Kant's Model of Causality in terms of Essences

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Abstract

Traditional interpretations of Kant's model of causality consider events to be causes of other events. Eric Watkins proposed an account where the cause is not some event but an unchanging essence of the objects involved. This unchanging essence is unchanging both in terms of securing the object's identity, and in terms of being permanently active: the object attempts to produce changes in other objects even if it doesn't succeed in doing so. By being permanently active Watkins says that these essences are temporally indeterminate. Through this he avoids the regress problem of determining grounds. In the present thesis I show that the regress problem can be avoided even through temporally determinate grounds. For that I introduce an account of real essences being active in causal processes. The real essence is always the essence of a particular object which allows for that object to receive other properties belonging to other concepts. The advantage of such an account is that whereas Watkins' account can merely show how spatial interactions between objects defined as bodies can work my account can show how other types of interactions between objects work. I contend that Watkins' account fails to do that because he overlooked the distinction between the mathematical conception of time and the dynamical conception of time which Kant develops in his table of categories and of which he explicitly talks in the Second Analogy of Experience at A203.

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Introduction

The present thesis concerns what type of essence an object has and how that essence is engaged in causal processes. A concept has essential properties. A particular object will also possess those essential properties if we apply that concept to the object. The essential properties of the object will then explain why that object acted in a certain manner on another object. For example the desk is now wet in virtue of water having liquidity as an essential property. Eric Watkins proposed¹ that the essence is permanently active in that the object attempt to produce changes at all times. The cases Watkins discusses are those where the objects are conceptualized as "bodies". The concept "body" has mass as its essence. In virtue of that essence the object acts through attractive and repulsive forces on other objects. And it acts so permanently. The body will exert or attempt to exert those physical forces even if there is a hindrance which doesn't allow for it to produce a change in another object, e.g. there is a wall between the two objects.

Watkins' thesis is not that all objects in nature can be conceptualized just as "bodies". He seems to suggest that even if we would conceptualize differently the objects, they would still have some set of essential properties once they are conceptualized in some manner. The essence would still be permanently active as it is in the case of objects conceptualized as "bodies".

In this thesis I argue that Kant attributes to any particular object a real essence. It is not entirely clear what Kant means by this notion since he discusses it only in a few lecture notes, but I will argue that the real essence of a particular object has the following function. Any object can be conceptualized in multiple ways. This object can be conceptualized as "water" and as "H₂O". The first concept has some essential properties, and the second concept has different

¹ In "Kant's Model of Causality: Causal Powers, Laws, and Kant's Reply to Hume" (2004), and *Kant and the Metaphysics of Causality* (2005).

essential properties. These properties will all belong to this object that is subsumed under the two concepts. Although they are essential properties of those concepts, are they also essential properties of this object? It may be the case that the properties belonging to the concept "H₂O" are the only essential properties of this object. Then we should say that the essential properties of the concept "water" are reducible to them, or are grounded by them. That is because the essential properties of "water" will be merely accidental properties of that object. Or it may even be the case that neither the set of properties belonging to "water", nor those belonging to "H₂O" are essential properties of this object. Then all of them are grounded by a different set of properties which are essential properties of that object.

Why should we even care if "H₂O" has the essential properties of this object while "water" just some accidental ones? The answer I think is that if the essential properties of "water" are just accidental properties of this object, then in a causal process when we will explain why the desk is wet we will say "the desk is wet because water is liquid". In Kantian terms "liquidity" will be the ground for desk being wet. But if "liquidity" is just an accident of the object, then it has to be grounded on something else. And only this "something else" will fully explain the causal process, i.e. why the object acted in the manner it did. We should find a property that is the last ground of the accidents. I posit the real essence to be this last ground that stops a potential infinite regress of determining grounds.

Since the real essence seems to be something that grounds the various ways in which the object can be conceptualized, I have to say that the real essence is something different from the concepts being applied to the object. Chapters I and II will be discussing this issue. Chapter I is a presentation Watkins' account of Kant's causal model in terms of essences being permanently active. There we shall see that the object is something which has to be conceptualized *as* being in

a certain manner, otherwise we cannot have an objective judgment about the properties the object has and which properties ground the effects in other objects. "This as table is so-and-so" counts as an objective judgment, i.e. true judgment. "This as water produced this-and-that effect" is another example. Chapter II will argue that such an account interprets the categories as formalframeworks that require as to subsume the object under a concept or to apply a causal law to empirical events in order to generate true judgments. I will argue that the categories actually make possible our reference to particular objects. And these particular objects are objects which we don't have to conceptualize in a certain way. Thus we could have an objective judgment like "this (object) is so-and-so" and "this (object) produced that-and-that in this (object)". The object as a particular about which we can still form objective judgments is something different from all the concepts that can be applied to it. And so this object will possess an invariant real essence, i.e. set of essential properties of its own which will allow for it to have the various concepts that we attribute to it. Chapter III will show how the real essence is an internal ground allowing for these various concepts to be applied to the object. Chapter IV will show how the real essence is engaged in causal processes. And there it will be shown that the real essence is not a permanently active essence as Watkins said. His mistake is due to overlooking the difference between a mathematical conception of time and the dynamical conception of time. The former suits best causal processes about relational spatial properties, while the latter fits to all the other accidental properties an object has.

Chapter I – Watkins' interpretation of Kant's model of causality

I start by presenting Watkins' criticisms of the event-causal models. After that I will present the alternative causal model he developed for interpreting Kant. I end by presenting briefly what I think are some problems with his model, and indicate how the problems will be discussed in the next chapters.

1.1.Why event-causation and substance-causation do not work

I begin with Watkins' criticisms of the event-causal interpretations of Kant. The problem with a simple event-event causal model is that there cannot be mutual interaction between events. In the case of causation Watkins emphasizes the temporal priority of the cause to the effect. Now, mutual interaction (as attributed to Kant by Watkins) means that the cause determines the effect (by being temporally prior), and that effect also determines the cause (by being temporally prior), and these two determinations occur at the same time. But events cannot be in mutual interaction. E_1 determines E_2 , but surely we cannot say that E_2 is also prior to E_1 .

One may try to defend the simple event-causation account by rejecting the temporal asymmetry of cause and effect in the definition. But this does not solve much, since now the problem arises not in terms of determination, but in terms of existence: the existence of E_2 depends on E_1 , so the existence of E_1 cannot depend on E_2 .

At this point, one could try escaping Watkins' criticism by dropping the simple eventcausation model, and so adopting a complex event-causation model, where two substances mutually interact through events having different functions: S_1 through E_1 produces E_2 in S_2 , while S_2 through E_3 produces E_4 in S_1 . For Watkins this will not do. We cannot interpret here that $S_1(E_1)$ and $S_2(E_3)$ occur at different times, because mutual interaction means (as Watkins interprets it) the simultaneous occurrence of the two interacting substances and their events that act as causes. And we cannot even determine that $S_1(E_1)$ and $S_2(E_3)$ occur at the same time, because causation means that the cause is occurring before the effect. So when S_1 acts on S_2 , the first event is before the second; when S_2 acts on S_1 , another event is before the other. But from all this we cannot know that $S_1(E_1)$ and $S_2(E_2)$, which are taken as causes, are occurring at the same time. Likewise, it does not seem clear that the two effects also occur at the same time – they should at least start occurring at the same time in order for there to be genuine mutual interaction between the substances.

In order to save the complex event-causation model, one might again to reject the temporal asymmetry requirement in the definition of causation. The model would be: $S_1(E_1)$ causes $S_2(E_2)$ at t_1 , while the same $S_2(E_2)$ causes $S_1(E_3)$ at the same t_1 . The problem with this model is that it solves nothing in regard to the mutual interaction of S_1 and S_2 : from $S_1(E_1)$ causing $S_2(E_2)$ we already know that S_1 and S_2 are simultaneous, so there's no need for E_2 causing E_3 . Another problem is that the model assumes that E_1 occurs at t_1 , without showing by what means it does so. If it does not show how it occurs at t_1 , then that means that S_1 determines its own place in time (namely at t_1), and this is against Kant's requirement in all Analogies of Experience that no substance can by itself determine its place in time, i.e. the moment of its occurrence (or the occurrence of the event through which it acts).

So the problem with the simple event-causal model is that the cause and effect depend on each other for their existence, while the problem with the complex event-causal model is that the cause and effect could well exist independent of each other, and so they do not meet the simultaneity requirement. However, pointing out that causes are not events, does not lead someone to accept that causes are substances per se. Against this Watkins says that firstly, such an account would not explain at all how come the same cause can bring about the same effect at any different time. Secondly, if the substance brings about the effect at only a specific time, the account would leave unexplained why the effect is brought about then and not at some other time. And thirdly, it would not show how the mere existence of a substance could explain the occurrence of the effect.

1.2. Causation through unchanging grounds

Watkins proposes that the notion of "causality of the cause" can point to what the cause is and how it works. He develops his interpretation of Kant's causal model by first talking of "grounds". He starts with grounds because the substance, through some unchanging grounds (these will later be the causal powers or forces), can produce successive changes in other objects. "Ground" simply means that without which something else cannot be determined as being this or that instead of being something different. "Determined" refers to attributing a predicate to something. If we cannot decide whether X is A or ~A, then X is left undetermined. So in this case, the ground assures X's being A, instead of ~A.

Watkins takes the grounds to be unchanging for two reasons:

First, if they are changeable, then they can also be temporally determinate, i.e. occurring at t_1 or t_2 etc. If that is so, then there has to be yet another ground which determines why that ground occurs at t_1 and not at t_2 . And if this ground is itself changeable, then we need another ground. In order to stop the regress, we need some point where the ground is unchangeable. So Watkins thinks we should posit unchangeable grounds, and the grounds that are most likely to be unchangeable are the substances' essences (necessary conditions for something to count as X). These are "grounds *simpliciter*".

Second, if they are changeable, then they are temporally determinate, and that does not distinguish them from events or even states. Taking causal powers to be events (or states) is detrimental because that would mean embracing back again the (simple or complex) event-causal model. These are the same essential grounds as in the previous point, but seen as "grounds that actively determine the states of another substance". The actively determining grounds are characterized as: 1) being active in different ways depending on different circumstances (e.g. how strongly two bodies attract each other depends on the distance between them); and 2) continuous activities of bringing about the effects.

1.3. Cause-effect or real ground and real consequence asymmetry

In the logical relation of ground-consequence, whenever the ground is posited, necessarily the consequence is posited. So they are connected, not opposed. If the relation is analytic, then the consequence is a predicate contained in the concept that is the ground, and hence the relation is established by reason through the principle of identity. Because the principle of identity cannot distinguish between the ground and the consequence (one can be contained within the other) the relation between them is always symmetrical. But if reason cannot grasp the connection, then relation between ground and consequence is empirical and synthetic. In this case, the relation is asymmetrical: the ground cannot be a consequence or vice versa, because if the consequence is posited (or determined), the ground is indeterminate (because different causes can have the same effect), but if the ground is determinate, then the consequence is determinate (since there is some connection between them according to a rule).

