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# Kant On Temporal Extension: Embodied, Indexical Idealism

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**Abstract:** I defend what I take to be a genuinely Kantian view on temporal extension: time is not an object but a human horizon of concrete particulars. As such, time depends on the existence of embodied human subjects. It does not, however, depend on those subjects determined as spatial objects. Starting with a realist notion of “apperception” as applied to indexical space (1), I proceed with the need for external criteria of temporal duration (2). In accordance with Kant’s Second Analogy of Experience, these criteria are found in concepts and laws of motion and change (3). I then see what follows from this for a reasonable notion of transcendental idealism (4). Finally, in support of my Kantian conclusions, I argue for the transcendently subjective nature of *particular* temporal extension (5).

**Keywords:** Transcendental idealism, Temporal extension, Change, Concrete particulars

## 1

In talking about space and time, Kant usually speaks about just that: “space” and “time”, without further qualification. Even though he repeatedly describes them as the way the sensory world appears to a human being, to my knowledge he nowhere limits his endeavour to a characterization of “phenomenological” or “epistemic” space and time. So, he does not suggest a division of labour between his own enterprise and the space-time physics of Leibniz and Newton. They just have wrong theories of “space” and “time”, he claims. He does not, however, offer an alternative view on physics either. Then what exactly is he aiming at?

As far as I can tell, his project is an *ontological* one, albeit certainly not in the modern Carnap and Quinean fashion of proposing theories about what exists in the world. Rather, it is about *truth*: about formal traits of judgements and theories about what exists. In particular, it is about the horizons of space and time as forms of intuition extending indefinitely beyond the human body, thus enabling

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reference to external, empirical objects. The individuating conditions of things and events are then determined by their locations within three static, spatial dimensions and one dynamic, temporal dimension. According to transcendental idealism, this also means that only within the horizon of human experience are external objects endowed with the property of some definite, particular extension.

Leibniz and Newton, on the other hand, studied space and time not as horizons but as objects of empirical theorizing, thus, in Kant's view, erroneously taking the world of appearance to be a "thing in itself". This claim would make no sense if they were simply talking about different things, e. g., external versus "inner", phenomenological space and time. It makes perfectly good sense if they were talking about the same properties of the world, however, and so it is with the claim about particular extension: it cannot properly be ascribed to external things beyond the horizon of human experience but may very well be conferred on the same things by this horizon. In that way, there may be real disagreement between Kant and his most prominent predecessors about space and time as objects versus horizons of experience.

Next, talking about horizons of theoretical truth, our starting point must be Kant's notion of judgement or conscious statements of putative facts, as encapsulated in his principle of transcendental *apperception*. This concept is often held to express a representationalist view of human consciousness: as permanently accompanied by a possible "I think", any given, internal or external sensation is subject to some rational representation of a conscious self. According to this view on the relationship between mind and world, human access to external objects is mediated by formal, sensible and rational representations.

By contrast, there is an alternative interpretation to the effect that what seems to be a subjective or purely mental "I think" is part and parcel of the objective content of some *judgement* – about empirical or logical truth, in which case a reflexive "I think" is contained in any truth. According to this view, we know *what to think* because we know *how things are*, and *vice versa*. Subjective and objective factors of judgement simply cannot be separated from one another, a point neatly captured by the so-called Moore paradox: "It is raining but I do not believe that it is". For example, in wondering what to believe about the weather, perhaps I look out the window, and seeing the rain pouring down I know what I believe. In turning my attention exclusively to my own belief, neither would I know anything about the weather, nor would I know anything about my belief.<sup>1</sup>

Put otherwise, the general features of thought and understanding are identical to formal properties of the external world, and when considering how things

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1 Cf. Wyller 2001, 284.

are in the world, we deal with *receptive* sensations of things in space as supplying the external “stuff” of cognition. Furthermore, as pointed out by Kant on several occasions, this cognition involves embodied, *indexical* knowledge about objects located as so-and-so far from us in particular directions. In his pre-critical work *Von dem ersten Grunde des Unterschiedes der Gegenden im Raume* from 1768, it is clearly stated that precisely in order to know which objects exist independently of us as embodied beings, we must know their relations to our bodies, i. e. as located along the three virtual axes of left/right, up/down and in-front/behind:

