. Drawing on an analogy between measuring and experiencing, I will propose a diachronic rather than hierarchical understanding of the relation between passive and participatory forms of perception.

Some experimental set-ups can be seen as making passive measurements, measurements of objects existing in nature (Harré 2003, 32). But measuring is a matter of passive reception only at a certain advanced stage of inquiry: "Where experiments are interpreted as conveying unarguable lessons about the contents of Nature, this indicates that a controversy has already reached a stage of provisional closure. (...) This closure makes instruments into what are seen as uncontestable transmitters of messages from nature, that is, it makes them transparent." (Schaffer 1989, 68) The moment where one can read the outcome of an instrument as resulting from a passive reception is the provisional achievement of a difficult and controversial process. It is a process which requires cognitive involvement on the part of the 'measurers' with respect to what the relevant data are, how to tune the instruments, how to treat the data they provide and, yet, counts already as measurement activity.

Take a thermometer: nothing, it seems, is more passive than a thermometer, nothing more accessible than a thermal state. But the historical description Ernst Mach, or more recently Hasok Chang (2004), give of the achievement of a thermometer quickly belies this

impression. The practice of thermometry only achieved coherence and stabilization through a laborious process trying to articulate theoretical, instrumental, empirical constraints and involving conventional decisions. The passivity of the measurement of temperature was not a given. The whole history of thermometry can be read as a dynamical, interactive process *aiming at* the achievement of a passive measurement. An instrument appears to extract information from nature only when we have been able to encapsulate, into the material form of the instrument, two kinds of 'knowledge': a working knowledge, which is a matter of control over material agency, and a 'model knowledge' which involves the selection and transformation of a signal into a measurement (cf. Baird 2003, 50). Passivity is not a more fundamental form of measuring activity, it is an achievement. But it is not less fundamental either, for the process directed towards the stabilization of a measurement built on other measurements (e.g. of length or volume) which qualify as passive. What emerges then, rather than a hierarchical picture, is a diachronic understanding of the relation between two forms of measuring activity.

Regarding experience now, the analogy with measurement suggests understanding passive experience, where we are saddled with content, as an achievement, possibly provisional, of a participatory perceptual process, rather than a mere starting point. This process is like a ladder that is finally left behind in the same way that, once we have an instrument making what we consider, currently, as (passive) measurements, we are oblivious to the instrumental process which led to this instrument. And as passive forms of measurement are invested and relied on in processes of stabilization of new measurements, passive forms of perceptual experience are invested and relied on in processes of participatory perceptual experience.

3. Addressing Objectivity: Externality and Rational Constraint

A more comprehensive account of our perceptual activity will not reject the conception of perceptual experience as passive, but locate it in a larger scheme that incorporates a dynamical, reciprocal relation between passive experience and participatory experience. This modification cannot, however, be the only qualification to the conception of perception as passive.

For the lack of control over the operation of conceptual capacities that characterizes passivity, in McDowell's conception of experience, is not exhausted by the idea of a mere reception. It involves also a condition of *non-endorsement* of the content one is saddled with. The problem with this condition arises from the tension in the double requirement that the content of experience be external to the domain of our beliefs, in that it is not endorsed, and also rationally constraining with respect to empirical thinking. The second qualification to the conception of perception as passive will be to release this condition.

The 'external constraint constraint' appears in McDowell's transcendental inquiry as a condition of possibility of empirical thinking. To simply make sense of the idea of empirical thinking as thinking answerable to the world, we must make sense of the idea of a "world's verdict" to which our empirical thinking is answerable, this 'world's verdict', in the perspective of the 'minimal empiricism' advocated by McDowell, can only be delivered by the 'tribunal of experience' (McDowell 1995, 231). If our thinking is to be directed at the world, it must be possible to appeal to experience for its justification. What is required for the answerability to experience to be possibly an answerability to the world? What we appeal to as a justification must stand, according to McDowell, outside the sphere of active, spontaneous, responsible, thinking: "there must be a rational constraint on thought from outside it, so as to ensure a proper acknowledgement of the independence of reality." (1996, 28)

In experience "one takes in, for instance, sees that things are thus and so" and that is "the sort of thing one can also, for instance judge" (1996, 9), that is, endorse, or reject. This judging is additional to being saddled with content. The content of experience is a mere impression of the world on our 'receptive capacities' in the sense that this content of experience is pre-judgmental. In this picture, justification by experience is justification by the content of experience, and the content of experience is not the content of a judgment, or a belief.

I will argue that, while the appeal to experience does play a justificatory function with respect to empirical judgment, what fulfills this function is not a non-endorsed content of experience. The argument will go as follows: 1) if the justification of empirical beliefs by experience is a justification by the content of experience, this content must be the content

of belief, at least in the minimal sense that it is endorsed; ultimately it will be an observational belief; 2) when it comes to the justification of observational belief, the justification by experience is a justification, not by the content, but by the *conditions* of experience and their reliability.