One may interpret that the causal ground is here indeterminate merely in some epistemological sense, i.e. if we are given the effect, we do not know/cannot deduce what its cause is. However, to avoid this, Watkins points out that the cause is always a substance, and in itself it is indeterminate in the sense that it is not a state. A state is always a predicate, since it is *of* something. But substance is never predicated of something else. It cannot be a determination. Hence it must be indeterminate. (A substance can be epistemologically determined when we say "this substance is the cause", but ontologically it remains indeterminate.)

1.4. Why causal powers are indeterminate

Are causal powers also indeterminate? Watkins proceeds in three steps. He first shows that they are not determinate (A). But if they are indeterminate, they may as well be substances. Hence after showing that they are not states, it has to be shown that they are not indeterminate substances, but indeterminate relations (B). After that, since these causal powers are active (unlike the grounds *simpliciter*) it has to be proved that they are temporally indeterminate relations (C).

(A) Watkins shows that causal powers are not states by pointing out that the activity of the ground "is temporally indeterminate in the sense that there is no intrinsic state of the substance that is responsible for the effect and to which one can assign a specific temporal index, since qua activity it cannot be a state that has been determined and hence made possible by an activity in the first place"². The idea here is that there is a temporal order of states (e.g. state₁ is simultaneous with state₂, or before state₃, or after state₄ etc.), and powers do not have such temporal indexes. However, this temporal determinacy of states derives from causal determinacy

² Watkins (2004): 472, footnote 40.

because there are first causal interactions between the objects, since only through these interactions can states of the objects arise. And the substance can cause a state in another substance because it has the causal power of doing so. Without such a power it could not give rise to determinations. Therefore, causal powers are always relations between substances and the effects they determine, and powers can never themselves be states or effects.

(B) However, one may still reject the need of power as relation between substance and accident if one asserts that the substance itself is power, and hence there is no need for any third element in our ontology. The need for powers in Kant seems to stem from the fact that a substance can have opposite determinations at different times, and so these opposites cannot be brought about through the substance's own powers single-handedly. Instead, the substance can have the disposition of having these opposites, i.e. it can be an inner ground for having them. But what is then needed is another substance acting as external ground for having that opposite determination. The substance by itself can never produce a change from A to ~A. Hence there has to be, first, a relation of inherence between the substance and its predicates (A and ~A), and second, a causal relation between the substance and the determinations it produces in the other substance. These two relations are both powers, the latter being the causal powers we are dealing with. Therefore, whereas point (A) showed that powers are indeterminate, point (B) shows that they are indeterminate relations, in the sense of not being determinate states, and of not being indeterminate substances.

(C) From here Watkins moves on to show that causal powers are *temporally* indeterminate relations, because causal powers are actions or activities that produce a state, and this action itself is not a state. To support this he introduces the talk on the principle of continuity, and that about the active-passive distinction.

The principle of continuity has the following formulation for bodies: "when one body transfers from one point to another, then it must go through infinitely many intermediate spaces, it must go through all intermediate locations lying between the one point in the line and the other"³. In the text of the Second Analogy, the principle is applied to any type of alteration, not just to bodies:

The question therefore arises, how a thing passes from one state = a into another one = b. Between two instants there is always a time, and between two states in those instances there is always a difference that has a magnitude (for all parts of appearances are always in turn magnitudes). Thus every transition from one state into another happens in a time that is contained between two instants, of which the former determines the state from which the thing proceeds and the second the state at which it arrives. Both are therefore boundaries of the time of an alteration, consequently of the intermediate state between two states, and as such they belong to the whole alteration. Now every alteration has a cause, which manifests its causality in the entire time during which the alteration proceeds. Thus this cause does not produce its alteration suddenly (all at once or in an instant), but rather in a time, so that as the time increases from the initial instant a to its completion in b, the magnitude of the reality (b-a) is also generated through all the smaller degrees that are contained between the first and the last. All alteration is therefore possible only through a continuous action of causality, which, insofar as it is uniform, is called a moment. The alteration does not consist of these moments, but it is generated through them as their effect (A208-9/B253-4)

³ Kant, Metaphysics L₁, 28:201

Watkins interprets the text as follows. There are two boundary states (*a* and *b*), and in between them there are an infinite number of states through which the altering substance (i.e. the substance changing its states) passes. Watkins does not provide any criteria for distinguishing a boundary state from an intermediary one apart from their temporal place: *a* and *b* are the first and last states in the change. Before *a* there is no change, after *b* there is no more change. The altering substance is going through intermediary states because there is some other substance which has to cause the changes. What this second substance (S₂) does is that it acts continuously; otherwise the first substance (S₁) could maybe undergo state₁, state₂, state₃, but not all the intermediary states that are between boundary states *a*-*b*. S₂ produces the change from state *a* to *b* by continuously producing the change from one intermediary state to another. So there are two continuities at stake in Watkins' reading: 1) from *a* to *b*; and 2) the continuity of the ground's action. The continuity of the ground's action is dubbed "causal activity", "causality of the cause", or "continuous action of causality". The difference between this continuity and the first one (of states) is that the states are determined once we take *a* and *b* as boundaries of the process.

From this discussion it seems that the causal powers are temporally indeterminate merely in that the causal powers continuously act in order to bring about some effect. One may say at this point that once that effect has fully come about the causal power may end its activity. However, bearing in mind that these causal powers are essences of things, and are not states of things (so they cannot arise as effects brought about by some other substance), it seems that these causal powers are temporally indeterminate in the additional ways. First, the unchanging ground (or causal power) is permanently active, even though it may not produce a change in the other substance. For example, S_1 uses its attractive force on S_2 , so S_2 does move towards S_1 , but if we put some wall between the two substances, then S_1 's attractive force is still active, but it does not get to S_2 anymore, so it does not change S2's states. Second, they bring about the same type of effects (uniformity of nature).

I will discuss in Chapter IV problems that this interpretation of Watkins' may have. But now, because I want to argue against the idea that substances have unchanging grounds that are knowable and that these grounds are also used as causal powers for bringing about certain effects, I will discuss how Watkins interprets the category of substance and the role of the categories in generating objective judgments. My aim in Chapter II will be to show that we have access to substance only conceived as particulars, and these do not have essences quite in the way Watkins seems to indicate.

1.5. Watkins' interpretation of categories as formal-ontological frameworks

Watkins interprets the categories' task as providing some requirements for what we have to search for in nature in order to arrive at objective judgments, which are judgments that are always true. The categories "supply a formal ontological framework that must be filled in with empirical content"⁴. For example the category of causality ingrained in our faculty of understanding requires that in order to say that there is a causal connection between S₁'s state *b* and S₂'s state *c*, we have to possess a specific causal law which grants the connection that always holds between the two states. And, according to Watkins, since causal processes come about thanks to the grounds inherent in a substance, these causal laws will have their permanency assured not in virtue of the constant conjunction of events, but in virtue of the substances having the same inner grounds (i.e. essences) in virtue of which the causal processes arise. Because each

⁴ Watkins, op. cit. 484.

substance has an unchanging essence, this will also give rise to unchanging causal laws in the substance's interaction with other objects.

Under his interpretation, then, the category of substance will require that in order for our judgments to be objective judgment we have to subsume the perceived object under some concept, since this subsuming means that the perceived object will have an essence attached to it. We do not say "this is so-and-so", but "this *table* is so-and-so". Hence the particular object receives some properties which form the essence of the concept "table". If we do not know that "this" is a table, then we could not recognize whether the property we ascribe to it in a categorical judgment is an accident or an essential property. If the property ascribed to the object is an accident, then the judgment "this is so-and-so" may be true now but it will not be always true. But we will recognize some property as being essential if it is an essential property of the concept which we apply to the object. So a categorical judgment is objective if it can recognize whether the attributed property is an accident or an essential property. And it can do so only if the object is subsumed under some general concept.

For Watkins then there can be objective judgments in physics because the objects are conceptualized or defined as "bodies". "Conceptualizing" or "defining" something as a body means that the thing X is viewed merely as being something extended in nature, composed out of matter, and whose essence is mass.

1.6. Problems with Watkins' interpretation of the categories

Before I present the criticisms I have to briefly mention a terminological issue on "judgments" which will be discussed in greater detail in the next chapter. A judgment for Kant means taking something *as* something, and so it is different from judgment defined as stating

that this or that is the case. All the judgments will concern objects in nature. Judgment of experience is always an objective judgment. On some interpretations "objective" here means either "true for now" or "always true". On other interpretations, "objective" means "object-oriented", and so the truth value of the judgment does not matter. Opposed to judgment of experience is judgment of perception, which is subjective. On some interpretations "subjective" means "false, illusory", and other interpretations it means "pertaining to the knowing subject's mental states, but not necessarily stating something false about the natural objects".

I find Watkins' interpretation problematic in the following respects:

First, if the logical form of the categorical judgment requires that the subject is the ultimate ground of predication, then when we try to derive the corresponding category of substance from this logical form, I do not see any need for the category of substance to require taking essence as the ultimate ground of predication. I think this is so because essence is not something specific belonging only to material objects. Any other thing apart from material substances can have essences.

Moreover, if the requirement of the category of substance is to find which property is invariable, and thus count that as an essential property, then we arrive at the counterintuitive thesis that we cannot form a judgment of experience about objects for which we do not possess the empirical concept.

Finally, we can have objective judgments on causal sequences that occur between objects for which we do not even possess the relevant empirical concepts. And we can do so without knowing if there is some causal law (and which exactly it is) under which the sequence of events can be subsumed. We can point to *this* as a cause for something else without knowing what *this* thing here is, and without knowing that there is a causal law connecting the items.

Solving the problem raised in the first criticism means giving an interpretation of what the "permanency" of the substance is. I will do so somewhere later in Chapter II. In order to solve the problem raised in the last two criticisms I interpret the categories as making possible our reference to objects. Under my interpretation the categories have the role of making possible experience in the sense of allowing us to refer to particular objects in our objective judgments. The judgment can have truth values if it is a judgment about an object. It has to be directed towards a particular object. This directness towards an object is present in the "this" of the judgment. Thus the categories (especially through the relational ones) allow us to form judgments like "*this* (object) is so-and-so". The *this* is the way in which us as knowing subjects individuate objects. *This* X will be different from *this* Y.

This is not a concept which has an essence and which is applied to an object. When we refer to an object it is not necessary to possess the relevant empirical concept of that object. If we imagine a savage that has never seen a house or a car before he cannot form a judgment like "the car is next to the house". Instead the categories allow him to form a judgment like "*this* is next to *this*", where the first *this* individuates that particular car and the second *this* individuates and distinguishes the house from the car.