Da wir alles, was außer uns ist, durch die Sinnen nur in so fern kennen, als es in Beziehung auf uns selbst steht, so ist kein Wunder, daß wir von dem Verhältniß dieser Durchschnittsflächen zu unserem Körper den ersten Grund hernehmen, den Begriff der Gegenden im Raume zu erzeugen.<sup>2</sup>

The same point is made in later writings, not least about “incongruent counterparts” as an argument for transcendental idealism. In Kant’s first *Critique*, it is also echoed at the outset of the Transcendental Aesthetics’ first “Argument of Space”. What I have in mind is the following passage:

Denn damit gewisse Empfindungen auf etwas außer mir bezogen werden (d. i. auf etwas in einem andern Orte des Raumes, als darin ich mich befinde), [...] dazu muß die Vorstellung des Raumes schon zum Grunde liegen. Demnach kann die Vorstellung des Raumes nicht aus den Verhältnissen der äußern Erscheinung durch Erfahrung erborgt sein, sondern diese äußere Erfahrung ist selbst nur durch gedachte Vorstellung allererst möglich.<sup>3</sup>

Even though there is no explicit mention of indexical distinctions, the formulation obviously accords with the position formulated in 1768. In both passages, what grounds empirical realism is not primarily the independence of external objects from subjective mental states but their independence from other objects, *in particular* from our own bodies.<sup>4</sup> Spatially, they are in “another place” than where we are located. Still, we reach out to them in cognition, through the geometrical “axes” referred to in 1768 and through the later notion of intentional, productive imagination. To this Kant adds that not only the form but also the perceptual content of spatial objects is within the cognitive boundaries of the human mind: “Folglich steht alle Synthesis, wodurch selbst Wahrnehmung möglich wird, unter den Kategorien [...]”.<sup>5</sup>

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<sup>2</sup> GUGR, AA 02: 379f.

<sup>3</sup> KrV, B 38; AA 03: 52.

<sup>4</sup> See also KrV, B 44.

<sup>5</sup> KrV, B 161; AA 03: 125.

The intellectual “ordering” of sensation seems to have been a recurring theme of Kant’s philosophical efforts during the 1770s,<sup>6</sup> culminating in the *Critique’s* Principles of Experience. Take the category of quantity, as concretized or “schematized” in the perception of an external object like a lake. Usually, I do understand what I see, i. e. an individual lake located as one among the many numerically different parts of extended space, something that would not be possible without the concept of quantity. So about space, Kant may reasonably claim that “Erfahrung ist eine verstandene Wahrnehmung”.<sup>7</sup> What, then, about the temporal analogies of experience? How do they contribute to determining the perception of an objective time sequence?

## 2

According to a general understanding of empirical realism as pertaining to items of external space, the objectivity of an observed time sequence cannot consist in a corresponding ordering of subjective, mental states. It must consist in *external perceptual criteria* distinguishing temporal from spatial objectivity. This does not amount to a spatialization of time; on the contrary, instead of shifting the attention from external, spatial, to inner, temporal *objects*, it rests on a specific, qualitative difference between spatial and temporal phenomena.<sup>8</sup>

What, then, are the characteristics of an external time sequence? I take this to be the question answered by Kant’s reference to the difference between the objective passage of time displayed by a ship sailing downstream and the subjective passage represented by successive perceptions of simultaneous parts of a house. Let me focus on two features of the objective order: its having no concrete extension of its own, and its being “dynamic”.

The first feature is perhaps most readily recognizable in the First Analogy. Since the experienced difference between different parts of extended space yields no objective time difference, Kant seems to claim, the difference must consist in different stages of one and the same part of the external world. That is, the difference (*Wechsel*) between earlier and later is a difference corresponding to the objective perceptual change (*Veränderung*) of properties for one and the same substance or thing.<sup>9</sup> So, obviously, the extension of the change is different from

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<sup>6</sup> As is well accounted for in Carl 1989.

<sup>7</sup> R 4679, Refl, AA 17: 662.

<sup>8</sup> Cf. Wyller 2001, 289f.

<sup>9</sup> Whereby the *perception* of substantial change is taken for granted: KrV, A 188.

spatial extension. But is there such a thing as a purely temporal extension? It seems not, since due to the incessant disappearance of the experienced present into the past, we are unable to imagine or intuit a time extending beyond a point.

