Agent-causation — neither upward nor downward

Uwe Meixner

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1. The Possibility of the Total Absence of Causation

Arguably, the first idea philosophers have to get rid of in order to liberate their philosophical imaginations is the idea that causation is event-causation. In their struggle against dualism, physicalists (mainly Jaegwon Kim) have not forgotten to maintain what is in effect *physicalistic causal monism*: the view that there is only one relation of causation, one exclusively between (purely) physical events. However, from the point of view of a liberal, open-minded metaphysics—a point of view neither science nor philosophy forces us to renounce—it is implausible that causal power resides in physical events, for the simple reason that it does not seem to reside in events at all. Events do not have causal power, and therefore there is no event-causation: no causation by events. Scrutinize an event as much as you like, you will not discover any causal power in it (whether you consider the event in itself, or in the context of other events—which are just more of *the same* and form, in fact, just another event, which is just larger, but with nothing new in it regarding causation). Considered objectively, one event just happens after another, or simultaneously with it. There is, it is true, an objective regularity in the progress of events, even a strict regularity; but it cannot be the foundation of event-causation; at best it is itself the outcome of causation—not, however, of a causation by events. Does the so-called counterfactual analysis rescue event-causation? We do indeed assert many counterfactual conditionals about events: "If E had happened, E′ would have happened", "If E had not happened, E′ would not have happened"; but it is clear that the truth of such conditionals and the necessity implied in them are neither based on a causal power of events nor gives causal power to events (whatever is your favourite analysis of counterfactual conditionals). Since there is no event-causation without events having causal power, it follows that whatever it is that is analyzed by the so-called counterfactual analysis of causation, it is not event-causation. The truth is: there is no such thing as event-causation, since there is no such thing as the causal power of events.[1]

It is no great progress to maintain that causes are, instead of events, *facts* (as advocated, for example, in Mellor 1995). For is there any causal power in *facts*, physical or non-physical? If there is, it is certainly not apparent. Scrutinize a fact as much as you like, you will discover no causal power in it. In fact, it seems that there is no causal power whatever in anything whatever. Nobody, to date, has ever conclusively refuted Hume's (or Russell's[2] or Wittgenstein's[3]) comprehensively negative intuitions about causation (or Malebranche's, al-Ghazali's, or Nicholas of Autrecourt's, which are prevented from being just as comprehensively negative only by their proprietors' faith in the causal power of God). The apparent total absence of causation will be the impression of most—and ought to be the impression of all—philosophers as soon as they look at the phenomena without explicit or implicit unquestioned presuppositions, whether they come from popular science, religion, tradition, common sense, or indeed from rational philosophy. Like the non-existence of the "outside" world, the non-existence of causal power—and hence the non-existence of causation—is a doxastic (not just an alethic) possibility which philosophical reason has to reckon with. Philosophical reason may ultimately reject it, but has to do so in a perfectly responsible, principled way. One such way is proposed in the next section.

2. The Justification of the Existence of Agent-Causation

One of the presuppositions of philosophical reason itself is the *Principle of Sufficient Cause*: "Every event has a sufficient cause" (PSC). This presupposition can be questioned, but let us not give up PSC, since giving up PSC almost amounts to philosophical reason giving up itself. Since there are events (meaning: *real* events, events which happen, events which take place), it is an immediate consequence of PSC that there is causation, and that there is at least one cause. Causal nihilism is, therefore, out of the question. On the other hand, let us follow the intuition—which, note, is only *a part* of the *entire* Humean anti-causal intuition: the intuition of the *total* absence of causation—that causal power is absent *in events and facts*, not to speak of properties and other universals.[4] If there is no causal power in an entity,[5] then this disqualifies it from being a cause. Therefore, events and facts are not causes. Which entities, then, *are* causes? The question is apt, since it is already decided that there is at least one such thing.

While accepting the existence of causation, let us give up the ontological homogeneity of causes and effects. Effects, indeed, can very well be regarded as events or facts; let us stipulate that effects are always events.[6] The entities, on the other hand, that are capable of being causes are *monads*

(or *simple substances*). There is not just one monad, there is a plurality of them. Monads are entities that have no temporal part: no proper temporal part and no improper one, which means that a monad does not even have itself as a temporal part. Events, in contrast, always have a temporal part: each event has at least itself as an improper temporal part, and usually it has more temporal parts than that. Put in a different way: events possess an intrinsic temporal dimension, monads do not. Events are in time, monads are not in time in any way—which, however, does not mean that they cannot stand in significant relations to times and events. Quite the contrary: monads are *per se* event-directed origins of causation; they—alone or in groups—make event-*possibilia* happen, make them real, make them come about: make them *events*.[7] In their totality, monads are responsible for the world-event: the world, *qua* event, is caused by the totality of monads. Now, the kind of causation that monads or, usually, groups of monads exert is called "agent-causation", and agent-causation is all the causation there is.