The objects can still be conceptualized. A particular animal can be conceptualized as "body" or as "living organism". But these will be concepts that will have some essential properties and these properties will then belong to that object. By introducing the discussion on how the categories make possible the reference to objects I want to suggest that the particular object is something different from the ways in which it can be conceptualized. The same object can be part of different species and *genera* depending on how it changes, depending on the criteria we use for realizing taxonomies, and depending on what aspects of the object we refer to

when we subsume it under different concepts. But apart from the general concepts that apply to the object it seems that the particular object has certain attributes that are invariant of the object and which make possible the other properties that it receives from the other concepts. Thus a property that is essential for concept X may not be essential to the object to which we apply concept X. It is then an accidental property of the object, although an essential property of the concept. The essential properties of the object will make possible these other accidental properties it has. And I will argue that those essential properties of the object are engaged in causal processes and they are not permanently active in the way Watkins suggested.

However, before discussing the essential properties of particular objects in the last two chapters I will have to discuss how the *this* is made possible by the categories, i.e. how the categories make possible our reference to particulars.

Chapter II – How reference to particular objects is constituted

In the following I will spell out how intuition and perceptions work, and how they are ordered into judgments so that our objective judgments of experience can be about particular objects, and even about objects for which we lack the relevant concepts. If that is so then it can be said that the object has an identity of itself that is separate from the way that object is conceptualized by us through empirical objects.

2.1. Judgments of perception and judgments of experience

Kant says there are two types of judgments: judgments of perceptions and judgments of experience. The first type of judgments is merely subjective in that they hold as true only for the perceiving subject. Many commentators interpret this as meaning that judgments of perceptions are illusory, misguided or simply false. A judgment like "this looks red to me" would be such a judgment (not all objects look the same to everyone). Thus when Kant says that the perceptions have to be subsumed under some category in order for the judgment to be objective these interpreters say that "objective" here means "being true". A judgment of perception is always false, but a judgment of experience is one that is true. There has to be then some criterion in our perceptions which allows one to say whether our perceptions are true or not. Such a criterion can be the reversibility or maybe the irreversibility of our perceptions. Others⁵ have proposed that perceptions are true of the object if these perceptions can be subsumed under some general concept or under a causal law makes those perceptions true. And it is the categories that require

⁵ Such as Watkins op.cit. 482-4; Longuenesse (1998): 325-93.

us to subsume the perceptions under a general concept or causal law in order for the judgment of perception to become an objective judgment of experience that is always true.

In this section I propose an interpretation where the judgments of perception never have any truth value, and the judgments of experience into which they are transposed are just judgments that *can* have a truth value. Thus even if a judgment of experience is false, it still counts on my interpretation as being an objective judgment. Then the role of the categories is not to generate true judgments when applied to perceptions, but to generate our reference to objects whether or not that is done through true judgments. To prove this point I start by showing what intuition and perception do. After that I show what types of judgments are generated through the mathematical categories and what types of judgments are generated through the dynamical categories. If the proposed interpretation is successful and the categories do constitute our reference in experience to plain particulars, then it is possible for there to be objective judgments of experience about particulars⁶. It can be the case that there are particular objects to which we don't have to assign an essence belonging to an empirical concept in order to have objective judgments about them. That will allow us to say in later chapters that particulars are more than the properties they have from various concepts and so they have the real essences which ground these other properties.

2.2. Intuition and perception

Intuition is plainly a receiving of the sensory manifold through our sensory organs. The sensory manifold is a pack of an infinite number of sensory bits. When I look at the rose the redness is not given to me trough a judgment "the rose is red" but through the infinite number of

⁶ Since the discussion is about objects in nature, by using "particular" I refer just to such objects.

sensory bits making up the redness. The intuition is not a judgment about something, neither about the "redness" as predicate nor about my receiving the bits. Intuition is then merely receptive and unconscious in the sense that we do not make a judgment.

However we do make a judgment in perception. Perception is conscious in that it puts together the sensory manifold in some concept that we apply to this manifold. A judgment for Kant does not have the present day meaning of something asserting *that* X is the case. A judgment is instead a process of taking something *as* something. In plain intuition I look at the rose without making a judgment. In perception I look at the same thing but taking what I see either as being a rose or as being red. The concept here is just a way of perceiving or just a way of ordering the sensory manifold: in one case I order that sensory manifold taken *as* being of a rose, in another case I order that very same sensory manifold taken *as* being of something red. However this concept application doesn't give us an objective judgment yet. For that we need to apply not just some empirical concept (like "house", "door" etc.) but a pure concept of understanding, i.e. a category.

2.3. Mathematical categories

This is the point where categories should be somehow applied to these perceptions in order to generate the judgments of experience. I will first consider the mathematical categories and after that the dynamical categories.

The mathematical categories are the categories of quantity and of quality⁷. The categories of quantity are those of unity, plurality and totality. What these deal with are not empirical perceptions like the perception of the rose or of its color. Instead they are concerned with pure

⁷ Through "mathematical categories" I will mainly refer to the categories of quantity since they are more useful for my purpose and easier to understand.

intuitions. That is, the sensory bits given in intuition are given to us organized in some geometrical shape already. So a judgment about the geometrical form of the object will disregard anything not having to do with the spatial shape or with other spatial relations.

The judgments in which we apply the mathematical categories will be about arithmetical operations, geometrical shapes, part-whole relations or judgments where the multiple parts compose a larger whole, e.g. the planks making up a ship. What do all of these have in common? They are judgments which relate to each other parts which Kant calls homogeneous units. They are homogeneous because they are qualitatively the same. An arithmetical judgment like "4+5 = 9" can be break down into relating units like "1+1+1+...1". Each "1" is the same and the only thing which may differ is the position of each "1" in the series. In the case of geometrical judgments the shapes can also be segmented into units of the same length and putting together these units forms the shape. Even the planks composing a ship are seen as being the same when they are related together in forming the ship. The planks could very well in this case be of different sizes, but they are seen as homogeneous because they are units forming up the whole.

Our judgments however are not always about these units themselves. Of course we can make a judgment about the segments forming up a line for instance. But most of the time our mathematical judgments are about the wholes that the parts form. Most mathematical judgments are of the form: elements A and element B related together form something new C. The homogeneous units I discussed stand for the A and B which generate the C which in our case stands for wholes. The whole can be either a continuous magnitude, or a whole with discrete units.

As examples for the first case we can take the following. Duration in time is not given as formed of parts separated from each other. Instead these parts are actually merging into each other. The duration is continuous and it is actually us who split it into parts. In itself the time duration is continuous. The same goes with a geometrical line: we segment it into parts separated from each other, but in itself the line extends continuously to infinity.

For the case of wholes with discrete units we can take motion. The interacting bodies are seen as homogeneous points having trajectories and these can be calculated. The C which now is the motion is formed out of the two bodies taken as homogeneous units A and B. So even in such a judgment there are two elements being related to each other, these elements are homogeneous and they give rise to something new and different from them.

2.4. Why do we need dynamical categories?

Besides the mathematical judgments there are the objective judgments of experience formed from "applying" the dynamical categories to perceptions or (which means the same thing) from "subsuming" the perceptions under the dynamical categories. I will only discuss the relational categories: substance, causation and community.

The need for these dynamical categories stems from the need to make judgments such as "the rose is red". There is no way in which we could arrive at such a judgment through using merely mathematical categories. That is because mathematical categories are concerned with homogeneous units whereas "rose" and "red" are not at all homogeneous and cannot be. They are heterogeneous representations about the content of our perceptions.

One could still try to force the application of the mathematical categories to causality by saying that the cause always occurs before the effect. Therefore there are time indexicals we use. However I reply that this overlooks the possibility of the cause and effect occurring simultaneously in nature. In such cases we can still distinguish between one of the occurrences being the cause while the other being the effect⁸. Furthermore, even in cases where the cause and effect don't occur simultaneously it is hard to point to where a cause ends and where the effect starts. That is because the generated time has to be a time continuum (since it is mathematical time) and here the parts merge into each other as has been said earlier. Finally we can mark a distinction between the mathematical and the dynamical categories by pointing out to what they are concerned with: mathematical categories make possible intuitions through ordering the sensory manifold, while dynamical categories make possible experience by ordering perceptions.

The mathematical categories are concerned mainly with our intuitions. They make sure that what is being intuited (the sensory manifold) is given into shapes. Let's say we are looking at a table having four bottles on it. And let's say they are somewhat close to each other and I am conscious only of one bottle. Or in other words we can say "I am paying attention to one of the bottles". Perceiving this means being conscious of this or paying attention to this. Likewise I could have perceived one part of the bottle. However I still receive through intuition the sensory manifold of the other bottles surrounding that one. And that sensory manifold is somehow ordered into shapes. If it were not so, then all the sensory manifold would chaotically run into each other. And so we can say that what the mathematical categories made possible was intuition.

⁸ This is a point made in this important fragment by Kant: "The majority of efficient causes in nature are simultaneous with their effects, and the temporal sequence of the latter is occasioned only by the fact that the cause cannot achieve its entire effect in one instant. But in the instant in which the effect first arises, it is always simultaneous with the causality of its cause, since if the cause had ceased to be an instant before then the effect would never have arisen. Here one must note that it is the order of time and not its lapse that is taken account of; the relation remains even if no time has elapsed. The time between the causality of the cause and its immediate effect can be vanishing (they can therefore be simultaneous), but the temporal relation of the one to the other still remains determinable. If I consider a ball that lies on a stuffed pillow and makes a dent in it as a cause, it is simultaneous with its effect. Yet I still distinguish the two by means of the temporal relation of the dynamical connection. For if I lay the ball on the pillow the dent follows its previously smooth shape; but if (for whatever reason) the pillow has a dent, a leaden ball does not follow it" (A203/B248-9, my emphasis).

Our perception however concerns the *content* of those intuitions. I receive the sensory manifold in intuition and I take this sensory manifold *as* "a bottle". As said, this taking *as* is a judgment of perception. All cognition has to start with judgments of perception⁹. If our perceptions are already about objects then why are they not considered objective but instead subjective by Kant?

Under my interpretation that is because we have multiple perceptions but through themselves these perceptions are not "connected" to each other into objects and causal relations¹⁰. When we plainly perceive something we don't take something to be an object, or to be a cause of something else, or a state to be successive upon another one. To do so we need the relational categories which "relate" to each other these perceptions in order to form experience. "Forming experience" means forming objective judgments of experience.

2.5. The relational category of substance as a ground

"Ground" in Kant usually means: if X is posited then Y has to be posited too. However in the case of experience I take this to mean that when X is posited, then Y *can* be objectively posited. This will have different meanings in the two main categories of relation, that of substance and that of causality.

Kant distinguishes between logical grounds and real grounds. When it comes to the logical form of "subject" this is taken to mean the "ultimate ground of predication". It is that which cannot be predicated of something else. Anything can be a subject as long as it can be an

⁹ "All our judgments are at first mere judgments of perception; they hold only for us, i.e., for our subject, and only afterwards do we give them a new relation, namely to an object, and intend that the judgment should also be valid at all times for us and for everyone else" (*Prolegomena*, §18, 4:298).

