Super-Humeanism and mental causation

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Abstract

The stance that has become known as Super-Humeanism is a minimal ontology of the natural world in the spirit of scientific realism. The paper enquires to what extent this ontology, due to its parsimony, can be employed to remove commitments from the scientific image that are the source of the clash with the view of ourselves as persons (the manifest image). The paper argues that Super-Humeanism provides the conceptual space to accommodate persons as irreducible to matter in motion, attribute to them free will (even in the libertarian sense) and recognize their volitions as causing some of their behaviour without coming into conflict with science.

Keywords: free will, Humeanism, libertarianism, manifest image, mental causation, persons, scientific image, Super-Humeanism

1. (Super-)Humeanism, laws and free will

At the core of how we conceive of ourselves as persons, there is free will and mental causation in the sense that a good deal of our behaviour is caused by free decisions. We could have done otherwise and are therefore responsible for what we actually do. This conception of ourselves is part and parcel of what is called – following Sellars (1962) – the *manifest* image.

This paper seeks to make a new contribution to bring this conception of ourselves together with the scientific image. The idea is that an ontology that is minimally sufficient to accommodate what natural science (notably physics) tells us about the world leaves enough conceptual space open to include the central features of the view of ourselves as persons. What is known as Super-Humeanism is a minimal ontology in this sense. On the basis of what Super-Humeanism says about physical magnitudes, laws and causation, this paper points out the conceptual space left open for free will (this section) and then explores the account of persons and mental causation that can be built on this basis.

Humeanism about laws of nature and causation in the natural world is, roughly speaking, the view that first comes the configuration of matter of the universe and its evolution, then come the laws and with them causal relationships between events as supervening on the evolution of the configuration of matter. Hence, it is not the laws or causation that fix, determine or produce that evolution. Quite the contrary, the evolution that actually happens fixes or determines the laws and with them causal relationships. Causal relationships between earlier and later stages of that evolution obtain, but they depend on the evolution that actually occurs instead of predetermining it. There are laws because this evolution exhibits some stable, but contingent regularities. Given such regularities, what is known as the best system

is the system that achieves the optimal combination of simplicity and informational content in representing the evolution of the configuration of matter of the universe. Laws are theorems of the best system. The laws then specify which causal relationships obtain.

The best system – and thus the laws – can be deterministic in the sense that given the propositions stating the laws and the specification of initial conditions about the configuration of matter at any given time, the propositions about the entire past and future evolution of the configuration of matter are entailed by these propositions. But there is no predetermination of anything. The supervenience basis for the laws is, strictly speaking, the entire evolution of the configuration of matter of the universe. Hence, if one formulates laws on the basis of the configuration of matter and its evolution that is accessible to us at the present day, one may be justified in taking these laws to be the laws of the universe (or approximations of them). But even if this is so, there is nothing in the present configuration of matter and the laws, thus conceived, that governs, predetermines or even produces the future evolution of the configuration of matter. That notwithstanding, the laws still are explanatory, namely in the sense of unification: they bring out the salient patterns in the evolution of the configuration of matter. Explanations in science end once such patterns are identified. For instance, suppose that a law of gravitation is part of the best system. Science cannot explain why there is gravitation, that is, why bodies attract each other. Science can only trace the particular phenomena of attractive motion back to the general pattern of gravitation.

The same holds in case the best system contains no deterministic, but only probabilistic laws. Again, the laws and with them the objective probabilities for certain events to occur supervene, strictly speaking, on the entire evolution of the universe. This comes out in a clear manner in what is known as the Mentaculus account presented in Loewer (2012). Our assumptions about the objective probabilities for future events formulated on the basis of the configuration of matter and the evolution that is accessible to us at the present day can be correct. Yet, there is nothing in the present configuration of matter and the laws, thus conceived, that instantiates a tendency in nature for a particular future evolution to occur. In other words, there are no fundamental propensities, dispositions or power in nature that ground the objective probabilities.

Against this background, it has been established in the literature that Humeanism offers a distinct stance to make laws of nature – be they deterministic or probabilistic – compatible with human free will. Jenann Ismael, in her recent book *How physics makes us free*, writes:

> When we adopt a globalist perspective, our activities become part of the pattern of events that make up history. Since our activities partly determine the pattern, and the pattern determines the laws, our activities partly determine the laws.[1]

Hence, free will is compatible with the laws of nature because the physical events that are expressions of the free will of humans are part and parcel of the supervenience basis of the laws. By way of consequence, if persons had chosen to do otherwise, the laws of nature would have been slightly different.