Inspired by Gerold Prauss, Cord Friebe speaks of time as “extended in a point”, however.<sup>10</sup> I find this an intriguing notion, worthy of closer attention. On the one hand, it seems to capture an important truth. Take my drawing a line on the blackboard. The result is a line of chalk extended in space but with no visible temporality. Only during my action of drawing it is there a perceived time sequence, instantly becoming lost at each and every moment of its proceeding. On the other hand, I believe one does not have to conclude from this that *presentism* is the only viable alternative to spatializing time.<sup>11</sup> At any rate, the reality of John McTaggart’s A-series of present, past and future may also contribute to making good sense of a temporal “extension in a point”.

I know of no better starting point for reflecting on these matters than St. Augustine’s treatment of temporal extension in Book 11 of his *Confessions*.<sup>12</sup> The three modes of time are present, past and future, Augustine says, and without them time shrinks to an extensionless point.<sup>13</sup> But past and future have no reality, he further claims, thus seemingly embracing presentism, and in a first step he concludes by what may properly be called temporal nihilism: as reduced to a point, time does not exist. In a second step, time is revitalized, however, as extended to past and future by human memory and expectation. So, there is time after all, but only due to the existence of conscious beings like us. Without us, there would be no temporal extension and, consequently, no time. With us, time has no objective, real extension either, but in virtue of the mental A-series it has an extension-like *duration* characterized by Augustine as *distentio*.<sup>14</sup>

To see how right Augustine is about this, try envisaging temporal extension solely by means of McTaggart’s B-series notions of before, after and simultaneous with. I feel confident that any attempt of yours will be futile and that you will only be able to perceive or intuit items with *spatial* extension. To be sure, one may talk about *abstract* “extensions” of time, just as any mathematical ordering of numbers or things may be said to “extend” beyond a point. But what is at issue here is extension as a *concrete* quality of concrete things, as known from walls, roads and lakes, and as discussed by Descartes, Leibniz, Newton and Kant. Only

<sup>10</sup> Friebe 2012, 114.

<sup>11</sup> At least not in the simple sense that only the present “exists”.

<sup>12</sup> Perhaps nowhere referred to by Kant but certainly not without influence on the familiar “schools” of mediaeval philosophy and German rationalism.

<sup>13</sup> Augustine 1993, XV 20, 12–13.

<sup>14</sup> Augustine 1993, XXVI 33, 20.

in the A-series is there at least a *quasi-extension* or *distentio* – without which any real, concrete time sequence simply collapses to a point.

Such quasi-extension is different from a pure intensity, like the feeling of heat or the sensation of colour. One might perhaps think that an intensive magnitude has some kind of extension too, as one among a multitude of degrees. 40 degrees Celsius would then “contain” within it all possible marks along the heat scale. But that doesn’t seem to be any different from a series of numbers or *possibilia*, and the actual temperature is 40 and only 40 degrees. Other temperatures are excluded, making the assertion that the object is 42 degrees simply false. Therefore, as with the temporal B-series, the only concrete extension is a spatial one. But the A-series is very different. The second, dynamic feature distinguishing it from space is the real duration of a temporal order, involving phases of past and future.

Any concrete temporal extension is more like spatial extension than the pure intensity of a point, a fact that may aptly be captured by the phrase “extension in a point”. But it is also different from spatial extension as an aggregate of equally real parts that cannot in any sense be said to be present in one another in the way that past and future are present in the present. So it is indeed a “quasi-extension”. Crucially, then, it is both different from and similar to spatial extension.

This view on the reality of the past and the future concurs with Kant’s view about change as essentially but only seemingly involving *contradiction*. Apart from the truism that only in time can incompatible properties legitimately be ascribed to a thing, he also, conversely, defines change by means of contradiction:

[...] wenn diese Vorstellung [der Zeit] nicht Anschauung (innere) a priori wäre, kein Begriff, welcher er auch sei, die Möglichkeit einer Veränderung, d. i. einer Verbindung contradictorisch entgegengesetzter Prädikate (z. B. das Sein an einem Orte und das Nichtsein eben desselben Dinges an demselben Orte) in einem und demselben Objecte, begreiflich machen könnte.<sup>15</sup>

The reality of change is here defined by the notion of contradiction, i. e. of ascribing incompatible properties to one and the same thing or substance.<sup>16</sup> Accordingly, I suggest that we take the appearance of contradiction to be at the root of the dynamic, temporal criterion of external change. As space-like, time is like a contradiction. As *quasi-extended*, however, it only yields a quasi-contradiction.<sup>17</sup>

<sup>15</sup> KrV, B 48; AA 03: 59.