¹⁰ That is what I take Kant to refer to when saying throughout the Analogies of Experience that we never perceive time.

ultimate ground of predication. However transcendental logic offers the table of categories by restricting the application of the logical forms just to objects in nature. By restricting "subject" to just natural objects we get the category of "substance". And this is now defined as "the permanent in perception".

Then the way in which I propose that judgments of experience are generated is the following: in a judgment of perception we plainly report what we see, that is why they are subjective judgments. We do conceptualize this as a "rock" or this as "blue". We can even say "I see this". But these are merely contents of perceptions or subjective reports. When we subsume perceptions under the category of substance what happens is that we judge "this rock is blue" and we take "blue" as belonging to something which *can support* that property. The substance has to be able in some way to allow for itself to support a property. In other words, the substance is taken as ground for the predicate. If the substance wouldn't be a ground then the property wouldn't be determined as being a property. It would remain a mere concept that we have in our perception. The substance that we take as a ground for our judgment is what introduces the distinction between concepts as properties and concepts as substances. Without the substance as a ground we would just have judgments of perception formed out of concepts indistinguishable as to whether they are properties or substances.

The substance or the object is a ground for the properties in virtue of its permanence. The object is permanent in the following ways. First, it is permanent in that we take it to be *something* which exists in a certain way. It is something that has properties. So we introduce a distinction between that which is *something* and that which belongs to it as property. Secondly, it is permanent in that the same object could also have other different properties. It is not as if the object exists only as long as we experience it with that property. Even if throughout its whole

history that object only has that property, it still would be possible for it to have another property as well. Thirdly, if there is a process of change going on, then there is something which maintains its existence throughout the process of change and that something is the object to which we attribute the different properties it has.

Given this interpretation of substance we can therefore say that there is a criterion that makes possible the objectivity of the judgment of experience, and this is the object itself taken by us as a ground which allows the properties to be properties belonging to an object. The properties are determined as properties and the object is determined as being an object once we take something to be "permanent".

Does the "permanent" then have to point towards an object that is subsumed under some general concept? It seems not. Even if we make a judgment like "the door is so-and-so", "the door" seems to have a referential use. The judgment is about some particular door and we take that particular to be in a certain manner¹¹. And we are not assuming that the door is in that manner in virtue of it being a "door". The permanent is then this particular object to which "door" refers to. "Door" becomes then a conceptualization of the particular thing, and this particular thing can be conceptualized in many other different manners.

¹¹ That Kant has particular objects in mind for applying the categories in order to form judgments of experience can be seen from this fragment: "An individual judgment of experience, e.g., one made by <u>someone who perceives a</u> <u>mobile droplet of water in a rock crystal</u>, rightly demands that anyone else must also find it so, since he has made this judgment, in accordance with the general conditions of the determining power of judgment, under the laws of a possible experience in general" (Critique *of the Power of Judgment*, published introduction, VII, 5:191, my emphasis). In order to make a judgment like the one underlined we don't seem to need to invoke some causal law or general concepts. All that is needed is to perceive something which is then conceptualized as substance or object.

2.6. How to apply the category of causation to perceptions

In an object S₁ there is a change from F to ~F. For Kant, F and ~F have to belong to the same higher genus. A change cannot be from a color to a shape. A change can be from "blue" to "yellow". ~F is non-F and it contains all the properties different from F but belonging to the same genus as F. Not-F is a particular case of non-F in this case. If F = white, then not-F = black, and \sim F are all the other colors. The change is always produced in S₁ because of another object S_2 . The latter object then has to be the ground for the change in S_1 . Here again there is no need to subsume our perceptions to some causal law in order to generate the objective judgment. It is enough if we can formulate a judgment where we take this particular S_2 (of which we may even lack the relevant empirical concept) and say that S₂ determines the change to be from F to one specific property and not to another property. A simple judgment of perception of this situation would be: "I see S_1 -blue, I see S_2 , I see S_1 -yellow". In such a judgment we don't connect the perceptions to one another. In a judgment of experience however, we have to take S₁-blue and S₁-yellow as connected to one another: they are perceptions of states that belong to the same object. Then we have to connect these changing states to S_2 : it is because of S_2 and not because of something else that the property yellow replaces the property blue in the object S_1 .

I offer then the following reconstruction of how we go from the experience of S_1 as a substance to the experience of it undergoing a change. The experience of change of S_1 is then the following:

i) we experience at t_1 that F belongs to S_1 (this is an experience because S_1 is taken as substance)

ii) At t_2 we experience FF as belonging to S_1 .

iii) F and FF belong to the same higher genus (they are colors for example).

iv) We notice that we have perceived F and FF, and we take them as incompatible, i.e. FF is experienced as being non-F.

v) F and FF can't be part of S_1 at the same time; and since FF occurs later than F, then:

vi) FF is <u>experienced</u> as a replacement of F in S_1 (the experience of change)

vii) Because we first saw F, we experience the change as being a change from F to FF.

In vii we connect the two perceptions, namely of F and FF, as being that of a change. Therefore we generate an experience of change. At this point we only assume that it was not S_1 itself that produced the change. The change was produced through an external ground, i.e. through something different than S_1 .

In order to say that it was S_2 which was the ground of change we should have before i and ii another case of perceiving, namely that of S_2 . So before i and ii we should have:

-i) we perceive S₂.

-ii) we experience S_2 as G^{12} . (this is a switch from perception to experience because we take S_2 as being a substance)

-iii) we experience S₂ as G as acting on S₁.

And then we add the mentioned points from i to vii. At the end, after vii we have to add:

viii) we assume there is an external object that had to produce the change in S₁.

ix) we experienced S_2 as G acting on S_1 before S_1 changed from F to FF.

 $^{^{12}}$ One could perfectly well add here that S₂ undergoes a change from G to GG and through this change it acts on S₁.

x) we conclude and experience S_2 as the cause of the change in S_1 .

In such a case the ground is now S_2 . It is an external ground in that it is an object different from S_1 which determines the change of a property in S_1 to be to a specific property and not to another one.

In the provided reconstruction we don't need to replace S_2 's action on S_1 with a causal law. It is enough if we have separate experience of S_1 , S_2 and then connect these experiences through the category of causality. There was no need for causal laws in order to have the experience of the interaction between them. One could object that in this model we just "assume" that S_1 is the ground of the change, and so we cannot be certain of S_1 being the "real cause". However, Kant points out numerous times in the Second Analogy of Experience that we presuppose there is a cause of the change. The category of causality itself doesn't help us in discovering which cause is the real cause. So it is perfectly fine if we "assume" S_2 to be the cause. We experience S_2 as the cause and do not have to be absolutely certain about S_2 as being the real cause. Furthermore, in the beginning of the Analogies Kant points out that the role of the Analogies in general is to point out that if there are some given elements in a series, then we can conclude that there is another element, but not which that additional element is. That is the same with the case of the cause. There is some cause, but the Analogy doesn't point out which cause it

is.

Chapter III – Real essence as internal ground for inhering properties in a substance

In the previous chapter I showed that Kant's categories of substance and causality deal with particulars to which we can refer in our judgments without the need of possessing any empirical concept of the object. The categories make possible our reference to any object, i.e. we can take *this* as being something, without knowing exactly what it is in terms of an empirical concept possessing generality (an essence). The following two chapters clarify what the *thisness* of an object is by discussing real essences as grounding the properties a substance has – the real essence as internal ground – and as grounding the properties in other substances through causal processes – the real essence as external ground.

In this chapter I will focus just on real essence as an internal ground for the object's properties. I begin by presenting Kant's distinction between logical essences and real essences. This presentation closely follows Kant's lectures on logic, and on metaphysics, but the rest of the chapter will be my own interpretation of how real essences are internal grounds for an object's properties. The presentation of the distinction will reveal real essences merely as epistemic tools we use in gaining more detailed knowledge about various species and *genera* of objects in nature. I will then argue that real essences are not merely conventions of ours, for they are also metaphysically existent in the Kantian sense, i.e. as being postulates needed for the coherence of experience. I will show how real essences are needed as internal ground for opposite properties to inhere in a substance, and as internal ground for different essential properties and attributes (coming from different concepts) to inhere in the object. I end the chapter by discussing whether the real essence solely by itself constitutes the identity of the object.

3.1. Logical essences

For Kant all concepts have essences. The essence is a set of properties that a concept X has to possess necessarily and sufficiently in order to be X. Any object that is subsumed under X (in other words to which X applies) has to also possess the properties that go into the essence of the concept.

What kinds of properties go into an essence? Any type of essence whether logical or real has essential properties and attributes. The attributes are grounded in the essential properties, either analytically like in logical essences, or synthetically like in real essences¹³. Besides attributes, there are determinations of things in nature that are extra-essential, i.e. neither essential properties, nor attributes. These determinations can be internal (they are then called accidents or modes of existing), or external¹⁴. Internal determinations belong solely to the thing itself, in the sense of there not concerned with any relation of the substance to another substance. The external determination is a relation between two substances. It is a mark that arises only because at the same time there are two substances which together constitute that mark. For example X is the brother of Y^{15} .

There are concepts having logical essences, and concepts having real essences. I will first present the former. What is specific to logical essences are the following:

First, the marks forming the essential properties can be arbitrarily chosen by the users of a community. These include mathematical concepts about particular abstract objects, and even

¹³ I will clarify the analytic grounding – synthetic grounding distinction later.

¹⁴ Kant introduces this distinction in *Jäsche Logic*, 9:61; *Vienna Logic*, 24:839; and in *Dohna Logic* 24:728.

¹⁵ Although brotherhood by itself – so without relating two substances – can count as a mode

natural kind terms¹⁶. Geometrical shapes are arbitrary because we do not directly perceive "in nature" triangles, but we form ourselves in pure intuition the concept separately from any empirical data¹⁷. Logical essences can also be natural kind terms if they *define* empirical concepts. Thus they could be used for delineating species from one another. "Water" as a natural kind is defined as liquid, as odorless etc., and we include all the necessary marks for distinguishing it from something else¹⁸. However, these will be just a few marks, finite in number. They are useful for scientific purposes in taxonomies, and from different criteria of classification we can have different logical essences for natural kinds.

Secondly, although the essential properties can be conventionally chosen, the attributes that follow or are deduced from these essential properties are deduced *immediately*, i.e. it is always those and only those attributes that *we must* deduce. In other words they follow *necessarily* from the essential properties. So for instance, the triangle's having three angles is an essential property, but the triangle's property of having three sides follows from having three angles. Having three sides is then an attribute, while having three angles is an essential property of the triangle since it does not follow from anything else. The grounding relation between the essential properties and the attributes in the case of logical essences is then an analytic grounding relation.

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¹⁶ Vienna Logic, 24:919

¹⁷ That doesn't mean all mathematical knowledge is analytical. Mathematical principles and the principles of physics (and pure physics) are not because they result, for Kant at least, from the need of our faculties to find grounding presuppositions for the possibility of experience and pure intuition.