However, one can object that this stance gives us too much: our bodily movements are not that important in the universe that they have an influence on what the laws of nature are.[2]

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1 Ismael (2016, p. 111; see also pp. 225-226). See also Beebee and Mele (2002), Swartz (2003, ch. 11, in particular p. 127) and Perry (2004, pp. 237-239).

2 See the objection of Hüttemann and Loew (2019) and Hüttemann (this volume, ch. 1).

Whatever humans choose to do, the laws will be the same. Quite the contrary, laws of nature are useful for our actions, because they set the frame for what we can do and what we cannot do. In other words, we need laws of nature and must keep them fixed to delimit the range within which we can freely choose our actions. For instance, a person can choose to walk slowly or quickly, but she cannot jump up to the roof of her house – gravitation prevents her from doing so. How fast and in which direction her body moves is an issue of the initial conditions and not of the laws.

It is here that the position that has become known as Super-Humeanism in recent years makes a contribution to the free will debate.[3] It thereby joins several proposals that have been set out recently and that all seek to vindicate free will not by taking human decisions to contribute to determining what the laws are, but to contribute to determining what exactly the initial or boundary conditions of the universe are.[4]

Super-Humeanism is in the first place a proposal for an even more parsimonious ontology of the natural world than standard Humean metaphysics as exemplified by David Lewis's thesis of Humean supervenience, formulated in Lewis (1986, introduction). It deletes the commitment to natural intrinsic properties instantiated at space-time points and keeps only the commitment to one type of natural relation, namely distance relations individuating point particles. The ontology of the physical world is given by these two axioms conceived in Esfeld and Deckert (2017, p. 21):

(1) There are distance relations that individuate simple objects – namely, matter points.

(2) The matter points are permanent, with the distances between them changing.

Everything else supervenes on the Humean mosaic thus defined. Consequently, not only the laws, but also all the physical magnitudes apart from position supervene on the relative positions of the point particles and their evolution throughout the history of the universe. The reason is that in physical theories, only position has to be admitted as primitive and all the other magnitudes can be introduced in terms of their functional role for the evolution of the particle positions and thus be located in that evolution.[5] That is to say: the values of such diverse magnitudes as mass, charge, constants of nature, the wave function of the universe, etc. are not instantiated in the initial configuration of matter of the universe, but are fixed only in the course of the evolution of that configuration.

Super-Humeanism hence is a parsimonious ontology – arguably the most parsimonious one – that endorses scientific realism: it frees us not only from the heavy metaphysical baggage that comes with countenancing primitive modality (fundamental dispositions, powers, laws as primtives, etc.), but also from the problems that arise from subscribing to natural intrinsic properties: if they are not dispositions or powers, implementing a primitive modality, they are categorical properties with the ensuing commitments to quidditism and humility, as acknowledged by Lewis (2009). Furthermore, it solves the problem that the wave function in quantum mechanics poses for Humeanism: the wave function of the universe supervenes on the evolution of the configuration of matter of the universe that consists only in the positions

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3 Super-Humeanism is set out in Esfeld and Deckert (2017, ch. 2.3) and in Esfeld (2020a, ch. 2). For critical discussions, see Wilson (2018), Marmodoro (2018), Darby (2018), Lazarovici (2018), Simpson (2019) and Matarese (2019, 2020). The step from Humeanism to Super-Humeanism is inspired by the work of Hall (2009, § 5.2) and Loewer (2007); see also Loewer (2020b).

4 See Hoefer (2002), Loewer (2020a) and Thyssen and Wenmackers (2020).

5 See Esfeld and Deckert (2017, chs. 3-5) and Esfeld (2020a, chs. 1 and 2).

of point objects (point particles in Bohmian quantum mechanics, flash-events in the GRW quantum theory).[6] That notwithstanding, the propositions that ascribe masses, charges, a wave-function, etc. to physical systems as well as the propositions about laws and causation are true; but their truth-maker is only the mosaic of point particles that is constituted exclusively by the distance relations that individuate them and the change in these relations.