3. Objections

It might be objected that such a view of causation is anti-scientific. This objection overestimates the role causation plays in science.[8] Science, to the extent it is truly distinct from natural philosophy and metaphysics (as science is usually claimed to be), is in the business of finding and describing—ideally in the exact language of mathematics—regularities, in or behind the phenomena, regularities which will be of essential service—absolutely indispensable—for reliably predicting or retrodicting the phenomena wherever prediction or retrodiction is needed or wanted. Causation, in turn, is entirely unnecessary for being successful (indeed, *very* successful) in this very honourable, *scientific* business. The objection would have had more bite if it had been claimed that the identification of causation with agent-causation is contrary to reason, and not just anti-scientific. Such a claim, however, would itself have hardly been reasonable.

Some will say that agent-causation is "mysterious".[9] If it were so, would it automatically follow that agent-causation is unworthy of consideration and respect? Hardly. Agent-causation, mysterious or not, at least stands a chance of existing, while event-causation does not exist. If, however, it be insisted (as is likely) that event-causation *does* exist, then it is still true that agent-causation cannot be considered to be more mysterious than event-causation; for if there is event-causation, then it is utterly *mysterious* what it consists in—in view of the fact that every extant interpretation of so-called event-causation leads to the result that *what is so called* ("event-causation") does not seem to be causation at all; because every extant interpretation of the expression "event-causation" comes down to the same: The alleged causal nexus between events does not seem to be grounded *in* events. In the

events *themselves*, to repeat, there appears to be no causal power; events, therefore, do not seem to have any causal power. Thus, there does not seem to be any such thing as *the causality of events*. The same is true *mutatis mutandis* of fact-causation.

Surprisingly, some find the mere fact that it seems hard to say *when* an agent-cause causes an event an incriminatory feature of agent-causation.[10] The problem has an easy solution: an agent-caused event is caused simultaneously with its occurrence; it is, therefore, agent-caused at no other time than at the time of its occurrence. It can be inferred that the monads involved in the act of agent-causation *exist at the time* of the caused event; but the attribution to them of existence *at a time* is strictly an instance of *analogical speech*.

The proffered solution is easy; is it also satisfactory? Here one should take into account that, also in the case of event-causation, the predicate of causation is normally taken to be *timeless* (consider, for example, causation according to David Lewis's influential analysis: "is a cause of" or "causes" carries no time-index, neither explicitly nor implicitly; accordingly, the truth-value of is application to given relata x and y does not vary with time). Thus, also in the case of event-causation, information regarding *the time of causation*, if wanted, is normally—for most theorists—picked up not from the causal relation itself, but only from the events connected by it as cause and effect. And the time of the cause has no prerogative over the time of the effect (especially so if cause and effect are simultaneous, which I see no reason to forbid). Thus, in event-causation, too, the time of causation can very well be taken to be the time of the effect.

4.   The Nature of Agent-Causation

An act of agent-causation involves two acts, one preparatory, the other consummative:

(1) The agent—a monad or a group of monads—selects an event-*possibile* for actualization.

(2) The agent gives actuality to the selected event-*possibile*.

In short, agent-causation is *selection* (for actualization) *plus bestowal* (of actuality). The two acts have an enabling basis:

(3) There is, given to the agent, exactly one set of two or more selectable event-*possibilia*. Each event-*possibile* in that set starts with the same time-point t ["the starting point of actualization"], and no two event-*possibilia* in the range can co-occur (in other words: they are incompatible). Though each event-*possibile* in the range is selectable, only one event-*possibile* can be selected (by the agent) in the actual selection, and

one event-*possibile* must be selected. *Which* event-possibile is selected is, however, entirely up to the agent. *Choose!*

An at least two-membered set of selectable event-*possibilia* for an agent X as described in (3) is called "the *extension* of the causal power of X at time-point *t*". Clearly, the more event-*possibilia* are in that set, the greater is the extension of the causal power of X. Obviously, a causal power is something else than a capacity or ability, and something else than a disposition. In contrast to causal powers, capacities and dispositions are not *per se* associated with active choice; they are *per se* uniquely determined in what they are capacities and dispositions *for*.[11]

Possibly, the selection of an event-*possibile* for actualization is *ipso facto* its actualization (say, because actuality automatically flows to the selected event-*possibile*). If so, *the bestowal of actuality* can be separated only *in thought*—conceptually—from *the selection for actualization*. Our (human) experience with what we consider to be our *very own* actions seems to point in the direction of a merely conceptual distinction between the two acts; but then, some of us (as it seems to them: all on their own) select an event-*possibile*—and to their considerable surprise the selected event-*possibile* does not become actual (that is, an *event*). Such a situation is, of course, unusual. Perhaps there was no selection, and therefore no selection *without actualization*, either? In any case, the definition of agent-causation is this:

(4) X causes Y if, and only if, (a) X is an agent [a monad or group of monads] and Y an event-*possibile*, (b) X selects Y for actualization [from the relevant selection-set], and (c) X bestows actuality on Y.

Three logical comments: (I) As has just been pointed out, "X bestows actuality on Y" may perhaps already follow (broadly) logically from "X selects Y for actualization". (II) Conversely, "X bestows actuality on Y" can certainly be understood in such a manner that it (broadly) logically implies "X selects Y for actualization". (III) It is a (broadly) logical consequence of (4) that Y is an *event* if X causes Y; for an event-*possibile* on which actuality is bestowed becomes thereby an *actual* event-*possibile*, that is: an *event* (in the sense of "*real* event").[12]

It is an illusion to think that any of the concepts employed in the past or present philosophical discussion of causation are any clearer or more relevant to causation than those that figure in (4). After all, the core of causation is the *actualization* of event-*possibilia*: *making them happen, making them come about, making them events*. (4) can be understood in such a way (see comment (II)) that it manifestly captures precisely this core-concept of causation: causation *qua* actualization;[13] accordingly, it manifestly gives the role of *actualizers*, of *causes*, to entities which—unlike events and facts—are truly capable of (active) *actualization*: agents.