¹⁸ The properties going into logical essences can be enumerated in a nominal definition, used for distinguishing species from one another: "Nominal definition ... is sufficient only externally, in comparison with others, in order to have insight into its identity or different with others. It means almost nothing more than what the expression *nominal definition* says, a certain attestation to the name of the thing, in order to make the name of the thing distinct, but not to have better insight into the thing itself" (*Vienna Logic*, 24:919).

3.2. Real essences

If we already have logical essences, what is the use of real essences then? As said, logical essences, even if belonging to natural kinds, are not useful in gaining more detailed knowledge of the objects. One will not be able to recognize a house by using its logical essence if one has not seen one before¹⁹. That is, the objects, as they are in nature, have many more properties than the logical essence allows one to imagine. Thus if we want to know what the essence of a thing (or group of things) is in itself, i.e. apart from its/their logical essence which is arbitrary, hence conventional for a group of users, then we have to investigate the different manifestations of these things, and see which properties occur at all times, i.e. which are the invariant properties. The latter properties constitute the real essence of the object.

The information conveyed in the real essences is about natural objects, so these will deal with groups of objects whose existence is contingent, and whose properties cannot be linked analytically as was the case with logical essences. The attributes, then, do not follow *immediately and necessarily* from the real essential properties²⁰, but follow only based on the constant relation we see between them in nature. For example in the essential properties of man we ground the attribute of judging. Because judging does not follow analytically from the essential properties, the grounding relation is this time synthetic²¹.

¹⁹ Vienna Logic, 24:918

²⁰ "that bodies attract belongs to the essence of things, although it does not lie in the concept of the body" (Kant, *Metaphysics L2*, 28:553).

²¹ Here I just introduce the notion of real essence. Therefore I will discuss more the synthetic relation in real essences in the following section.

Given that real essences concern only natural objects which have to be at least spatially extended these essences are never about abstract objects. They can be instead about an individual substance or about a group of particulars²². I will now discuss both.

The real essence of a *genera* is easier to trace because the common properties that the objects part of it manifest are far less in number than the properties that an individual thing can have. It is easier then to experience what is common to a set of objects and extract from their manifestations what is invariant. Also, for some of these *genera* we have synthetic *a priori* principles derived from the transcendental laws as is the case with bodies, whose principles derive from the principles of pure understanding. Thus we can even have a complete knowledge of the real essence of some *genera*, e.g. "body"²³.

But can we have a *complete* knowledge of the real essence of an individual X? A complete knowledge would require that we know exactly that *a*, *b*, *c*, *d* are all essential properties of X, and they are the only essential properties of X. Kant denies the possibility of having such complete knowledge²⁴. In my interpretation, his reason is the following. Our experience is piecemeal: we have an experience of "*this* object X as being round" at t_1 , or of "this object X as being blue" at t_2 . The properties of X vary throughout time. By having a judgment of experience about X at t_1 , and then another one at t_2 , t_3 , t_4 , we cannot know whether the properties we attribute to X will last throughout all times. But in order to say that some

²² In his *Kant's Modal Metaphysics* (2016: 235), Nicholas Stang suggests that Kant doesn't allow for particulars to have real essences. But the fragments he offers in support for this just state that we can't "cognize" the real essence of particulars (*Blomberg Logic*, 24:118, 268). "Cognize" here means just that we don't have empirical knowledge of the real essence. But if it is impossible for us to have knowledge of the real essence of an individual, that doesn't mean that metaphysically the individual doesn't have a real essence.

²³ Kant presents in this way the complete definition: "Body can be defined perfectly – a filling of space indicates only matter, but the description of its figure in accordance with the three dimensions indicates bodies" (*Dohna Logic*, 24:728).

²⁴ "We can never have complete insight into the real essence, e.g. we can never experience *all* the marks of water no matter how far physics advances" (*Dohna Logic*, 24:728).

property is an essential property of X, we need to be sure that that property stays invariant. In empirical experience we cannot be sure, since we are not able to experience all the properties that X have throughout all times. Furthermore, we cannot establish through an analytical procedure (as in the case of logical essences), that this or that property is an essential property of X. Therefore, we are never sure that some property we attribute to X is an essential property of X^{25} .

However, one can point to cases where the object never changes and may even have just one property throughout its whole history. It doesn't seem that we should take that property as being essential. That property may be a simple accident, and so it is not *necessarily* invariant, but only *accidentally*. Then to the previous requirement of a property being invariant I add the requirement that "we can say that this property can also explain why the object X can have these and not other accidents, and also why object X can produce these effects in other objects, and not other effects". Only in that way some property counts as an essential property of X.

Thus we can never have access to the real essence of an individual object. Thus, what we can do is take some set of the experiences we have of X, and say: given these experiences we had of X from t_1 to t_{48} , "we can say that this or that property stays invariant and makes possible other properties that X receives through its changes"²⁶.

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²⁵ "The real essence is not the essence of the concept, but rather of the matter. E.g., the predicate of impenetrability belongs to the existence of body. Now I observe through experience much that belongs to its existence; e.g. extension in space, resistance against other bodies etc. Now the inner ground of all this is the nature of the thing. We can infer the inner principle only from the properties known to us; therefore the real essence of things is inscrutable to us, although we cognize many essential aspects. We become acquainted with the powers of things bit by bit in experience" (*Metaphysics L2*, 28:553, my emphasis). I take the "essential aspects" to be plain properties that we use to explain why the object has this or that accident inherent in it, or why the same object produces some effect in another object. But we are never certain whether that property that we take as "essential property" really is an essential property of the object.

²⁶ "We can call something the real essence comparatively, or we can stop with the investigation of the real essence in a certain respect, and with that be content. We often hear the complaint that the essences of things are unknown, that we are acquainted with only the surface. That is entirely right, but is valid only for the real essence. We can

However, if we do not have epistemological access to the real essence, then one may raise the question "what if real essences of things are just conventions and the thing metaphysically speaking never really has a real essence but only a cluster of properties that can even change through time?" Here "metaphysically" is taken to mean something that belongs to the thing in itself apart or independently from any possible experience we may have of that thing. Since we don't have direct acquaintance to things in themselves, what is "metaphysical" is a postulation of the knowing subjects.

To this objection I think it can be answered that there is a theoretical need for us postulating that each individual thing has a real essence. I argue that the postulation comes from the need to explain the changing internal determinations of a thing. If we explain such a change merely through some property of the object, then it may be the case that the property is itself an accident or in other words, changeable. To avoid this infinite regress we must posit that the thing has some real essence which can ground that property in the object. However I argue that the grounding relation between the real essence and the other properties is one of allowance, not of necessitation. To illustrate this type of grounding relation I discuss in the next section how in a real essence the essential properties ground the attributes. And only afterwards I discuss how this grounding relation in terms of allowing looks like for the whole real essence (comprising the essential properties and the attributes) when it grounds internal determinations.

cognize much that belongs therein, but no everything. This real essence is nature" (*Metaphysics Mrongovius*, 29:821).

3.3. Grounding in terms of allowing, and not in terms of necessitating

Kant uses "grounding" as a synonym for determining: X determines Y if once X is posited, it is Y rather than something else that is also posited²⁷. The analytic relation between essential properties and attributes is a necessary grounding relation: if X is posited, then Y has to be posited. It is never is the case that when X is posited, Y is not, even though Y could be posited by some other ground. Even if Y can be posited by different grounds (say X, Z, Q), it is never the case that in some worlds Y can be posited by some grounds, and in other worlds by other grounds²⁸. Y can be posited by the same grounds in all worlds. The attributes can be grounded only by certain properties, and the properties can ground only certain attributes. Hence one could immediately deduce the attributes from the essential properties.

In the case of real essences, the essential properties and the attributes stand in a synthetic relation. I introduce now the notion of "allowance" to characterize the synthetic grounding relation holding between the essential properties of real essences and their attributes. There are two features belonging to the "allowance" relation.

The first feature is that of a certain kind of contingency as opposed to the necessity involved in logical essences. In the case of real essences we could not at all immediately deduce what attributes derive from the essential properties. That is because, from a logical perspective, in our world there is this specific synthetic grounding going on between essential properties X, Y, Z and the specific attributes *a*, *b*, *c*, but it may well have been the case that X, Y, Z grounded a different set of attributes, *e*, *f*, *g*. Or *a*, *b*, *c* could have had different grounds. However, once in

 $^{^{27}}$ This still leaves it open that if X wouldn't have been posited, Y would have been posited by something else (e.g. by Z).

²⁸ Of course Kant doesn't talk of possible worlds, but necessity and contingency seem easier to understand that way. Also, a passage like the one quoted in the next footnote is easier to understand in those terms.

one world the essential properties ground certain attributes, it is not the case that the same essential properties will ground the opposite of those attributes at another point in time in that same world. For example, extension can only ground divisibility in our world. From this I conclude that whenever we say of something that it is synthetically necessary we are saying that it is physically necessary in our world, but not analytically or logically necessary²⁹.

The second feature is that of being able to ground certain attributes and not others. X, Y, Z can ground attributes *a*, *b*, *c* in our world, they can ground *e*, *f*, *g* in a different world, but it will never be the case that they will ground *k*, *l*, *m*. I say about this that "X, Y, Z can *allow* for themselves to ground certain attributes, but not other attributes". For example extension could never ground an attribute like immateriality in any possible world.

This allowance relation works similarly when it comes to grounding internal accidental determinations in ways which I will now show. However, in the case of internal determinations the essential properties of real essences prove useful exactly because they can ground opposite determinations belonging to the same thing at different times. This wasn't possible in the case of attributes, as said above.

3.4. Real essence as allowing internal determinations

I will now argue for real essences as existing metaphysically. I will show that they are needed for grounding internal determinations of things. The relation between these determinations and the real essence is one of allowance.

²⁹ "What is physically necessary can be logically only contingent. E.g., it is physically necessary that all bodies fall, but this lies only in the thing and logically is only contingent" (*Dohna Logic*, 24:727).

As an internal ground, the real essence must be postulated for grounding the following: A. opposites³⁰; B. properties that are not necessarily opposites, but as properties they are essential properties belonging to different concepts which we attribute to X. I discuss each case now.

3.4.1. Real essences and opposite properties

We make a judgment of experience regarding X at t_3 , but before t_3 X as an object had a past, and has a future. Even if throughout its whole period of existence X has a single internal determination and never changes it, still it is possible for X to undergo a change. That is because X is an object in nature, and not a mere concept. I will say then that X before t_3 , X at t_3 , and X at t_n *can* have different manifestations, i.e. X can change certain properties of itself (by entering into causal interactions). X *can* admit both F and ~F as its properties at different times, and so X *can* undergo a change from F to ~F.

If there are such properties that X has and is capable of changing them, then there has to be some way in which X "allows" for itself to have those properties. I take it that what allows for X to have this or that property and change it later on is X's own real essence. The real essence, then, is something that we postulate to belong to a thing X.