The transition to Super-Humeanism has the following implication for the account of free will: not only the laws, as on standard Humeanism, but also the values of the magnitudes that enter as initial conditions into the laws are determined by the change that actually occurs in the relative particle positions throughout the history of the universe. This opens up the conceptual space for the following position: there is no need to maintain that human bodily motions contribute to determining what the laws are. But they contribute to determining what the precise values of some magnitudes that are part of the initial conditions – such as constants of nature, or the initial wave function – will turn out to be. As mentioned above, the laws set the frame within which we can act freely such that how precisely a person moves her body is an issue of the initial conditions, but not the laws. Assuming that a fundamental physical theory that is deterministic is part of the best system of the universe and that persons can freely choose, for instance, what drink to have at breakfast, something in the best system has to be different in the event a person chooses tea on a given occasion instead of choosing coffee. That difference does not affect the laws. It is a very tiny difference in initial values of some magnitudes, such as constants, or the wave function.[7]

However, there is no backward causation involved here: what humans choose to do – in general, what happens in the universe at a time t or after t – does not alter past observations or touch upon the validity of records of the past, since these are all position observations and are recorded as spatial configurations. The Super-Humean account of free will accommodates the common sense truism that the past is fixed and the future open: our free choices at t influence only particle positions that obtain later than t. For this to be possible under the assumption that the fundamental physical theory of the universe is deterministic, our free choices at t also have to contribute to determining what the exact *initial* values of some magnitudes are that figure in the initial conditions that enter into the laws. In order to establish this, Super-Humeanism plays out the distinction between position as primitive variable on the one hand and the additional magnitudes that enter into the initial conditions for a law of motion on the other hand. These latter are functionally defined in terms of the role that they play for the motion that actually occurs. Their *initial* values can therefore be dependent on *future* motions, including motions that are the result of free will, without any paradox arising. They are placed or located in the particle motion as a whole.

This stance hence implies that such tiny differences in initial values of some magnitudes as are required, for instance, to accommodate the situation in which a person has tea at a certain time t instead of coffee do not show up in differences in particle motion before t, but only after t. Determinism does not rule this out; only what is known as super-determinism in the discussion about the free choice of measured variables in quantum mechanics would do so, as pointed out, for instance, in Esfeld (2015).

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6 See Miller (2014), Esfeld (2014), Callender (2015) and Bhogal and Perry (2017).

7 See Esfeld (2020a, ch. 2.4, and 2020b).

Indeed, Bohmian quantum mechanics can serve as illustration of a deterministic physical theory that allows such a scenario, because the universal wave function can be considered as supervening on and thus being located in the particle motion as a whole – that this, the whole evolution of the particle positions of the universe serves as the supervenience basis that fixes the wave function of the universe modulo further constraints such as simplicity. Furthermore, what is arguably the fundamental version of Bohmian quantum mechanics, namely the theory known as identity-based Bohmian mechanics, allows for particles even to move in such a way that the values of mass change during their evolution, while the theory still is deterministic.[8] Apart from Bohmian mechanics, Dowker and Herbauts (2005) have set out a concrete model of how the wave function supervenes on primitive positions and their evolution in the framework of the GRW flash ontology (which includes a probabilistic law, but this is irrelevant to the point at issue of the *initial* wave function supervening on the *subsequent* evolution of primitive positions that actually occurs in the universe).

In general, an analogy with Kripke's (1982) considerations about Wittgenstein (1953, §§ 138-242) on rule following may help to illustrate the point at issue here: any given sequence of items (here: particle positions up to a time *t*) instantiates many rules (here: wave functions) such that the difference between these rules shows up only in the further evolution of the sequence (here: the evolution of the particle positions after *t*).

In sum, Super-Humeanism gives rise to a distinct proposal of how there can be free will in a universe with natural laws. More precisely, this proposal satisfies what is known as the principle of alternative possibilities: the agent could have done otherwise at *t* given exactly the same physical conditions, namely exactly the same evolution of particle positions up to *t*. It thereby accommodates also a libertarian conception of free will. However, this account of free will is only a half-built house: we also need an account of mental causation in this framework. This is what I seek to sketch out in the following. Section 2 recalls the problem of mental causation. Section 3 goes into how mental events can make a difference in the physical domain in the framework of (Super-)Humeanism. Section 4 enquires whether the Humean view of causation can be the appropriate one for mental causation as well.

2. *The problem of mental causation*

The problem of mental causation is usually formulated as consisting in four principles each of which is plausible considered in isolation, but the conjunction of all four of them is inconsistent. Following Kim (1998 ch. 1), the principles can be summed up in this way:

(1) *Distinction*: Mental events are not identical with physical events.
(2) *Mental causation*: Some mental events cause physical events.
(3) *Completeness*: For any physical event *p*, there is a complete physical cause insofar as *p* has a cause at all.
(4) *No systematic overdetermination*: Physical events are not systematically overdetermined by physical causes and additional mental causes that are distinct from the physical ones.

