

A new kind of relativity: Compensated delays as phenomenal blind spots



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ABSTRACT

The French phenomenologist Merleau-Ponty identified the human body as the blind spot of perception and cognition. Being situated in its environment both spatially and temporally, the body forms a primordial field of presence, which is transparent from the observer's¹ perspective and therefore creates a systemic blindness. This paper is primarily concerned with what Merleau-Ponty calls the pulse of the duration of the body, which, in his view, "impregnates" our perception.

This notion of duration will be described in terms of the temporal extensions of an embodied observer. For biological systems, these extensions may be measured in the observer's temporal endosphere, a time cone, which extends in two dimensions: succession and simultaneity (Δt_{length} and Δt_{depth} , respectively). Observers are described not as *having*, but *being* a model of the world (including themselves).

The perception of Δt_{length} and Δt_{depth} results in a fractal temporal structure, which correlates with successive and instantaneous perception. This temporal structure becomes important during temporal recalibration, i.e. delay compensation. During such processes, the distribution of the temporal dimensions succession and simultaneity may vary from one observer's Now to another's. Furthermore, recalibration provides a window in which the observer's Now may be tipped towards either temporal dimension.

We can measure the difference between observer A's temporal extension and that of observer B in Δt_{length} and Δt_{depth} . The complexity of an observer's temporal perspective – his temporal interface – can thus be compared and quantified by the size of his time cone. The units of this measurement are the number of compensated and uncompensated delays. During temporal recalibration, an observer can turn succession into simultaneity and vice-versa. Moreover, what is successive in observer A's Now may be simultaneous for observer B and vice-versa. This discrepancy can be modelled as time cones which display a new kind of ($\Delta t_{\text{length}} - \Delta t_{\text{depth}}$) relativity. This new kind of relativity arises from the observers' inability to spot the systemic blindness that manifests itself in anticipated, i.e. compensated, delays.

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1. Introduction: extensions and blind spots

The notion of an extended Now is not new. Neither is the idea of a perceptual and cognitive blind spot. We are drawing on a long philosophical tradition and a full review would exceed the scope of this paper. The concept presented here is that of an extended temporal perspective with a fractal structure and blind spots which result from transparent interfaces within the Now. It builds on and further develops a model presented in this journal in 2013 (Vrobel, 2013).

My fractal model of the Now was inspired by the work of two phenomenologists, Maurice Merleau-Ponty and Edmund Husserl. Both described a Now which is not a point-like boundary separating the past from the future, but an extended temporal perspective which displays depth. My model is also built upon concepts defined more recently: Benoit Mandelbrot's fractals, Robert Rosen's and Daniel Dubois' anticipative systems and Otto Rössler's endophysics. The model also draws upon a number of experiments on temporal recalibration and embodied cognition.

Where to start? The leitmotif of this paper is a temporal perspective which displays depth and a systemic blind spot – both constituents of Merleau-Ponty's phenomenological description of the Now (Merleau-Ponty, 2012/1945). Therefore, the Merleau-

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¹ observer = observer-participant (Vrobel, 2014).

Pontean temporal perspective provides a convenient starting point.

The French phenomenologist surmounted the Cartesian Cut by focussing on the situatedness of our body in our spatial and temporal environment: Both subject and object are reconciled in bodily existence. Because our body, our perceptual apparatus, is immersed in time and space, it necessarily forms a blind spot, as our perspective is inextricably tied to our temporal and spatial position. Merleau-Ponty also dismissed the point-like Now of Einstein's special theory of relativity, replacing it with an extended presence in which both spatial and temporal events around us are "eclipsed" by the very fact that we take up a position in space and time. And as this position perpetually changes, so do the blind spots which eclipse parts of the world. And as we are not aware of this constraint, we find ourselves unable to escape from our *conditio humana*. It is this Merleau-Pontean blind spot which we shall later draw upon when we explore the effects of delay compensation on the Now.

The Merleau-Pontean perspective is situated and embodied. And it is the human body which acts as the blind spot of perception, by imbuing its environment with its own orientation and rhythm. Merleau-Ponty expresses it this way:

"The presence and absence of external objects are only variations within a field of primordial presence, a perceptual domain over which my body exercises power. (...) If objects may never show me more than one of their facets, this is because I am myself in a certain place from which I see them and which I cannot see. If nevertheless I believe in the existence of their hidden sides and equally in a world which embraces them all and co-exists with them, I do so in so far as my body, always present for me, and yet involved with them in so many objective relationships, sustains their co-existence with it and communicates to them all the pulse of its duration."²

If we follow Merleau-Ponty and state that a human being "impregnates" his environment, we need to define our object of study more closely. Where is the boundary between the obserpant and the rest of the world? Or, to put it more concretely: Does the obserpant include parts of his environment, such as the microbes on his epidermis or a VR suit? Are the temporal complexity of those microbes or the temporal delays caused by VR suits to be taken into account when we define our object of study?