<sup>16</sup> Thus, Kant would obviously never be a proponent of a “block universe”, with change accounted for by the ascription of different properties to different parts of reality.

<sup>17</sup> Cf. the old saying “God created time in order to endure contradiction”.

Hence, perceiving what would otherwise be a contradiction means perceiving real temporal change. This also means perception of an “act” or *Handlung*, Kant says in the Second Analogy, and as applied to empirical objects this seems to be an analogy with the more common use of the term, in the Aesthetics and the Transcendental Deduction, about human action.

### 3

N.B. Dass die Zeit durch eine Linie (die doch ein Raum ist) und der Raum durch eine Zeit (eine Stunde Gehens) ausgedrückt wird, ist ein Schematism der Verstandesbegriffe.<sup>18</sup>

Lacking a particular, concrete extension of its own, temporal duration is parasitic upon motion as a spatial process. This is perhaps most obviously so in the distinction between the “moving” succession of perceptions of the parts of a house and of the stages of a river, respectively. But it also seems to be the distinguishing feature of any temporal intuition or perception, like the freezing of a lake. This is made clear in the “General Note on the System of Principles”: since temporal change requires “substance”, and a pure time has just a disappearing non-extension,<sup>19</sup> intuiting “the same” substrate of change would be impossible without retaining it in a space-like fashion. Therefore, understanding change from a given state to an opposed state requires a *pure* intuition of temporal quasi-extension as spatial change, i. e. as a point in *motion*, the duration of which is a line drawn from past to future:

[...] denn um uns nachher selbst innere Veränderung denkbar zu machen, müssen wir die Zeit als die Form des inneren Sinnes figürlich durch eine Linie und die innere Veränderung durch das Ziehen dieser Linie (Bewegung), mithin die successive Existenz unser selbst in verschiedenem Zustande durch äußere Anschauung uns faßlich machen; wovon der eigentliche Grund dieser ist, daß alle Veränderung etwas Beharrliches in der Anschauung voraussetzt, um auch selbst nur als Veränderung wahrgenommen zu werden, im inneren Sinn aber gar keine beharrliche Anschauung angetroffen wird.<sup>20</sup>

Furthermore, concerning *empirical* intuition or perception, this fits well with the view of Sebastian Rödl, who takes Aristotelian *kinesis* as a stand-in for change in general and as the clue to understanding Kant’s Second Analogy.<sup>21</sup> His main line

<sup>18</sup> R 6359, Refl, AA 18: 685f.

<sup>19</sup> KrV, B 291; AA 03: 200.

<sup>20</sup> KrV, B 292; AA 03: 200f.

<sup>21</sup> Rödl 2005.

of interpretation is based on “substantial”, temporal extension beyond the point of both human acts and what happens in the external world. Two cases may serve to illustrate this approach.

I am on my way back home from work one day when I suddenly fall and break my neck, such that I never reach my goal. That does not make the later assertion that I was on my way back home false. I see a billiard ball moving from one part of the table to another when suddenly it gets stuck on someone’s used chewing gum. That does not make the assertion about a momentary position as part of the larger motion false. Even though the whole process was never realized, it was present in each and every part of what has already taken place. Without this kind of presence, there is nothing to distinguish temporal from spatial extension in the external world. With it, we are able to directly perceive objective succession as different from – say – successive perceptions of different parts of a house.