Rejecting mental causation (2) would not be a solution to the problem, but denying that there is a problem, since mental causation would then not exist. Overdetermination (rejecting (4)) arguably does not yield a satisfactory solution either: it is central to the view of ourselves as persons that our volitions make a difference to our behaviour. But they do not make a

8 See Goldstein et al. (2005a, b) for the physical theory and Esfeld et al. (2017) for a philosophical assessment.

difference if for every physical movement that they cause there also is a complete physical cause that is distinct from the mental one.

We thus get to the traditional opposition between physicalism on the one hand and dualism on the other that dominates the debate from the exchange of letters between Hobbes and Descartes to this day. On physicalism, mental events – at least those ones that are causally efficacious – are identical with physical events so that the causal completeness of the physical domain is respected and no systematic overdetermination through distinct causes arises. However, this solution to the problem of mental causation is not as such an argument for physicalism. To establish physicalism, one has to show how the features that characterize the mind can be part and parcel of the physical domain as described by natural science. Doubts in that respect remain notably as regards the qualitative features of conscious experience and normativity as being central to the deliberations about what one *should* think and do. However, dualism faces the objection of being outdated by modern science: the principle of completeness (3) is a philosophical principle. But it is not clear how one can reject this principle while endorsing realism with respect to what science tells us about the natural world.

Most Humeans about laws of nature and causation are physicalists. The above mentioned recent book by Ismael (2016) makes an excellent case as to how a physicalist stance about the mind, including free will, can be combined with Humeanism. However, Humeanism does not do any specific service to physicalism: if one endorses physicalism, the problem of how the mind is related to the physical world in general – and the problem of mental causation in particular – are solved in terms of some form or other of the identity theory, independently of which stance on laws of nature and causation one adopts.

By contrast, most dualists subscribe to an anti-Humean view of laws and causation that admits some sort of primitive modality, for instance, by endorsing fundamental dispositions or powers. However, this heavy metaphysical baggage makes it the more difficult (if not impossible) to solve the problem of mental causation while respecting scientific realism, because it is not clear how the mental powers could cause behaviour without clashing with the physical powers as they are conceptualized by the laws of physics.[9] The rather unusual combination of dualism and Humeanism is therefore worth exploring, and be it only for the sake of the argument, to get clarity about the logical space of available positions: if the ontologically light view of laws and causation in Humeanism and, in particular, Super-Humeanism is to make a specific contribution to solving the problem of mental causation, this will be a contribution in the dualist framework and, as mentioned above, a contribution that accommodates also libertarianism about free will.

3. Difference making

Given the assessment in the previous section, the psycho-physical dualism worth exploring here is one that takes mental events to make a difference in the physical realm without, however, coming into conflict with scientific realism.[10] Abandoning scientific realism would be too cheap a solution to the problem of mental causation: at the heart of the problem is the apparent conflict between what science tells us about the physical realm and the common

9 For a proposal in that respect that takes the laws of physics not to be strict laws see von Wachter (2015). See also Steward (this volume, ch. 3) and De Haan (this volume, ch. 4).

10 See also Kroedel (2020, chs. 2 and 4).

sense view of persons whose volitions make a difference in the physical realm while being distinct from physical events and being such that a person is free to choose what to do within the frame set by the physical laws. If (Super-)Humeanism is to contribute to solving this problem, its contribution stems from its parsimonious ontology. The idea is this one: by proposing an ontology that is minimally sufficient to accommodate scientific realism, it avoids a commitment to entities that entail a conflict with the view of ourselves as persons conceptualized in what Sellars (1962) calls the manifest image.

The position we're after hence is this one: mental events such as volitions, being distinct from physical events, make a difference in the course of physical events and thus in the particle motion. However, there is no need to amend (if not distort) physical theories in such a way that they include mental variables in their dynamical laws in order to cover the dynamics of physical events. These physical theories as they stand tell the truth about the physical realm (or theories in the same vein as our current ones do so). The expectation is that (Super-)Humeanism makes this position available.

If (Super-)Humeanism can do this trick, then it does so based on the idea that the laws are fixed only by the entire evolution of the physical events. Suppose that this evolution includes changes that are caused by mental events such as volitions. Then, the laws are fixed by physical events some of which have irreducibly mental causes. But these causes do not figure in the supervenience basis for the laws. The laws include only physical magnitudes: the best system is the system that achieves the best balance between simplicity and strength with respect to the entire evolution of the physical events, whatever their causes may otherwise be.