Here too the relation of allowance is not analytic but synthetic. If it were analytic that would mean that X can undergo change through itself, and someone with divine knowledge could predict that X is F at t_1 or that X is ~F at t_2 . But it is absurd for a logical essence to contain within itself the possibility to necessarily and immediately derive contradictory predicates or

³⁰ As a reminder: if F = white, then $\sim F$ (non-F) = yellow, which is just an opposite. A contradictory opposite (black) is not-F, and is part of the class of opposites (non-F). In any case, for there to be a change, F, non-F, and not-F have to belong to the same higher *genus*.

properties. Then we have to say that the real essence "allows" for X to have F and for X to have \sim F *at unspecified different times*³¹. Even if we knew the complete real essence of X we couldn't know what accidents X will have and when. If there would ever be complete knowledge of the real essence all that could be said would be whether X could support properties like *a*, *b*, *c*. The real essence would allow X to have *a*, *b*, *c* as properties but not *e*, *f*, *g* for example.

There is another reason why the real essence cannot allow one to know *immediately* the future properties of X. That is because the real essence is just an internal ground and not an external ground for the changes produced in X. The real essence never grounds the determinations alone when it comes to accidental determinations. The real essence counts as internal ground, while the external ground is the other object's causal action on the first object³². These "grounds" taken *together* make possible the change to be from F to some particular property, and not to another property. The grounds are *together* sufficient to determine the specific property to which X changes. Each ground taken *alone* would count merely as a necessary ground³³.

Consider the following example. Water determines salt to dissolve, but another object acting on salt would've produced a different change. Water determines the effect in a precise

³¹ In this, real essences differ from logical essences. The later can never have F and \sim F as properties, not even at different times, since that would mean that the logical essence is contradictory. Also, in the case of logical essences there are no external grounds for determining the attributes, there are only internal grounds, namely the essential properties. That is because there is nothing causally acting on logical essences *per se*.

³² That there are always two grounds for a change as I proposed fits the following passage from Kant's lectures: "Every substance is active insofar as its accidents inhere, but also passive, insofar as they inhere through an external power, this is not self-contradictory. E.g., a representation of a trumpet sound inheres in me through an external power, but not alone, for had I no power of representation, then it could be sounded forever and I could not have a representation. From the union of one substance with another an effect comes about, namely, the representation of the trumpet sound. We can never be merely passive, but rather every passion is at the same time action. ... The substance being acted upon is acting in itself, for the accident would not inhere if the substance had no power through which it inhered in it, hence it also acts" (*Metaphysics Mrongovius*, 29:823).

 $^{^{33}}$ I differ here from Watkins who took the external ground to be a sufficient ground because he interprets S₁ to transfer some property to S₂ (2004: 471). And so S₂ doesn't have an internal ground for receiving the new property as it does on my account.

manner, and it is an external ground. But what if salt weren't dissolvable in water, but only in ammonia? Thus salt itself must be able to dissolve when interacting with water. In this sense, salt has to have an internal ground in order for the new determination to come about. So whenever S_1 determines a change from S_{2a} to S_{2b} , we *usually* say that S_1 is the external ground for *b*, and S_2 the internal ground for *b*. But now, to put it in more precise terms, we say " S_1 is the external ground for *b*, and S_2 's real essence is the internal ground for *b*".

3.4.2. Real essence and concepts

To the proposed account of real essences as making possible the inherence of opposite properties one may well object that we can use a property belonging to the essence of a concept known to us (and under which we subsume the particular object) to explain the object's capacity of supporting opposites. Thus if water can change its color, we say that this can happen thanks to water conceptualized as "H₂O". To this I reply that if we do so then we have to check whether that property itself is just an accident or if it is actually an essential property of the thing. When we apply a concept to a thing the properties forming the essence of the concept but not essential properties of the thing, then we explain a change from F to ~F through an accidental property. And if it is accidental then we have to find an internal ground for that property. And that ground is the real essence of the thing.

There are two cases to be discussed here: the first when an object supports differing concepts at different times, and the second when that same object supports differing concepts at the same time.

For the first case, if the object undergoes altogether a change in essential properties and attributes, then we have to say that the object is being brought under differing concepts. This may happen with some animal belonging to a species from t_1 to t_5 , but after that it suffers a mutation that places the animal within another species. The "differing" concepts are here simply concepts with different essential properties and attributes, not necessarily opposites. Given this situation we have to suppose that there is some real essence, and this real essence of the animal, if it were completely knowable, could explain how the change from one set of essential properties and attributes. Knowing the real essence wouldn't allow us to predict the change, but only to say something like "the real essence allows for the object to change in this or that way, and wouldn't have allowed for it to change in this or that manner, regardless of any other intervention through an external ground"³⁴.

For the second case, consider the following example. Water can be defined as "H₂O", and as "Water_{df} = liquid, odorless element". The two are obviously not contradictory essences, since they do not belong together to a higher *genus*. They are also not subordinated to each other. But they still are different essences belonging to the same thing. How is this possible? It seems that again we need to postulate there being some internal ground that allows for the same X to be conceptualized once as "H₂O", and as "water". As an "internal ground", the real essence "allows" X, in the manner we described previously, to have differing attributes and essential properties coming from different concepts. The chemical composition, the fact that it is liquid, odorless and so on may all be together essential properties of the real essence of this particular. If on the contrary those properties are not essential properties of the real essence of the object then

³⁴ Historically it was possible for a canine species to change into the modern day whale, but it wouldn't have been possible for it to change into some kind of creature that could fly to another planet.

they are properties belonging to our concepts and have to be properties that are allowed by the real essence to inhere in the object. I say then that the real essence is the internal ground of those properties.

3.5. Real essence and the object's identity

Before I discuss the need for real essences as external grounds, I think we should see what relation there is between the real essence and the identity of the object. The present section must show that we must avoid thinking of real essences as constituting the identity of the object and thus distinguishing one object from another in the same way that real essences do distinguish *genera* from one another.

Since I showed that there is no necessary connection (in the analytic sense) between the essential properties and any other property the object can have, one could not say that the real essence is like a Leibnizian monad individuating the object by containing its whole past and future manifestations. Instead I have to concede that the real essence is just formed out of qualitative properties, i.e. non-relational properties. And so it may well be possible that the real essence of one thing be shared by another individual thing. What then constitutes the identity and individuation of *this* X?

There is an epistemological way of individuating an object, and a metaphysical one. I will discuss first the plain epistemological way of individuation, and after that how the metaphysical individuation is postulated for the sake of us having a unitary experience, i.e. an experience without gaps in it.

As has been shown in Chapter II, the *this* is the particular object about which we form a judgment. Even if we do not possess the empirical concept for an object, the relational categories

still allow us to refer to this or that object. Whenever we form a judgment of experience of the type "this is so-and-so", the object we are referring to is just some object that we posit as being something which exists in a certain way. We organize the sensory manifold into the concept of *this* object. Beyond that particular judgment about this object, we do not have any other knowledge about that object at the time we are making the judgment: we are not assuming that it existed before, that it will further exist, how it "really" is as a thing in itself and so on. We just take the object as being "permanent" in the sense that it is *the* bearer of that property we ascribed to it.

Now, since the *this* is something that depends on what object we take as object of our judgment, it is perfectly possible for us to distinguish *epistemologically* between objects. That is, we make a judgment of experience about *this* object X, and another judgment about another object Z. We will take the *thisness* of X to be different from the *thisness* of Z^{35} . So at least in judgment we can operate with an individuation without any further postulate.

Let me turn now to the metaphysical individuation. This individuation is needed for the epistemological individuation to hold. We can think that *this* X is distinct from *this* Z if they are also metaphysically distinct. The metaphysical individuation is distinct from the epistemological one in that the latter concerns how the individuation works when we experience *now* the objects, whereas the former concerns the objects as they have to be separate from our present experiences of them. What criterion can be used for distinguishing X from Z then?

The individuation takes place in that objects never share the same empirical manifestations. Since an object has past and future manifestations and properties that belong to it, what seems to distinguish one object from another is precisely that two objects will never

³⁵ As showed by Adams (1979: 6-9), *this* is not a property of the object. It is non-qualitative and it is merely something used for distinguishing (for him metaphysically) the one object from another.

metaphysically share the same past and future, even though they could share the same real essence. This is because the real essence does not necessitate what past and what future an object has, but only allows the object to have certain properties and not others in these past and future manifestations.

Now, in what properties will they differ? Could they differ in terms of accidents (internal determinations)? It seems that they could have the same internal determinations, e.g. imagine any mass-produced objects or IKEA chairs. However, any object will differ from each other because of the spatial relations it has with other objects. There cannot be two objects with the same spatial relations throughout their entire causal history.

One problem with suggesting that the actual manifestations of the object will distinguish it from another object is that the object and the matter it is formed of will have the same spatial relations towards other objects. So I may say "the pair of headphones is 3m away from the bottle", but that is perfectly translatable into "the matter organized in a headphone-manner is 3m away from the bottle". The reply to this is simply that "headphones" and "headphone-organized matter" will differ in terms of their real essences because they are different concepts³⁶. As I will discuss in Chapter IV, matter can engage only in spatial relational properties (or what was called by Kant "external determinations"), whereas the "headphone" is not limited to that: it is also subject to undergo changes in its internal determinations, and it can also produce such changes in other objects.

³⁶ Kant himself gives an example where he says that illumination and warmth differ only as concepts, even if they have the same object of perception conceptualized: "Sometimes the accidents do not differ really, then the powers also differ only logically, e.g., to illuminate and to warm" (*Metaphysics Mrongovius*, 29:770).

Chapter IV – Real essences as external grounds for causation

In the previous chapter I showed we have to postulate that metaphysically there are real essences, and they are needed as internal grounds for explaining different properties an object has. In order to show that the proposed account on real essences is coherent I have to spell out how real essences are causally active. I start by discussing Watkins' account of unchanging grounds. This helps us gain the precise meaning he offers to essences as "unchanging" grounds, and then contrast that to the meaning I will offer to these "unchanging" grounds (following Kant's distinction between temporal series and temporal order). After that I will discuss how essential properties as external grounds for the changes in an object can act either directly on an object or indirectly. This helps in showing that in whatever manner essential properties contribute to causal processes, it is never the case that they are permanently active as Watkins suggested, and that not all essential properties may be required to be grounds for an effect every time. I end by showing that my account avoids the threat of an infinite regress feared by Watkins.

4.1. Attempting to fit Watkins' interpretation to real essences

As seen in Chapter II Watkins discusses the object's essence in connection to causal powers. He takes it that these essences are grounds *simpliciter* when they are merely grounds for the inherence of a property in an object, and those same grounds are active grounds when they are viewed as being engaged in causal relations. To illustrate this causal model, Watkins uses the

examples of objects defined as bodies in Kant's MFNS³⁷. "Body", as we have just seen, is viewed as a real essence by Kant, since it does not have an analytic definition. It has a real synthetic definition because the definition of body concerns all the objects of our outer sense, and its definition is formed out of principles derived from the principles of pure understanding.