5. The Nature of Agents

As has been said before, agents are monads or group of monads. Given the nature of agent-causation—given the large role that *choosing* plays in it (see (3) and (4))—monads must be conscious entities: centres of intentional consciousness. There is no *basic* choosing—that is, *choosing done by monads*, which choosing is the basis of the collective, non-basic choosing done by groups of monads—without intentional consciousness, since there is no choosing (in the primary, basic sense) without a consciousness of alternatives. In view of what has just been said, it is an obvious corollary of (4) that all causes are either conscious beings or groups of conscious beings—an idea which is so contrary to present habits of thinking about causation that it certainly takes some effort to get used to it.

Consciousness provides its centre—the subject of consciousness, the monad—in a most immediate, vivid manner with information about the current situation of the subject, vividly retaining information about the immediate past while vividly offering a horizon of immediate future possibilities. The biological point of this type of information is to guide life-preserving—or more generally speaking: wellbeing-producing—*action*. The biological point of subjects, of centres of consciousness, of monads is to be an agent—or at least to participate indispensably in an agent—which *exerts agent-causation* (hence: which *acts*) for the good, the wellbeing (in particular, the continued existence) of the subject's *organism*.[14]

An embodied monad, and the individual (stream of) consciousness of which it is the subject, emerges from, and remains tied to, an organism—of course, without being *caused* by that organism, or by any event inside or outside of it. The emergence of monads from living bodies—organisms—is a strictly non-causal matter. Even if the non-existence of causes that are events, facts, or properties is *not* accepted (as is likely), one has to admit that, in any case, emergence does not seem to be a causal affair. Gravitation *emerges* (or *arises*) from mass in a manner that can be described with mathematical precision; but mass does not seem to cause gravitation, nor do *instances* of mass seem to cause *instances* of gravitation.[15]

Every embodied monad experiences the physical world from a different perspective. Its locus of perspective—its (movable) watchtower, so to speak—is its body, its organism.[16] The monad's body is, in being the monad's locus of perspective, also the monad's primary intentional object: it maintains first place as the *one* physical object which the monad is conscious of in a most intimate manner (now and over time). One of the many aspects of this intimacy is that the monad is conscious of being able to manipulate the physical object in question (or parts of it) *directly*: it obeys its will. The entire highly complex, highly distinguished intentional consciousness which is so very intimately directed at *one* particular living body— *care* for its survival and well-being is central for it—is the *subjective* basis of a monad's calling a body "my body". The *objective* basis of its being *indeed*

the monad's body is, in turn, the monad's emergence from it, with all the "directedness" involved in this emergence: the manifold solicitous directedness at *this* body, the natural object of the monad's care.

It is not contrary to reason to suppose that there are not only embodied, but also non-embodied monads (perhaps even disembodied ones). In fact, if *every* event is to have a sufficient cause—as is postulated by PSC—then one can hardly do without non-embodied monads (in order to have "at hand" all the causes which are needed: the *embodied* monads, even collectively, do not seem able to provide a sufficient cause for every given event). It should be noted that *any* monad, whether embodied (that is, *having* a body)[17] or not, is a non-physical—hence immaterial—particular (in addition to being a particular without intrinsic temporal dimension); for every monad is a subject of consciousness, and no subject of consciousness is a physical entity (as is argued in Meixner 2004a and in Meixner 2010a; see also, most recently, Meixner 2014b). It is plausible that every monad is capable of being an agent-cause; it is even more plausible that every monad is capable of *indispensably participating* in an agent-cause by being a member of a *monad-group* which is an agent-cause, contributing, as a member (but perhaps without itself causing anything in so contributing), indispensably to the monad-group's causing: to the group's selecting an event-*possibile* for actualization and bestowing actuality on it. On the other hand, it cannot be absolutely excluded that there are monads which are *mere* subjects of consciousness, even monads which are incapable of *action*, that is, incapable of being an agent-cause and incapable even of indispensably participating in an agent-cause. Such monads, it seems, would have to be non-embodied (for what would be the point of their having a body?). Yet, surprisingly many philosophers have held that, on the contrary, *human*—hence *embodied*—selves are *epiphenomenal* selves: selves—monads—which are *mere* subjects of consciousness and quite incapable of action.

6. The Existence of Non-physical Agents

Since agents—monads or groups of monads—are asserted to be non-physical entities, it is to be feared that at this point, at the latest, no reader is ready to read any further. However, one should at least listen to arguments. Here is one:

> Quantum theory strongly suggests that *(P) some physical events do not have any sufficient physical cause*. If one assumed that *all causes are physical*, or—considerably less audaciously—that *all causes of a physical event are physical*, or at least—still less audaciously—that *every physical event which has a sufficient cause at all also has a sufficient physical cause*, it would follow logically—with each one of these possible assumptions and *(P)*—that some physical events do not have any sufficient cause. But this contradicts PSC. Therefore, not only is each of

the three just-mentioned possible assumptions false on the basis of *(P) and* PSC (the second assumption mentioned is the *Strong Principle of Physical Causal Closure*, the third one the *Weak Principle of Physical Causal Closure*), it also follows with *(P) and* PSC that some physical events, though they do not have any sufficient physical cause, do have a sufficient non-physical cause. Given what has been said before in this essay, such a non-physical cause can only be a non-physical agent.