If we intend to discuss the temporal complexity of an obserpant, we first need to define this unit we call an obserpant. Gregory Bateson's notion of a *unit of survival* is a useful one, as it addresses both internal and external complexity:

"The flexible environment must also be included along with the flexible organism because (...) the organism which destroys its environment destroys itself. The unit of survival is a flexible organism-in-its-environment."

(Bateson, 1972).

The obserpant embedded in his flexible environment will most likely find that the external world has a higher degree of complexity than the obserpant himself, as it contains more options than the obserpant can anticipate. If this is the case, and the degree of internal complexity does not match that of external complexity, the embedded obserpant will attempt to reduce the complexity of his environment. This may be achieved through symbol systems

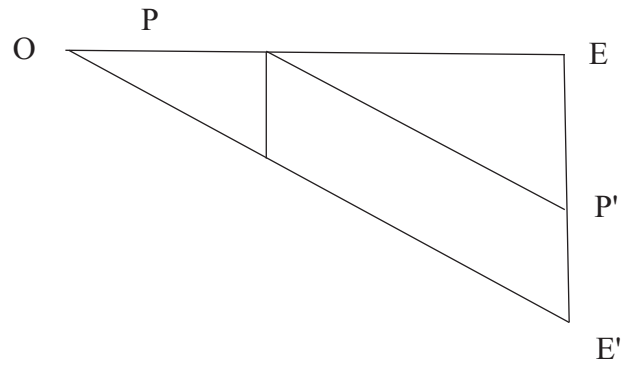


Fig. 1. OE: a series of Nows; OE': sinking into the past; EE': continuum of phases (a Now with the horizon of the past); P: a Now; P': retention of P.²

(Luhmann, 2000) or embodied complexity reduction by means of delay compensation (cf., for example, Eagleman, 2009; Noë, 2004; Clark, 2008). Both strategies reduce complexity differences between inside and outside the obserpant. Both are transparent to the obserpant, as he is not aware of any compensatory activity. Later in this paper, I shall introduce a model for such embodied complexity reduction in the form of temporal recalibration.

2. The temporal dimensions of the now: fractal time

The idea that the Now is not simply a point that separates the past from the future, but has a structured extension, was also brought forward by the German phenomenologist Edmund Husserl (Husserl 2000/1928). He questioned why, when we listen to a piece of music, we are able to hear a tune, rather than a succession of uncorrelated notes. He argues that this is possible only because we integrate the notes we have just heard and which still linger on (retention), as well as the notes we anticipate (protention), in our consciousness of the present. This integration of retentions and protentions generates a series of nested and overlapping Nows. Although Husserl spoke about Now-points (*Jetztpunkte*), he assigned an extension to the Now as the consciousness of the present by fitting it with an internal structure. This structure consists of overlapping and nested past, present and future Nows. In each Now, there are retentions of past Nows, which manifest themselves in a modified way in the consciousness of the present. As they continue to sink into the past, each successive Now adumbrates the preceding one (see Fig. 1).

Likewise, protentions contain adumbrations of the past and the present (see Fig. 2). The resulting pattern displays a nested structure, in which every new Now hosts an entire series of nested retentions and protentions of the preceding Nows.

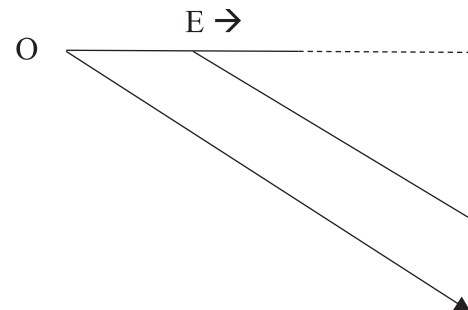


Fig. 2. E → : a series of possible, different Nows (The dotted line depicts protentions).³

² Merleau-Ponty (2012)/1945, p. 95.

³ After Husserl (1980)/1928, p. 389.

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