How, then, can the content of an empirical time sequence be wholly present in a part? We may conceive of it in terms of the way in which a *concept* is wholly present in each and every thing falling under it. Or, according to Rödl, in terms of the way in which an Aristotelian substantial *form* is present in particular substances, which he takes to capture Kant’s argument in the Second Analogy. That is, substantial forms are the basis of natural laws, or “rules”, in Kant’s terminology, and perceiving real change as a case of an objective time sequence means understanding it as falling under causal laws.<sup>22</sup>

Following the thrust of Rödl’s interpretation, I prefer “concept” to his “form”, however, as this seems to be in greater conformity with Kant’s general emphasis on the *construction* involved in acts of human understanding. Understanding geometrical, empirical or “pure” concepts means understanding rules of action, he claims, as in constructing a triangle, sketching a dog<sup>23</sup> or drawing a line as a way of visualizing time.<sup>24</sup> If, then, in perceiving what goes on in objective time we rely on conceptualized patterns of change like “walking”, “falling”, “freezing” or “blushing”, this involves understanding rules of action. In any case, the resulting view on objective succession as conditioned on *concepts* of change yields a striking case for regarding time as a Kantian “scheme” mediating between general notions of reason and particular objects in space. *Concepts without extension are the condition of the possibility of particular temporal extension, i. e., of duration.*

Thus, instead of following Augustine in talking about two kinds of objects, physical and mental ones, Kant points to a duality in one and the same embod-

<sup>22</sup> Rödl 2005, 173 ff.

<sup>23</sup> KrV, B 180; AA 03: 135f.

<sup>24</sup> KrV, B 154–156; AA 03: 121–122.



ied, spatial act. In order to intuit time, he says, one has to “attend to the act”<sup>25</sup> of drawing a line in thought. On a first reading this might sound like reference to a purely “inner” mental act. But that would make nonsense of any attempted refutation of idealism. His point must be about the *logic* of thought as involving concepts applying to the external world, the understanding of which is conditioned on embodied agency. Correspondingly, due to his general notion of concepts, “*Handlung*” means a real act of *rule-following*, of spatial “particularization” of general ideas. One may of course understand what an action amounts to without being physically able to perform it. What one so understands is external action, however, and not some inner, mental happening.<sup>26</sup>

## 4

It seems that without understanding, as an aspect of reason, there is no objective time sequence, and so there is no world of appearance extending beyond “inner” temporal states. This presumably means a kind of philosophical idealism. But what leads to the idealism is empirical realism. Such realism, I claimed, does not mean mind-independence but rather independence from the human body as occupying a particular location in space. Instead of substance dualism, there is a duality of roles – with other objects existing independently of me in my role as embodied object but not in my role as embodied subject, i. e. as mind.

Hence, transcendental idealism and empirical realism are inseparably intertwined, realism leading to what may perhaps be called a version of A-series idealism as the only way to discern the difference between temporal and spatial variation among external things.

The B-series of ontologically neutral positions cannot possibly account for the presence of the whole within each part as the distinguishing feature of a temporal process. That would seem just as contradictory as letting one part of space contain other parts of space. But as the different modes of the A-series may have different kinds of reality, no real contradiction need be involved in the past or the future’s being present in presence. Reading Kant may make one realize that

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<sup>25</sup> KrV, B 155; AA 03: 121f.

<sup>26</sup> Cf. the footnote in the “Refutation of Idealism” (B 277) about imagining external objects. Such imagination would not be possible without a prior perception of real, external “stuff”, Kant says. According to the same line of reasoning, figurative imagination of external action will be secondary to the performance of real, external action. On the general importance of embodied action for Kant’s “synthetic a priori”, see Saugstad 1992.

without such presence, one will have a hard time accounting for the difference between time and space.

This version of empirical realism also means the opposite of empirical idealism, viz. the view that the things and events of the external world only exist in or are accessible to ideas or representations of the mind internal to empirical human beings. Rather, even as embodied, the mind *extends* to things outside its particular embodiment in three-dimensional, indexical space. As such, we have *direct perception* of items existing independently of us in our role as an object in space. They just do not exist independently of our role as a perceiving – and thinking – subject.

Even the extended mind entails a version of idealism, however, as man will be a *condition of the world*, a position that seems closely related to the “subjectivity thesis” of Anton Friedrich Koch. According to this thesis, without embodied beings like us existing somewhere in the universe of concrete particulars, there would be no particular/general distinction, and thus no such universe.<sup>27</sup> At least this much seems to follow if the A-series is a condition of temporal extension and if man is a condition of the A-series. One may perhaps still talk about unstructured *ideas* without distinctions between an objective world of particulars and a subjective world of thought. But death will mean the collapse of the world as we know it, as extending beyond a point in time.<sup>28</sup>

Now lest this become too speculative, let me return to the very phenomenon of particular extension. My starting point was Kant’s indexical, demonstrative notion of space as extending in three dimensions beyond the human body. An indexical understanding of the A-series comes naturally too regarding any reference to time as taking place from a particular temporal standpoint. One may still have some doubt about the importance ascribed by Kant to the indexicality of space and time. What seems beyond doubt, however, is the *particular* nature of space and time as forms of intuition.<sup>29</sup> Their non-conceptual nature is a central claim of the Transcendental Aesthetics, a point confirmed in his remarks on the “Amphiboly of the Concepts of Reflection”.