Instead of accepting non-physical agent-causes, some readers, I am afraid, will prefer denying PSC (while clinging to a principle of causal closure, or perhaps even denying the very possibility of there being a non-physical cause); others, following Einstein, will prefer sticking to the—desperate— hope that quantum theory will some day be replaced by a theory which is more congenial to what *they* consider to be the truth: the negation of *(P)*, which negation is logically equivalent to the (formerly quite undisputed) principle that *every physical event has a sufficient physical cause* (the *Innerphysical* Principle of Sufficient Cause: IPSC). I suggest that it is better to be rational than to be a materialist.

7. Sophistication in the Wish to Get Rid of Agent-Causation, and a Serious Consideration of Philosophical Plausibility

If quantum theory is true, then it is not true that the course of the physical world is completely determined by the initial event—the "Big Bang"—and the laws of nature. Many philosophers are ready to admit this—and are, to boot, ready to admit that quantum theory, even as it is now, is true. They nevertheless believe that the *macroscopic* course of the physical world is, still, completely determined by the initial event and the laws of nature (which position, if true, would make quantum theory anthropologically irrelevant). They believe that some *microscopic* physical events which underlie the macroscopic ones are, indeed, *not* completely determined, and are to some extent ontologically, not just epistemically, accidental. In fact, they are quite ready to hold that some microscopic physical events *have no sufficient cause*, physical or non-physical. But they also believe that this does not make any difference at all to what is going on in the physical world *macroscopically*: what is going on macroscopically remains, in its macroscopic nature, completely determined (by the Big Bang and the laws of nature). There is, therefore, no call for agents and agent-causation to fill any gaps of determination. On the micro-level, *blind chance* ("randomness") does all the work that remains to be done; on the macro-level, no work remains to be done: *nomological determination*—there is no substantial call for calling it "causation"—is taking care of everything after the Big Bang.

However, it does not seem plausible that, *given* the Big Bang and the laws of nature, all *subsequent* stretches of time in the physical world could not

have been *macroscopically* filled otherwise than they have in fact been filled. Was it determined by the Big Bang and the laws of nature that the Holocaust was to happen? Was it determined by the Big Bang and the laws of nature that atomic bombs were to be built and that the first one was to be dropped on Hiroshima? The answer "yes" to questions like these is philosophically implausible to a very high degree—which does, of course, not mean that the "yes" answer may not be the *true* answer. In spite of massive implausibility, it may be true that the Big Bang and the laws of nature, all by themselves, determined that the Holocaust was to happen, that atomic bombs were to be built, etc. This proposition *may* be true—that is, nothing that entails its falsehood has ever been proven.[18] However, the assumption that it is true flies in the face of firmly entrenched *intuition* (weren't the Nazis—the worst of them—the initiators of the Holocaust, and not the Big Bang and the laws of nature?). Intuition *is* a legitimate source of philosophical judgement. As long as the force of intuition is not undermined by rational considerations (which force is rationally undermined, for example, in the case of the apparent *total* absence of causation), the force of intuition is itself *rational*. Now, intuition proposes very forcefully that agent-causation—a third factor, different both from chance and from nomological determination—contributes to specifying the macroscopic course of the physical world after its initial state, for the better in some places and times, and for the worse in others. So far, the authority of this intuition stands.

8. Levels of Physical Reality

There is, however, a question which seems important and difficult to answer: At which level of physical reality does agent-causation "come in"? Where is its "point of impact"? Is it at the micro-level, or is it at the macro-level? The opponents of agent-causation take it for granted (compare the previous section) that agent-causation cannot enter at the macro-level of physical reality, and that it cannot enter at the micro-level, either. It cannot enter at the macro-level because there is no "slot" of indetermination left for it at that level. It cannot enter at the micro-level because chance is, allegedly, already filling all the slots of indetermination which may exist on the micro-level. Indeed, since the micro-level of physical reality appears to be cognitively inaccessible to agents, it seems obvious in any case that agents cannot have any causal influence *there*.

In order to throw light on the question(s) just asked, the first thing to get clear about is the idea of a "lower" micro- and an "upper" macro-level of physical reality. Consider a physical event E, say, the physical activity of a human brain between time-points t_1 and t_2. Since E is not a momentary event, E has many phases, ultimately infinitely many *momentary* phases. Each phase of E is itself an event, and each momentary phase of E is a momentary event. Since E is a physical event, the content of each of its momentary phases is physical. Consider a momentary phase of E: E^*. The

content C(E*) of E* is, unlike E* itself, not an event. C(E*) has no temporal parts; but it has, of course, spatial parts—spatial parts which are arranged in a momentary spatial constellation.