Now, the essential property of body is mass. As an active ground, mass determines the strength of the attractive and repulsive forces (I will call them "physical forces" for short). For example S₁ through its forces changes S₂'s a = state of rest, into S₂'s b = being three meters away from S₁. Here a and b are called boundary states.

In any such change there are two continuities involved. The first is continuity of states: between S_{2a} and S_{2b} there are other intermediate states and S_2 has to go through all of them in order to arrive at state *b*. The second is continuity of S_1 's action on S_2 : in order to get from *a* to *b*, S_1 's causal power has to be active at all times otherwise S_2 could not go through all the intermediate states. What counts as causal power for Watkins is not S_1 's capacity, ability or potential to move S_2 , but the actual exercising of the attractive force whether or not S_1 succeeds in moving S_2 . Now, because of this continuous action of the force, the causal power is not itself a state (and as shown in the first chapter, it is neither a substance), hence it is an indeterminate ground. It is also temporally indeterminate, because the force is permanently active since it stems from an essence that is unchanging. So it has to be always active, i.e. at all times.

In Watkins' opinion, if we do not accept the unchanging grounds as always active and as temporally indeterminate, then we face two problems. First, we have to think of grounds as being active at some t_1 , but not at t_2 . Therefore we have to search for another ground that explains why that ground is active at t_1 , but not at t_2 ; the new ground may also be changeable so what follows

³⁷ MFNS = Kant's *Metaphysical Foundations of Natural Science* (1786, one year before the second edition of the first *Critique*)

is an infinite regress in terms of grounding determinations. Second, if the grounds are active at t_1 , but not at t_2 , then it is difficult to explain mutual interaction between substances since the two substances involved have to jointly determine each other's states, and this cannot be done by events or "temporary" grounds.

Regarding Watkins' causal model I will discuss two points.

4.1.1. Why only external determinations?

Causal processes involved between bodies are always in terms of attractive and repulsive forces. The effects produced by these are changes in spatial location. Even if S_1 is at rest, its action on S_2 makes S_2 change its position from being at place₁ to being at place₂. Or it involves a change from having trajectory₁ to having trajectory₂. In any case, the change is in terms of objects' positions in space and their movement in space. But then all the properties involved are in terms of external determinations. Even if a = being at rest, and b = being in motion, these properties are still external determinations, since the substance is at rest relative to another substance (while relative to another it is actually in motion), and being in motion is, again, relative to other substances.

Why is this talk only of external determinations problematic? Because objects, even though all of them have to be extended (since they are natural objects), do not possess merely external determinations. If we stick just with extra-essential properties, an object can also have, as said before, internal determinations. An internal determination does not seem determinable by attractive and repulsive forces. There have to be other causal powers, apart from the physical forces of attraction and repulsion that can determine the internal accidental determinations. Of course, what someone like Watkins could object to this is that what the physical forces determine are indeed only external determinations. But that does not matter for Watkins' account so much, because he took the *genus* of body and its real essence (mass) just as an example to illustrate how Kant's model of causality works. So we of course have to accept that there are internal determinations, but nonetheless they are determined by unchanging grounds in objects, and these unchanging grounds can perfectly well be those "real essences" I was talking about previously. What I reply is that even if I grant this, I think there still is a problem with the way in which the unchanging grounds are "unchanging".

4.1.2. What does "unchanging" mean?

There is a sense in which essences are unchanging because that is what an essence is. If the essence changes then the substance no longer is that same substance. So as grounds *simpliciter*, the essence has to be unchanging. But what I discuss now is whether the ground has to also be unchanging in the sense of being always an active determining ground. Such a causal power is active at all times even if it doesn't produce an effect (due to hindrances). We can all agree that this is the case with bodies and their physical forces. But what if there are other essences apart from that belonging to a body? Should all these essences also be permanently active?

Whether or not such essences exist at all, conceptually I think the answer is still no. There is a mathematical time and space pertaining to the mathematical categories and a dynamical time belonging to the dynamical categories³⁸. The mathematical time and space is concerned with producing a continuum or a composite whole and relating homogeneous units into measurable

³⁸ As was discussed in Chapter II.

time and space (lengths for instance). What can be generated through this mathematical conception of time and space are motions, spatial forms, measurable distances between bodies, arithmetical operations, divisibility of parts, the putting together of homogeneous parts in a whole etc. All these have in common the fact that there are homogeneous units or maybe objects, and these are related to each other as components of something else.

The dynamical time is not concerned with indexical time. It is concerned merely with the ordering of grounds: this X grounds this other state, so it is in this sense that the X is "previous" to the other state. Thus it perfectly may well be the case that in terms of measured (mathematical) time the cause and effect occur exactly in the same instant, but in terms of the dynamical time we still will determine one state or object as being the cause of the other one³⁹.

When Watkins says about the unchanging grounds that they are permanently active he uses this mathematical conception of measurable time. The grounds are active at all moments in time: at $t_1, t_2, t_3, ..., t_n$. In the case of the real essence of "body", I argue that the unchanging grounds require the mathematical conception of time or space for the following reasons:

First, in the case of bodies the attractive force is always active because otherwise there could not be changes in the body (the body does not change having itself as an internal ground). So it needs the forces of other bodies. The attractive force produces an effect in the other body once the external circumstances allow it, e.g. if a hindrance is removed or if other bodies interact with the other two. The other force is that of repulsion. It is always active in that it keeps other bodies at the distance from the first body, so that this one does not destroy itself from attracting all bodies to it and collide. So these permanently active grounds are both of them concerned with spatial distances between the objects.

³⁹ Kant introduced the distinction between time series (belonging to what I've called the "mathematical time") and time order at A203, and offered there several examples of simultaneous occurrences of cause and effect.

Second, in the case of matter forming the body, if the attractive and repulsive forces would not be always active in matter, then the body it composes would disintegrate. So what are related here are the bits of matter. If these bits do not attract each other, the body is not formed. If those bits together are not repulsive towards other pieces of matter, the body is not individuated or it may always attract other bodies and so self-destruct. In this case, the bits of matter are homogeneous units, and they are related to each other because they are components of a whole.

The two points show that in the case of bodies there are forces *always* active because of the need for keeping the components together (matter forming bodies), and for self-preservation (the case of bodies). These are necessary forces as *conditions for the existence of things*. But if these forces have to be always active (and so can potentially produce changes in other bodies), what reasons should we have to say that for any *genus* or thing there has to be an essence which is permanently causally active? As I have shown, the forces have to be permanently active because of issues concerning composition, change of states, and self-preservation. Apart from external and relational determinations (composition), there does not seem to be any need for permanently active forces, especially not in the case of internal accidental determinations. Watkins' requirement for the unchanging grounds to be permanently active is true for bodies because these involve external and relational determinations, but not true for internal determinations. His conception fits only the case of bodies.

The problem now is that unchanging grounds that are not permanently active seems difficult to conceive. As Watkins said, changeable grounds seem to lead to an infinite regress in determining grounds. Therefore I now propose an account of causal powers in terms of real essences that avoids this problem.

4.2. Causal powers are temporally determined relations

As mentioned, in a dynamical conception of time X as the cause of Y is the ground of Y, and if there is any sense in which X is "prior" to Y, it is just in the sense of grounding Y. In a mathematical sense of time, it may well be the case that X and Y occur at the same time. But dynamically, they do not.

Does this "dynamical" anteriority of X entail that X as a ground has to be permanently active in the sense spelled out by Watkins? Watkins' conception of causal power was of causal powers being permanently active in that the object, through these powers *constantly attempted* to produce a change in surrounding objects. I explained previously that it had to do so *constantly* because those physical forces were conditions of existence. But now, on the account I propose, there is no need for the constant exercise of a causal power since real essences are not conditions for the existence of objects. That is because on a dynamical conception of time we have the following situation.

There are periods when S_1 doesn't produce any change in any object and S_1 also doesn't attempt to change anything. Thus there is nothing to be grounded in anything else. S_1 cannot be an external ground if there are no changes in other objects. Then when S_1 is indeed causally active it is just between certain periods of time. What follows is that the effects it produces are never the same as it was in the case of bodies. These were permanently active and so produced the same type of effects in terms of external determinations e.g. moving this or that body closer to itself. Instead of that we will have to say of S_1 that it has the power to bring about different types of effects depending on what effect it will produce in the other objects. Thus the "causal power" should be defined as object S_1 's potential of bringing about effect *a* or *b* or or *c* or *d*: "B has the power to E" means that S_1 *can* produce a change from specific state *a* to this specific state *b* in object S_2 . Object S_1 can also produce a change from specific state *c* to specific state *d* in object S_2 . S_1 has the causal power to produce *b*, and the causal power to produce *d*. And these causal powers are manifest at different times, not at all times.

This regarded only what a causal power is. When explaining where causal powers come from, Watkins suggested that they are simple essential properties being causally active. But if causal powers are mere potentialities of some object to do this or that, can properties still be the place from where causal powers stem?

It seems we can say so. We can certainly say that some chemical reaction in which water takes part is due to its having this chemical composition and not another. But certainly we would not explain through the chemical components of water why the table got wet. And likewise, we would not use the property of liquidity to explain a chemical reaction. So it seems possible to say that there is a property Y, which belongs to S_1 , and S_1 through its property Y produces effect E_1 . And the same S_1 through a property Z produces E_2 . These properties Y and Z can always belong to S_1 without them being causally active. Y still belongs to S_1 , even though it is Z that produces E_2 . Then this means that S_1 has the potential (what Kant calls bellow in the quoted fragment the "faculty") to produce E_1 because of having Y, but it does not produce it now because Y is not yet causally active. And S_1 has the potential to produce E_2 because of possessing Z as a property, but not now because Z is not yet causally active. This interpretation is support by the following fragment:

The internal principle of the possibility of action is faculty, e.g. a machine. The determining ground of the faculty to act is endeavor <conatus>. Faculty with an endeavor

to act is power ... Faculty together with its determining ground (e.g. an applied lever) is power. Power (therefore faculty together with its determining ground is by itself sufficient for the actuality of the action. Therefore when a power is posited (*per se*), an action is posited"⁴⁰

We can use the quoted fragment for also showing that even if properties are responsible for there being causal powers, the latter are not themselves states or substances. Through the reference to "endeavor" this fragment further shows that although Y is not now active to determine E_1 , when it does so it acts continuously. As we've seen in discussing Watkins, there has to be a continuity of S_1 's action on S_2 , otherwise the whole effect would not be produced. The continuity of change from *a* to b^{41} , and the continuity of S_1 's action (through its property Y) are continuities maintained on the account I propose. The continuity of S_1 's action through its property will be, of course, in certain time lengths, e.g. S_1 through Y determines E_1 through an action from t_1 lasting to t_5 .