Conceptual descriptions do not suffice for the identification of empirical things, whose criteria of difference are based on their position in non-conceptual space. Things are numerically different if and only if, like two drops of water, they simultaneously exist at different places. This only makes sense as a difference within space and time as particular, non-conceptual forms or horizons of things. Here, Kant takes for granted the old distinction between general concepts and

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<sup>27</sup> Koch 2006.

<sup>28</sup> Cf. Wyller 2019.

<sup>29</sup> On the particular, non-conceptual nature of temporal duration, see Wyller 2016 97 ff.; 125f.

*concrete particulars* of space and time. The same is certainly the case for philosophers inspired by him, like Peter Strawson, Ernst Tugendhat and Gareth Evans, who do not, however, understand their own work as contributions to what may strictly be called transcendental or Kantian philosophy. In the final section, I will try to make a case for transcendental idealism as based on the very same notion of concrete particulars.

## 5

So far, my substantial and interpretative reasoning has been about propositional or theoretical truth: as finite, embodied beings, our only way of referring to a world of concrete particulars is *hic-* and *nunc-*centric, i. e., indexical. But from this it hardly follows that empirical things and events only exist as objects of such reference, one might argue, still leaving open the Kantian tenet that the conditions of experience are identical to the conditions of the objects of experience.

Concerning the indexical nature of particular reference, this possible objection to a full-blooded transcendental conclusion may be put as follows. To humans, *descriptions* of an objective time sequence as, say, equal to X oscillations of the Caesium atom may not suffice for coping with the world. We also need to know that enacting a corresponding way of living takes *that* long. But granting the epistemic or pragmatic points about indexical reference, why accept a corresponding metaphysical claim about the nature of things? Certainly, things exist without being referred to, but then why not simply accept that the world of concrete particulars extends beyond the world of *indexicality*? In this final section, I want to sketch an argument against accepting this.

First, there is the general problem of *making sense* of claims about a world beyond any possible, human way of referring to it. Again, empirical objects certainly exist independently of human beings that are likewise understood as empirical objects. But talking about objects beyond the sphere of human reference to the world is quite another matter. In setting out to do so, we risk moving beyond the bounds of sense, as we cannot step out of our frame of reference and compare it to something more objective. But second, in order to make this reasoning a little more concrete, let us take a closer look at what would be involved in a metaphysical notion of *concrete but non-indexical particulars*.

Following theorists like Strawson, Tugendhat and Evans, I take this to be a question about the relation between so-called subjective and objective localization. Knowing which region of space and time we are talking or thinking about involves objective natural facts of geography, natural history or cosmology, as

well as a subjective-indexical perspective on those facts. So knowing where things are located means combining two kinds of knowledge, it is said, as in “The river behind the third mountain east of Everest is *that far in this direction*”, and in “The events of this report happened *that long ago*”. Such combination is required for us to *keep track of* space and time, an ability without which we could not possibly know objective temporal facts as exemplified in section 2 above.

This undoubtedly captures the basic way of referring to items and parts of space and time, but my problem is with the putative objective matters of fact, as they only involve *conceptual* relations between regions of indexical individuation. For, as particular, they presuppose objective facts about size and distance corresponding to the indexical extension of things and events as having *that* spatial or temporal size. Talking about time, specifically, this means ascribing a non-indexical particular *duration* to what happens in the world. For purely logical-metaphysical reasons, however, this seems impossible, as it contradicts the logic of size determination.

As a quantity, size is a general property of kinds of things, which also involve relations. This we know both from daily life and from science. Units of counting like meters, minutes and seconds are needed, but asking for size as an immanent property of time units makes no sense. As a presupposition of size determination, they have no size of their own but only function as ways of relating what happens to some other happening. A film may be said to last for two hours, or, perhaps when talking to a child, twice as long as it takes to walk around a nearby lake. And what happens in a gravitational field “takes longer” as measured outside the field than as measured within it. In none of these cases would we take duration or temporal size to be a property of an isolated event. But given the general and relational nature of size determination, it seems that the size of temporal extension cannot possibly be particular.