How does experience justify a judgment? McDowell makes it clear that the relation of justification is a rational relation, a relation within the space of concepts. He doesn't dwell much, in *Mind and World*, on making explicit the idea of 'rational relation', but the examples he mentions, 'relations such as *implication* or *probabilification*..." (1996, 7, italics mine) may suggest an inferential structure.⁴ But, as noted by Kathrin Glüer (2004, 246), an inferential relation between two propositions is, by itself, not enough for the former to be a reason for the latter, unless the proposition in question is held true, endorsed. That is precisely what McDowell's passive conception of perception precludes when it says that the content of perception is external to the domain of our beliefs (cf. Stroud 2002). So how can the content of perception have a justificatory function?

McDowell, maybe surprisingly, admits that if the justification of a proposition takes the form of an inferential relation, the justifier must belong within the domain of our beliefs:

"No doubt it does not make sense to suppose one might avail oneself of such an entitlement, in moving inferentially to beliefs whose contents are consequences of the claim that things are as one perceives them to be, unless one believes that one's experience is indeed a case of perceiving things to be a certain way..." (McDowell 2004, 215)

But he denies that this can be an objection to his conception. For the judgments that are inferentially justified are judgments that are not *immediately* perceptual. In the case of immediate perceptual judgment, i.e. observational judgments, if the rational relation between the content of experience and the judgment were inferential it could only be of the "stuttering form, 'P; so P" (*ibid.*, 405). For, on the one hand, the content of experience would have to be endorsed to be justificatory, and on the other hand, the content of the justified observational judgment would have to be the content of the same experience. The

mistake made by his critics was, according to McDowell, to be oblivious to the particularity of observational judgments and to identify 'rational' with inferential:

"[T]he concept of inference... is not central for me ... In the conceptual activity I am mainly concerned with, that of making observational judgments, what matters is the rationality exemplified in judging whether things are thus and so in the light of whether things are (observably) thus and so." (McDowell 1998, 405)

There must then be another form of rational relation of justification that observational judgments bear to the perceptual content meant to justify them. What can that be?

If McDowell wants to conceive of justification as a relation between contentful items, that is, as requiring a "content-sensitive justifier", and if this relation cannot be inferential, it must be, according to Crispin Wright (1998, 400), that McDowell endorses a 'quasi-inferential' conception of justification. This quasi-inferential relation of justification would have the same structure as an inferential one, that is, a relation between two contentful, and in effect conceptual, items, except that the justifier of the belief would not itself be a belief. McDowell rejects Wright's diagnosis and traces it, aptly or not, to what he takes to be Wright's mistaken understanding of the content of experience as "a quasi-inferential intermediary between facts and judgments" (McDowell 1998, 430). McDowell finds "obvious that the idea of observational judgment, in particular, involves a specific, content-sensitive justifier" and contends that this justifier is the fact observed itself. Unfortunately, he doesn't elaborate on that point; it simply strikes him "as obvious enough that observational judgments have specific, content-sensitive justifiers – apart, as I say, from philosophically generated distortions – for the thought to stand on its own feet" (1998, 430).

Admittedly the notion of quasi-inference, in that case, was not particularly illuminating. It put a name on the claim that there would be something like a content of experience that would, without being endorsed, be the justifier of a judgment having the same content. It doesn't help us to see how that could be. So neither inference nor quasi-inference connects the content of perception to the content of the observational judgment.

But to say that the former is simply a fact in the world doesn't make it less puzzling. For a fact to play the role of a justifier, doesn't it have to be recognized, if only implicitly, *as a fact*? Not if one adopts a 'sideways' perspective on the justification of perceptual beliefs -- there may well be a justifier accessible from a standpoint that the perceiver is not aware of. But again, that is not the perspective McDowell purports to be exploring. From the standpoint of the perceiver, how could a fact that is not recognized as such be rationally constraining?

Suppose I make the observational claim that the temperature indicated by the thermometer is 70° and, realizing how surprising it is given how I feel, I asked myself whether I am really entitled to this belief. Of course, *if* it is a fact... but this is precisely what I am wondering... Let's admit with McDowell that there is no need of an intermediary between facts and judgments and that observational judgments can be justified by appealing to experience. This appeal, however, cannot be an appeal to the fact stated by the judgment since what is in question is precisely the factual status of the judgment (cf. Chen 2006, 252). Again the analogy between perceiving and experimentation may be helpful.⁵ Think about what Pascal (1648) did to justify the observational assertion to the effect that atmospheric pressure varies with altitude. Presumably what any scientist would still do in order to justify an observational assertion: describe, precisely, *how* it has been possible to observe it, which instruments were used and how the conditions to use them were prepared. They do not point to *something*; they point to a procedure.

Just as McDowell needed to avert falling back into the myth of the given, so in the philosophy of science there is an eminent danger to avoid: it is all too easy to be bewitched by an image of the world as an external constraint on scientific thinking. Especially outside the pragmatist traditions, such an external constraint may seem necessary to guarantee the objectivity of scientific knowledge and to understand the difficulty of scientific practice. There is something to this, but just as for McDowell "outside our thinking" does not mean "outside what is thinkable" (1996, 28), so "external to scientific activity" does not necessarily mean external to 'the cultural space' in which the scientists are working (Galison, 1987).