C(E*) (that is, a human brain at a certain moment in time: at t^*, without that moment being intrinsic to it) is a physical object consisting both of filled and empty spatial regions (the *temporal* location of which is left unspecified). There are many levels of spatial partitioning of C(E*): the level of 1 (improper) part in the partitioning of C(E*); the level of 2 (proper) parts in the partitioning of C(E*); the level of 3 parts in the partitioning of C(E*), . . ., the level of 1 million parts in the partitioning of C(E*), ... The particular manner of spatial partitioning at each level is arbitrary; only the following two features must be uniform throughout: (i) the different parts (in the partitioning) at each level are spatially *disjunct*: they have no spatial part in common; (ii) the mereological sum of the parts at each level is always the same: it is C(E*).

Hierarchies of levels of spatial partitioning can be formed. An interesting hierarchy (among many) is *an exponentially jumping iso-dichotomously connected hierarchy*: the first (or highest) level of such a hierarchy is the level of one (improper) part in the partitioning of C(E*); the second level is the level of two (proper) parts in the partitioning of C(E*); the third level is the level of 4 parts in the partitioning of C(E*); the fourth level is the level of eight parts in the partitioning of C(E*); . . . . In general: the Nth level in the hierarchy is the level of 2^{N-1} parts in the partitioning of C(E*). Moreover, the partitioning at level N+1 in the hierarchy is produced by dividing—virtually, not really—all the parts of C(E*) at level N into two, approximately equal parts, that is: it is produced by dividing those parts *iso-dichotomously*. Thus, the partitioning at level N+1 of the hierarchy is *connected* in an obvious manner with the partitioning at level N.

If space is continuous, an exponentially jumping iso-dichotomously connected hierarchy of levels of spatial partitioning of C(E*) can go on forever: no ultimate level is ever reached, the partitioning merely gets finer and finer *ad infinitum*, with huge numbers of parts of C(E*) on the lower levels (indeed, already when those levels are still not very far from the highest level). Now, many people believe that the lower levels in the hierarchy are ontologically more *fundamental* than the higher ones. They also believe that there is such a thing as a *naturally ultimate*—and therefore *simpliciter* ontologically fundamental, "absolute"—level in an *appropriately constructed* exponentially jumping iso-dichotomously connected hierarchy, or at least a level which, for all purposes, can be treated as if it were the naturally ultimate level, the "ultimate reality". At such a level, there is supposed to be *one* elementary particle in every part in the partitioning of C(E*), or in other words: every part in the partitioning of C(E*) at that level is supposed to consist of exactly one (positioned) elementary particle surrounded by empty (more precisely speaking: "matterless") space.

9. Levels of Physical Reality and Causation

However, *how* might such a peculiar level of spatial partitioning of $C(E^*)$ be *ontologically fundamental and "absolute"*? At this point, it ought to be already clear that it is absurd to assert that the part-constellation at the "fundamental" level *causes* the part-constellation at the higher, "less fundamental" levels. It does no such thing (for one thing, it would imply the existence of fact-causation; but there is no fact-causation). All that is true is that the part-constellation at every higher level of the hierarchy can be reconstructed from the parts given, in a certain constellation, on the "fundamental" level: by "putting together again" what had been "taken apart". In the end (after going all the way back in the tree of dichotomous division), the parts at the "fundamental" level—taken with their positions in space—add up to form $C(E^*)$. However, *the same* is true of the parts at *each* level of the hierarchy. On a closer look, there is no ontological prerogative of the micro-levels— the levels with high numbers of parts in the partitioning of $C(E^*)$—over the macro-levels—the levels with low numbers of parts in the partitioning of $C(E^*)$. One level of the partitioning of $C(E^*)$ is as good, ontologically, as any other. If one level in the (appropriately constructed exponentially jumping iso-dichotomously connected) hierarchy is *naturally ultimate and ontologically fundamental*, then we should be able to give objective reasons for this being really the case. But we cannot give any such reasons.

It is a misconceived question if it be asked at which level of physical reality—specifically, at which level of $C(E^*)$—agent-causation "comes in". This has nothing to do with agent-causation specifically; if there were event-causation, it would likewise be a misconceived question if it were asked at which level of physical reality—specifically, at which level of $C(E^*)$—event-causation "comes in". It is tempting but false to think of the levels of spatial partitioning of a physical object (for example, of those in an exponentially jumping iso-dichotomously connected hierarchy of such levels) *as spatial levels*, one over the other, like floors in a high-rise building. In a high-rise building, of course, causation can come in at a certain level, and from there it can and go *upward* or *downward* (or both ways). But there is no coming-in of causation *at a certain level* of $C(E^*)$'s levels of spatial partitioning, and there is no upward or downward causation between them. In particular, there is no upward or downward causation between a "fundamental" micro-level of $C(E^*)$ and a non-fundamental macro-level. All that is there— at those levels—are partitionings of always the same: of $C(E^*)$, of a human brain at t^*—partitionings always consisting of the same: spatially located parcels of matter and empty space, which, in sum, always come to the same: $C(E^*)$, a human brain at t^*. The only difference between the partitionings is that they consist of different numbers of spatially located parts of $C(E^*)$— parts which, taken in sum, always are $C(E^*)$. And this remains perfectly true if the partitioning at each level (in an appropriately constructed hierarchy) is *natural*, in other words: never "cuts through" an elementary particle in

$C(E^*)$. Clearly, what happens to the 100 pence that are in a pound does not *cause* what happens to the pound, nor vice versa; for what happens to the pence happens *ipso facto* to the pound, and vice versa, because the pence in the pound just *are*, in sum, the pound. And what happens to the thousands of pixels in an electronic picture does not cause what happens to the picture, nor vice versa; for what happens to the pixels happens *ipso facto* to the picture, and vice versa, because the pixels in the picture just *are*, in sum, the picture.