Or consider a simple thought experiment. Peter lives in a basement with a library full of books and computers as his only source of information on the outside world. After twenty years with virtually nothing to do but read, watch films and look at pictures, he is in possession of more scientific truths than any other human being. For simplicity, let us assume that he knows all the descriptive, empirical facts there are about the objects of physics, chemistry, biology and cosmology, their primary and secondary qualities, and laws governing their behaviour. In particular, he knows the relative duration of everything that has ever happened in the physical world.

In the basement, he also knows some *indexical* facts and patterns of behaviour necessary for survival: “*Now I feel hungry, so I’ll open the fridge five steps away over there, and then in a moment’s time there will be food on my plate*”. And he recognizes many descriptions of the physical world, such as the colour of his

bed, the figure of a plate, a mouse running across the floor and the burning of a piece of wood. So, one may take the basement to be a microcosm of the world we all inhabit, involving descriptive and indexical kinds of knowledge as well as their combination.

Still, Peter is ignorant about a basic feature of the outside world. All descriptions are non-indexical, about things existing “somewhere” at “some time”. And as for the processes and events displayed on the computer screen, he does not know the time scale, i. e. the velocity of things happening compared to indexical facts from within the basement. He knows the temporal *relations* between everything in the universe, including his bodily acts. He just does not recognize himself and his temporal experience *as his own* person and experience, so he never thinks “Oh, that being undergoing those changes, that’s *me*, within a process taking *that long*.” His vast body of knowledge does not contain a single personal or temporal indexical identification.<sup>30</sup>

On the one hand, then, he knows everything that can possibly be known in *science*. On the other hand, his knowledge about duration is entirely *general*: This thing going on takes twice the time of that one. That other thing, of course, takes *some* time. But the “some” has no indexical content, and so it is not *particular* either.

Or how could it possibly be? First, knowing all relations between events, Peter knows all their sizes. In particular, he knows all relational facts about duration. But all such facts are general or conceptual. Second, he also knows all descriptive *qualities* of the world. Therefore, lacking indexical knowledge of duration, he is ignorant only concerning the particular *quantity* contained in “that long”. His omniscience about relations equates to ignorance about a quantity as an inherent property. This is no objective matter of fact, however, but only the subjective feel of things.

Compare, again, a property like heat. There are propositional truths about its quantity, and there is the felt quantity of a warm object. Whereas the first is relational, consisting of some number or relations of degrees, the second is not. It is the felt intensity of a single unit size (e. g. Fahrenheit), and no one, I presume, would call this an “objective” quantity. It is simply a subjective experience. Correspondingly, if the particular duration of an event is an inherent property too, asking for its objective size would be like asking for an objective albeit essentially subjective property of things, to which the best answer is perhaps found in Hans Castorp’s reply to his cousin Joachim, from Thomas Mann’s novel *Der Zauberberg*:

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**30** For more about Peter’s experience with space, see Wyller 2018.

„Ja, wenn man ihr aufpaßt, der Zeit, dann vergeht sie sehr langsam. Ich habe das Messen, viermal am Tage, ordentlich gern, weil man doch dabei merkt, was das eigentlich ist; eine Minute oder gar ganze sieben [...].“

„Du sagst ‘eigentlich’. ‘Eigentlich’ kannst du nicht sagen“, entgegnete Hans Castorp. [...] „Die Zeit ist doch überhaupt nicht ‘eigentlich’. Wenn sie einem lang vorkommt, so ist sie lang, und wenn sie einem kurz vorkommt, so ist sie kurz, aber wie lang oder kurz sie in Wirklichkeit ist, das weiß doch niemand.“<sup>31</sup>

Returning to Kant, I believe that such reflections contribute to supporting his view about the subject-dependent nature of the general/particular distinction. The particular extension of time (and space) is irreducibly indexical and, consequently, wholly within the sphere of human experience. As particular, then, the objects of experience have no reality beyond space and time as forms or horizons of human intuition. If true, this may strengthen the “ontological” understanding of transcendental idealism sketched in part 1.

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<sup>31</sup> Mann 1924, 103.