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If that distinction is ignored, the external constraint is still regarded as a sort of Given, at least in the sense of being prior to and independent of what happens during experimental activity. On that view, the various difficulties to stabilize experimental outcomes have a common source fixed and defined right from the beginning. But this is a *retrospective* point of view, which projects into the past the current acknowledgment of what counts as an external constraint. This point of view debars one from apprehending the situation from which scientific knowledge emerges, which is the analog, in philosophy of perception, to the situation of the perceiver. To adopt a situated standpoint requires us to consider the difficulties as they arise, in context of practice shaped by what the scientists know, what they did and do, what they aim at, and how (cf. e.g., Pickering 1995a; Rouse 1996, 2002). To see the difficulty in acquiring empirical knowledge in this light is not to deny objectivity, nor to deny that scientists have to struggle to overcome these difficulties, and to do so in the 'right' way. It is precisely to be faithful to this endeavor, to the skills and the choices that are involved in scientific activity that encounter with the world should better be thought of in terms of resistances which are "situated with respect to particular projects, models, and extensions of models" (Pickering 1995b, 52). Resistances, in contrast to constraints, are not pre-defined, they emerge along the way to knowledge – which means that they are not external to what the scientists do or think, to their practice and the models they develop.

A similar alternative is possible for understanding experience.⁶ Firstly, to have a definite content of perceptual experience is the result of an experiential enterprise, which, like experimental activity, may encounter resistances, resistances always embedded in a context, of aims and resources, and emerging in the dynamics of experience. This is where the externality of the world resides: not in the givenness of the content of experience, but in the difficulty of achieving a definite and reliable content of experience. Secondly, the appeal to experience in order to justify an observational assertion consists in an answer to a 'how-question', "How do you know?" or "How did you come to this belief?" An answer to a 'how-question' appeals to a means. When a person's 'I see that p' entitles her to assert that p, it is not by pointing to 'p' as a not-endorsed contentful item; it is by pointing to 'see' as a reliable way to know that p. Most of the time, we have no reason to doubt that

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what we see, when we look, is how things are. If we doubt, what we do is to start examining the conditions in which this seeing occurred. This is where the normative constraint on perception lies: in the conformity of the conditions of experience to norms of reliability. "That experience is passive", McDowell (1996, 10) writes, "satisfies the craving for a limit to freedom that underlies the Myth of the Given". He is right to attempt to provide an alternative to naïve myth, but in practice this craving is to be satisfied by normative constraints of reliability for the conditions of experience.

4. Conclusion

A large domain of our perceptual life cannot be understood in terms of passivity of experience, as being saddled with content. The conception of perceptual experience as passive reception has to be qualified by introducing the notion of 'participatory experience'. Participatory experience is a form of perceptual experience where, by contrast with passive experience, the cognitive activity of the subject participates in the constitution of perceptual content. The relation between these two forms of experience should be understood as diachronic.

In addition to being saddled with content, McDowell characterizes passivity by a nonendorsement of the content that is received. But this non-endorsement cannot be reconciled with the function assigned to this content as a rational constraint on empirical thinking. To serve as a justification for empirical thinking, the content of experience must be the content of perceptual beliefs. When it comes to justifying these perceptual beliefs we must turn to the conditions of perceptual experience, that is, the conditions in which the perceptual belief is formed, and appeal to their reliability. The justification of any observational judgment on the basis of experience follows the pattern of accounting for the warrant of an experimental finding on the basis of the experimental procedures followed.

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NOTES

1. McDowell's philosophy is neo-pragmatist, but his account of 'empirical thinking' is not oriented to practice to the extent we see in classic pragmatism; compare Peirce's "[A]nything is, for the purposes of logic, to be classed under the species of perception wherein a positive qualitative content is forced upon one's acknowledgement without any reason or pretension to reason. There will be a wider genus of things partaking of the character of perception, if there be any matter of cognition which exerts force upon us" -- quoted and discussed by Cheryl Misak in Shook and Margolis (2006: 404–405).

2. Conceiving of experience as a passive exercise of concepts "amounts not to a rejection of the Given as such, but a recasting of it. [...] In rejecting the Myth of the Given, McDowell intends to reject a mythology about *what* is given, and how, but not the very idea that anything is." (Wright 1998, 397)

3. Letter to Sir William Watson (1782), in Lubbock (1933, 101).

4. This is undoubtedly how Robert Brandom (1995, 246) thinks of it: "The contents of concepts are articulated by the inferential relations among them in virtue of which one judgment can serve as a reason for or against another" (cf. also Brandom 1998, 370).

5. For how cognitive activity is involved in experimentation and modeling see further Peschard 2007.

6. Compare Pickering's terminology and his conception of constraints with Peirce's discussion (1932, 1, 324) of action and perception with its emphasis on the *resistances* encountered in experience.

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