10. The Work of Causation

The specification of the course of the physical world (after the Big Bang) is the result of the co-operation of, at most, three factors: (ontological) chance, nomological determination, and agent-causation. Now, unless we are ready to admit a defeat of reason (not a small one), PSC must be upheld. As a consequence, chance drops out of the picture, and no more than two factors remain: nomological determination and agent-causation. I have offered arguments for the thesis that agent-causation is *needed* (see sections 6 and 7). And I do not doubt—at least not here—that there is a place for nomological determination. Many philosophers would not hesitate to call nomological determination "causation"; but nomological determination is no such thing (in particular, it is not event-causation).[19] This is so because neither laws of nature nor the events or facts which serve as inputs to laws of nature are causes. These items are not causes because they are devoid of causal power. Thus, to repeat, *the only causation is agent-causation*. Causation is (identical to) agent-causation. If in common speech events are called "causes" (as in "The cause of death was a stroke"), the underlying relation is, in truth, not causation, it is only nomological determination. (However, as in so many other cases, it is presumably a wise policy to follow Berkeley's advice in *The Principles of Human Knowledge*, section 51: "[W]e ought to think with the learned, and speak with the vulgar"; see Berkeley 1980.)

In the two previous sections, I proceeded from a physical event E (the physical activity of a human brain between time-points t_1 and t_2) to a momentary phase of that event: E^*, and from there to the content of that momentary phase: $C(E^*)$, a non-event, and from there, in turn, to spatial partitionings of that content. The manner of the spatial partitionings of $C(E^*)$—whether fine-grained or coarse-grained, whether natural or not, etc.—turned out to be causally irrelevant; or to speak precisely: that manner turned out to be irrelevant for the *ontological* description of causation.[20] This does not mean, of course, that $C(E^*)$ itself—a momentary brain-state—is causally irrelevant. Quite the opposite is true: $C(E^*)$ is almost all that E^* is (for the event E^* can be represented by the ordered pair $<t^*, C(E^*)>$) and E^* is certainly *not* irrelevant for the causation of E, of which event it is, after all, a momentary phase.

On the basis of PSC, E must have a sufficient cause. How does this cause do its work of causation? One thing seems clear: no matter how E is

(temporally) partitioned into phases, whatever causes E also causes all of E's phases in the partitioning, *and vice versa*. Thus, any sufficient cause of E is also a sufficient cause of E*, and of every other momentary phase of E. And whatever causes every momentary phase of E (including E*) also causes E.

Here is how a sufficient cause of E—that is, an agent C: a monad or a group of monads—does its work of causation. Let us presuppose that this work is maximally non-otiose: that neither E nor any part-event of E is already nomologically determined by an event which is *not* a part-event of E (but is, for example, *prior to* E).[21] Moreover, let it be excluded, as uneconomical and pointless, that an event is caused *both* directly and indirectly by the same agent.[22] It follows that a momentary phase E^M of E is *either purely directly* caused by C (that is: caused by C, but *not* via C's causing some other event which nomologically determines E^M) *or purely indirectly* caused by C (that is: caused by C, but *only* via C's causing some other event which nomologically determines E^M). The causation, then, of E by C may, for example, consist in this: C causes the initial momentary phase of E, $E(t_1)$, purely directly; all the other momentary phases of E are caused by C purely indirectly: via being nomologically determined by $E(t_1)$. *Or* the causation of E by C may consist in this: C causes the initial momentary phase of E purely directly. Then, on the basis of $E(t_1)$, nomological determination sets in (and with it purely indirect agent-causation: given the causing of $E(t_1)$ by C), which determination, however, does not reach a certain *other, later* momentary phase of E. This other momentary phase of E is again caused by C purely directly. Then, again, nomological determination sets in (and with it purely indirect agent-causation)—and so on. The oscillation between purely direct and purely indirect agent-causation of momentary phases of E continues until the causation of E by C is completed. *Or* the causation of E by C may consist in this: every momentary phase of E is caused purely directly by C.

What the causation of E by C cannot consist in is this: every part-event of E is caused purely indirectly by C. This is impossible because we have presupposed that no part-event of E is nomologically determined by an event which is *not* a part-event of E (*without* this presupposition, the causal scenario in question would, of course, be possible). The impossibility result follows on the basis of a specifically agent-causal principle, ACP:

> If an agent causes event X indirectly, then the agent causes some event Y directly and Y nomologically determines X.

Here is the proof of the impossibility result: Suppose (for *reductio ad absurdum*) C causes every part-event of E purely indirectly. Let E^P be some part-event of E. It follows that C causes E^P purely indirectly. On the basis of ACP it follows further that C causes some event Y directly which nomologically determines E^P. Since E^P is a part-event of E and since, according to presupposition, no part-event of E is nomologically determined by an event which

is *not* a part-event of E, Y must itself be a part-event of E—and one which is directly caused by C (as has already been established). Therefore, there is a part-event of E (namely, Y) which is not caused purely indirectly by C—in contradiction to the initial supposition.