The continuous action of the causal power allows me to say in accordance with Watkins that the causal power is neither a state, nor a substance. The causal power is a relation S_1 has to E_1 . However, since this action lasts from t_1 to t_5 , it is not temporally indeterminate on my account, as it was on Watkins' account. He wanted to avoid causal powers to be temporally determinate so that he will avoid a regress problem of determining grounds.

⁴⁰ Kant E3585, 1780-9, note to §216 of Baumgarten's *Metaphysics*, 140. And again, this interpretation seems to be confirmed when he says: "The possibility of acting is faculty <facultas>, the possibility of suffering is receptivity <receptivitas>" (*Metaphysics Mrongovius*, 29:772).

⁴¹ As a reminder, the continuity of change from *a* to *b* is that of the object undergoing all intermediate states between *a* and *b*: "Thus, this cause does not produce its alteration suddenly (all at once or in an instant), but rather in a time, so that as the time increases from the initial instant *a* to its completion in *b*, the magnitude of the reality (b-a) is also generated through all the smaller degrees that are contained between the first and the last" (A208/B253)

Therefore I try to show now how although the causal powers are temporally determinate, they do not lead to an infinite regress because these properties are grounded in S_1 's real essence. Accepting real essences does allow us to say that if there is the potentiality for S_1 to act in a certain way such that it can bring about effect E, then this potentiality is explainable through S_1 's real essence. The real essence is taken as internal ground for that action. S_1 has these essential properties, and these explain why S_1 is allowed to act so and so.

4.3. How taking real essences as grounds avoids the regress problem of determination

Above I said that S_1 through Y brings about E_1 . Is Y an essential property of S_1 , or is it merely some property of S_1 (say an accident) that is used in causing E_1 ? At the beginning of Chapter III we saw that we are never certain whether some property is an essential property of S_1 . Epistemologically we can then say that "to our knowledge, S_1 through Y brought about E_1 , whether or not metaphysically speaking Y is part of the real essence of S_1 , either as an essential property or as an attribute".

I am not concerned here with how we can correctly identify the cause of the effect. Whether or not we identify correctly which property of S_1 is causally active in bringing about the effect, we still have the problem that we never get to know whether this property is an essential property or just plainly some other property of S_1 . Whether we identify correctly the property or not it is still the case that we posit the real essence as having some contribution in the causal process. Therefore I will now discuss the causal issue of properties being causally active on the metaphysical level. This discussion helps us show that whatever type of property Y is (assuming that we've identified Y correctly as the cause of E_1), it is a property grounded in one way or the other by the real essence of S_1 . There is no further ground to it. Hence the regress problem is avoided.

Let's stick to the case where we epistemologically identify Y (whether correctly or incorrectly) as the cause for E_1 . Metaphysically speaking real essences can be involved in this causal process in two ways.

4.3.1. Direct intervention of essential properties

The first case is when Y is an essential property of S_1 . I call this the direct intervention of an essential property belonging to S_1 . Y is then unchanging in the sense that S_1 will always have Y as a property throughout S_1 's history, and Y will also ground other properties of S_1 . Since we adopted the dynamical conception of time it is not required for Y to be permanently active. Y is not active in the following situations:

First, if the object is not causally active, then there is no essential property being causally active. There is no requirement for that since these properties are not conditions of existence as defined earlier. An object is not causally active if it does not produce any change in another object or if it does not attempt to do so.

Second, during some causal process it may be the case that Y is not a property needed for determining some effect in some object. I propose this interpretation based on an analogy with how Kant considered that some attribute of S_1 can be determined by part of S_1 's real essence, or by the whole of it⁴². I take it that if that kind of determination can hold for the real essence as internal ground, it can perfectly well hold for the real essence as an external ground for

⁴² "If I cognize a thing in accordance with an *attributum proprium*, then I can also define it by means of such an *attributum proprium*. E.g. man is an animal that judges. Because the judgment is an *attributum proprium* of a man, it must necessarily flow from the whole essence of man. If it flowed only from a part, then many things, which are different in essence, could agree with the essence [of man] as to *this* part" (*Vienna Logic*, 24:920).

determining effects in other substances. Under my interpretation it can be the case that some property Z by itself determines E_2 without any aid from Y even though both Z and Y can be essential properties. It can also be the case that Z and several other essential properties (but not Y) determines E_2 directly. Of course it can still perfectly well be the case that in other causal processes Z and all other essential properties of S_1 (including Y) determines E_2 directly. Hence as the first two cases show when S_1 is causally active it does not need to be so through all its essential properties.

In any case, there are always some essential properties belonging to the real essence that are active, even if not all of them. So this is a new sense (different from Watkins') in which the real essence is always active: whenever an S_1 produces a change in S_2 , S_3 , ... S_n , it is through properties belonging to the real essence of S_1 . Since I am not using the mathematical conception of time, that will mean that *only when* S_1 is causally active, it is through its real essence.

If we take now the water example again, then we have the case where the object is causally active through a property it has when it is conceptualized as "H₂O", and at another time it is causally active through some property of the natural kind "water". We can say then that it may be the case that both properties, though belonging to different concepts, are essential properties of the object. Another case can be such that only one of them is an essential property of the object, and it grounds the other one. Or maybe neither of them is an essential property, so they are both grounded in a third property which is an essential property of S_1 . The last two cases introduce the second way in which real essences are causally active.

4.3.2. Indirect intervention of essential properties (through being grounds)

If we take Y as determining S_1 , but Y is not itself an essential property (in the metaphysical sense), then one may at first say "it is actually the real essence that is causally active, and not Y". However, this is misleading: it employs a conception where we mistake Y as being the cause and essential property, and we could in fact gain knowledge of the "real" cause. But as said, we do not operate with such a conception of epistemic failure of identifying the cause. We can never identify the real essence. Then if metaphysically speaking it is some essential property X (which we note "EspX") that is causally active in bringing about E_1 , what will EspX's relation to Y be?

I propose that since the previous chapter introduced the "allowance" relation between the essential properties of an object and this object's other properties, the "allowance" relation can be introduced again. That is, EspX is an internal ground for S_1 's having property Y, and Y is causally active in bringing about E_1 .

This formulation may seem somewhat artificial. But it can be clarified if we concede that if metaphysically speaking Y is not an essential property of S_1 , then it can be either an attribute of S_1 , or some accident. It can be the case that accidents too are causally active: a change in S_1 's color can provoke a change in S_2 's color. And we will say that S_1 can have the color it has thanks to its EspX taken as an internal ground belonging to S_1 . Of course we can expand this to the water example. If the chemical components of water or the properties given in the definition of "water" (liquidity, being odorless etc.) are not essential properties of the object, then they have to have some internal ground in that object in order to be properties of it. In this way the regress problem of determining grounds is avoided. What stops the regress is the real essence of the object.

Even if EspX is just an internal ground for the inherence of a property, that still seems to make EspX causally active when Y itself is the cause of E_1 . One may object to this by saying that on such an account I am saying that X determines Y, Y determines E_1 , so in fact X determines E_1 , and so X is a cause of E_1 , even though a distant cause of it. But this does not seem to be the right picture because X is merely a metaphysical postulate, so it does not "determine" Y in the same way as Y determines E_1 . The latter determination is merely causal. But the former relation is one of allowance without which Y would not even inhere in S_1 , and would not ever be causally active. Hence Y needs this EspX as internal ground in order to inhere in the first place in S_1 , and thus actively determine an effect in a causal process. If S_1 had not EspX, but say EspQ, then this EspQ may not have allowed Y to inhere in S_1 in the first place.

4.4. External circumstances

Now that we have in view the two cases of how the essential properties are engaged in causal processes, we can draw the following conclusions. Firstly, whenever the object is causally active, the essential properties are "active" either as directly determining the effect, or as internal grounds of the properties that do produce the effects. Secondly, as internal grounds they are what stops the infinite regress of determining grounds that Watkins tried to avoid by positing permanently active grounds.

There is however one objection someone like Watkins may try to bring up: it has been indeed showed on my account how the essential properties of the object are engaged in the causal processes in which S_1 is involved. But Watkins' theory had the advantage (which

apparently is lost on my account) that he did not have to explain how come some ground is active between t_1 - t_5 , and not t_6 - t_{10} for instance⁴³.

I think an appeal to external circumstances is suited here. The object is causally active through Y between t_1 - t_5 mainly because of factors external to the object. There is some causal interaction between objects, certain properties are brought about and these are causally active after they are fully brought about. S₁ through some property Y acts on S₂. Let us say this makes S₂ have property Z. In the period of time in which Z is being brought about, Z does not act on any other object. It can act only after the causal action of S₁ through Y has ended. Hence after Z as a property is fully brought about, S₂ can act through Z on other objects. Z can be brought from t_1 - t_5 and perfectly well be an active ground between t_6 - t_{10} . And S₂ through property Z can be causally active in multiple ways. It can be the case that S₂ acts back on S₁. But it can also act back on another substance, S₃.

One can still object to this by saying that my reply only shows how S_2 can possess Z as a property, but it does not show why S_2 while possessing Z is not causally active at t_3 through Z, but is causally active at t_6 through Z.

A full reply to this problem would probably need an account on how mutual interaction between multiple objects occurs. However for short it can be imagined that S_2 can cause through Z a change in S_3 if some objects act on S_2 so that Z becomes causally active, i.e. S_2 attempts to produce some changes. And additionally to that if the external circumstances allow S_2 to be successful in its attempt, i.e. if there is no hindrance that wouldn't allot S_2 to act. And of course

⁴³ "For if one accepted changing grounds, then one would have to undertake an impossible task, namely explaining why grounds changed in precisely this way at precisely this time, and whatever explanation one gave, it would, so it seems, have to be in terms of further grounds that either changed or did not, in which case no real explanatory progress would have been made" (Watkins 2004: 483).

 S_3 can change in a certain way if S_2 acts on it only if the real essence of S_3 allows for that change to occur in S_3 .

Concluding remarks

Chapter II showed that we can take a particular object as distinct from the various ways in which we can conceptualize that individual. Although the category of substance may at first seem to apply just to objects as subsumed under general concepts, we can coherently formulate an account where the categories of relation are concerned with individual objects. Since our objective judgments can be about particulars, and the particular is distinct from the general concepts applying to it, then our objective judgments will be actually referring to particulars. And these particulars will be distinct from the concepts we can apply to them.

Chapter III discussed how in order to make possible the inherence of the essential properties of the concepts in the particular object, this object will have a real essence of its own. The real essence is not what individuates the object but it is what allows for different properties to belong to the object.

Chapter IV showed that because there is a dynamical conception of time, the real essence can be temporally determinate in its causal actions. Either the real essence through one of its essential properties acts for instance between t_1 - t_4 . Or if it is not the real essence which acts, then the property that is causally active is grounded in the real essence of the object. Thus the regress problem of determination is avoided. By discussing how external circumstances influence the actions of the object it was shown that whenever we ask "why is this property causally active in this period of time and not in another one" we can reply by appealing to the other objects as external grounds. Again, then, we can find determining factors for the inherence of a property in an object and its causal action. **Bibliography**

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