Evidently, for describing the work of the agent in causing E there is no need whatsoever to speak of "downward causation" or "upward causation". As should be clear by now, the very idea of upward and downward causation is a red herring. There is, indeed, one sense of "downward causation" in which downward causation exists: if an emergent entity causally affects the basis from which it emerges—for example, if a monad causally affects the brain from which it emerges, *together* with the consciousness in which it is embedded.[23] Yet, considering that there is no "upward causation" and that "downward causation" is just *agent-causation*—all the causation there is—why speak of "downward causation" even in this sense?

11. The Brain-Agent

Considering that E is the activity of a human brain between time-points t_1 and t_2, and that C is the agent that causes E (if a time for this is to be allotted, it is the time between t_1 and t_2)—*which* agent, specifically, is C? Suppose E is an activity of *my* brain while I am wide awake. Now, I—the subject of my consciousness, the monad of my body—am certainly participating in C. This participation is a natural fact: I—a non-physical organ of my organism—simply fulfil a function which is advantageous for that organism (and which has long been favoured by biological evolution). It is important to note that for participating in an agent which causes brain-events *of mine*—for participating in the agent-causation of such events (that is, in their selection for actualization and in the bestowal of actuality on them)—I need not be knowledgeable about the brain's mechanisms, as little as a driver needs to be knowledgeable about a car's mechanisms in order to drive it well; as little as a computer user needs to be knowledgeable about a computer's mechanisms in order to use it competently. All that is needed is an appropriately practical, easily manageable *user-surface*; in my case—a brain-user among milliards of others—such a user-surface is immediately given to me in consciousness.

However, in view of the vast complexity of E, it does not seem realistic that C consists merely of *me* and of nothing else. But which other monads, beside me, are in C? Certainly not many. Some would not hesitate to say that one such monad is—rather unobtrusively—*God* (for who if not He is really capable of bestowing actuality on my choices, who if not He can make them *realities?*). If E is—in further effect (that is, in agent-causation extended by nomological determination)—not for the morally better but for the morally worse, further monads in C might be some devils (or, indeed, simply *the Devil*) who *contribute to*, though not by themselves *effect*, the evil choice which I—*mainly* I—make (and which God, respecting my creaturely

autonomy, transforms into a reality). Most philosophers are rather far from—indeed, abhor—such "medieval" views today. In contrast, there is today much talk of "Nature" doing this and doing that (for example, "creating"). Is all such modern talk of "Nature's doings" meant to be purely metaphorical? *Should* it be so meant? In any case, one allows oneself to be duped by an illusion if one believes that a *complete explanation of* E has been provided as soon as one has described E, as detailed as one is able to, in terms of the laws of nature and the electrochemical micro-processes which are part-events of E. And matters will not be significantly improved if one also considers the wider physical context—and nothing more than that. For if the hope for a complete purely physical explanation of E is to be upheld, then behind each "initial" physical condition—needed for an explanatory application of the laws of nature—there is bound to be yet another "initial" one (and so on). In addition to the dilemma between *infinite regress* and *unfounded beginning* (the dilemma just pointed out), there is the problem that the validity of the laws of nature (as *laws*, that is, in the function in which they are needed for explanation) is itself quite unexplainable in a theoretical setting which limits itself to the physical.

Thus—*et ceterum censeo*—it is better to be rational than to be a materialist.

Notes

1 This view is developed and defended in Meixner (1997). Meixner (2001) and Meixner (2004b) explore the question of what event-causation could, at best, be if one is not ready to give it up.

2 Russell says in "On the Notion of Cause": "[T]he reason why physics has ceased to look for causes is that, in fact, there are no such things." (Russell 1912/1913: 1)

3 Wittgenstein says in the *Tractatus* (proposition 5.136 and 5.1361): "A causal nexus [. . .] does not exist. [. . .] The belief in the causal nexus is the *superstition*." (Translation by the present author; the emphasis is Wittgenstein's.) (See Wittgenstein 1984)

4 No universal has causal power; for example, the property of having a mass of 1,000 kilograms has no causal power. With somewhat more plausibility, *the fact* that this particular object has (the property of having) a mass of 1,000 kilograms might be thought to have causal power. But there is no such thing as the causal power of facts, either. *Facts* and *events* are ontologically distinct; in their alleged service for causation, however, they are very close to each other: see note 6 below. Regarding causation, events and facts have a common fate: no causal power can be found in them—which strongly suggests that there *is* no causal power in them. (If there were causal power in them, wouldn't Hume have found it?)

5 If there is no causal power *in* X, X has no causal power (and vice versa). In other words: causal power is *intrinsic* to X, or X has none.

6 If they were considered to be facts, then they would still be *event-like* facts (concerning the logico-ontological theory of event-like facts, see Meixner 2004b).

7 Thus, actual event-*possibilia* are *events*, non-actual event-*possibilia*, in contrast, are mere event-*possibilia*, not events. In a different terminology than the one

chosen here, in which also mere *possibilia* are called "events", one would call non-actual event-possibilia "merely possible events".

8 The unimportance of causation (which must be sharply distinguished from *functional connection*) for advanced science—in particular, modern physics—was boldly asserted, early in the twentieth century, by Russell in "On the Notion of Cause". In Quine (1973: 6–7), the unimportance of causation for modern physics (and thus—by Quine's lights—for all of science) is once more asserted unscrupulously. Russell and Quine are right—which, however, is no wonder, in view of the fact that causation is, rightly regarded, a concept of *metaphysics*, and not of physics or science. Thus, from the point of view of *science*, Russell is, again, right when he writes: "The law of causality [that is, the Principle of Sufficient Cause] [. . .] is a relic of a bygone age" ("On the Notion of Cause", 1); from the point of *metaphysics*, however, he is quite wrong.

9 According to Dennett, agent-causation is "a rather mysterious doctrine", and he applies Peter Strawson's deprecatory remark of "obscure and panicky metaphysics"—with which Strawson dismissed libertarianism—explicitly also to agent causation; see Dennett (2015: 83, fn. 3).

10 The objection was put to me, on one occasion, by Jonathan Lowe, and, on quite another occasion, by the German philosopher Geert Keil.

11 The capacity to F *or* to G is really two capacities: the capacity to F, and the capacity to G; for X has the capacity to F *or* to G if, and only if, X has the capacity to F *and* the capacity to G, where F is normally understood to be incompatible with G. It is important to keep in mind that even if X has both capacities at a certain time-point t, it does not follow that X has *any* causal power at t.

12 The picture, to repeat (see note 7), is this: events are the actual event-*possibilia*, non-actual event-*possibilia* are *not* events, they are just—event-*possibilia*.

13 According to (II), condition (b) in (4) can be left out, since condition (c) in (4) can be understood in such a way as to logically include (b). Moreover, "X bestows actuality on Y" means, of course, nothing else than "X actualizes Y".

14 In a series of publications, I have presented, developed and defended the view that consciousness and monads—*qua* subjects of consciousness *and* (free) action (traditionally, they were called "souls")—have an evolutionarily favoured, biologically advantageous function for their organisms: Meixner (2004a), Meixner (2006), Meixner (2008), Meixner (2010b), Meixner (2014a). The first one to have envisaged similar ideas seems to have been William James; see his *Principles of Psychology*, vol. I (James 1950:140–144). James, however, does not have a substantive view of subjects of consciousness (see *ibid.*, 338–440); thus he speaks as if consciousness itself (indeed, *momentary* consciousness) were a subject of consciousness and action: "Every actually existing consciousness seems to itself at any rate to be a *fighter for ends*, of which many, but for its presence, would not be ends at all." (*Ibid.*, 141; the emphasis is James's.)

15 The gravitation between two particular material objects arises (emerges) from them, but neither they nor the fact that they each have such and such a mass *causes* this gravitation.

16 This is *roughly* true. The locus of *visual* perspective of an embodied monad, for example, is much smaller than the monad's body. On the basis of this fact an argument for the non-physicalness of embodied monads can be constructed: see Meixner (2010a).

17 There is a tendency to understand "embodied" not in the sense of "having a body", but in the sense of "being a body". I do not follow this tendency.

18 Note that we are talking about *massively* macroscopic events.

19 On a closer look, nomological determination, too, turns out to be a problematic idea—already in itself, even without connecting it to causation. How can the

laws of nature, given a certain event, *determine* another event? Nobody doubts that certain events can be very precisely predicted or retrodicted on the basis of the laws of nature and certain other events (appropriate for the purpose); but it does not follow from this that the laws of nature do any work of determination. How could they, given that they seem to be mere pervasive regularities in the course of the events of the world? They seem to be abstracted from that course and, therefore, *determined by it* (and not determining it to any extent or degree). Of course, things would be otherwise if laws of nature were something *over and above* the course of the events of the world: if they were the world-transcendent rules of the game, unshakeable, unbreakable, inexorable. But just how plausible is that? Nomological determination and laws of nature are under critical scrutiny in Meixner (1997) and Meixner (2005).

20 From the *epistemological* point of view, however, it is not to be doubted that an outward agent (say, a team of neurosurgeons) in causing E* (in particular, in choosing E* for actualization) will be guided by a certain representation of C(E*)—a drawing, say—which representation implicitly displays a range of certain spatial partitionings of C(E*) (all of them still macro-partitionings) and entirely screens off a range of certain other spatial partitionings of C(E*) (namely, micro-partitionings on the level of molecules, or atoms, or elementary particles).

21 If E were nomologically determined by an event E′ prior to E, E would still not be *event-caused* (for E′ has no causal power), though it would, indeed, be *caused*: namely, by any agent that causes E′.

22 The selection for actualization *cum* bestowal of actuality which agent-causation consists in can be done directly (without interpolation of nomological determination) or indirectly (with interpolation of nomological determination). It is also conceivable, but pointless and contrary to causal economy, that agent-causation is done *directly and indirectly at once by the same agent* (though along different causal pathways)—in which case, of course, the agent-causation would neither be purely direct nor purely indirect.

23 The brain-events which the monad causes, or in causing which it participates, are, of course, other brain-events than those which nomologically determine its very existence.

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