Science considers only physical events. It discovers general patterns or regularities in the evolution of these events and on this basis formulates general laws that apply to all physical systems. Even if there is mental causation and dualism is true, there is no reason for science to consider mental causes and include mental variables in its theories: doing so would compromise gravely the simplicity of the dynamical laws without leading to a gain in information. Only if the general patterns of interactions between physical events were altered in certain complex physical systems – such as, for instance, human brains – would it be necessary to amend the laws when it comes to these systems. However, *pace* the recent argument in Gillet (2016), there is no evidence for that: the neuroscientific research that we know is applied physics, namely applied classical mechanics and electrodynamics and in the last resort applied quantum mechanics.[11] In any case, the whole point of (Super-)Humeanism in this context is that we can countenance mental causation even in a dualist framework without having to search for a breakdown of the physical laws somewhere in the brain.

If, nevertheless, mental events make a difference in the physical realm, the following has to be true: the course of physical events in a purely physical world is different from the course of physical events in a world with mental causes intervening in the physical world, although in both cases the dynamical laws contain only physical variables. Again, the difference between Humeanism and Super-Humeanism is relevant here: on Humeanism, in the dualist framework under consideration here, there has to be a difference on the level of the laws of physics between a world with only physical events and a world with mental causation. As explained in section 1, on Humeanism, free will (free choice and thus the ability that the person could

11 But see also the considerations about physics accommodating higher-level causation by Simpson and Horsley (this volume, ch. 2).

have acted otherwise) is possible on the condition that the laws of physics depend also on what humans actually do. On Super-Humeanism, by contrast, there only has to be a difference on the level of the initial values of some physical magnitudes that enter into physical theories through the functional role that they play for the evolution of the configuration of matter (such as slight differences in the precise values of some constants, or in the initial wave function of the universe). Again, the idea that the existence of mental causation makes a difference to the latter is much more palatable than having to attribute to mental causation such an importance that its existence makes a difference to the physical laws. Whatever we freely choose to do cannot affect the laws of physics; but it can contribute to determining the precise initial values of some magnitudes. In sum, the laws of physics and / or the initial values of some physical magnitudes have to be different in a world with mental causation from a world without mental causation.

In a sense, the principle of completeness (3) as well as the principle of no systematic overdetermination (4) are both respected and violated by this stance. The principle of completeness is respected, since what enters into the best system in order to fix the dynamical laws and the causal relations derived from them are the physical events and their evolution only. Hence, insofar as a physical event has a cause given by a law of nature, it has a complete physical cause. However, the spirit or the idea that drives this principle is violated: some of the physical events upon which the laws of nature and the causal relations derived from them supervene have mental causes; what the natural laws and / or the initial values of some physical magnitudes are depends on the mental causes. In other words, the claim is that the physical causes do not exclude the mental ones, because the fact of some physical events having mental causes is already included in the basis of physical events on which the relations of physical causation supervene.

Consequently, there is systematic overdetermination of some physical events by both mental and physical causes. More precisely, whenever a physical event has a mental cause, it also has a physical cause, and mental events are not identical with physical events. Admitting mental causation requires psycho-physical laws in the framework of Humeanism. These are not strict or exceptionless laws as in fundamental physics. Nevertheless, there is a salient pattern or regularity in the sense that whenever a person has the volition to do x with x being some form of behaviour that she is capable to do, x occurs, *ceteris paribus*. Hence, whenever there is mental causation, there are both psychophysical and physical laws and, based on them, both mental and physical causes. Nonetheless, these are not independent of one another: the supervenience basis for the physical laws and causes – the evolution of the physical events – includes already the fact that there is mental causation. Consequently, fixing the physical causes includes the mental ones. Although the letter of the principle of no systematic overdetermination is violated, its spirit is respected: mental causes make a difference. The course of physical events in a purely physical world is different from the course of physical events in a world in which some physical events have mental causes.

However, assuming dualism, it seems that there can be an exact physical duplicate of the actual world, but in this duplicate, there are no mental events that cause some of the physical events. This would be a zombie world so to speak. Hence, the envisaged service that (Super-)Humeanism can do to dualism in making mental causation intelligible without coming into conflict with science seems to end up in a dilemma: if there is the metaphysical possibility of an exact physical duplicate of the actual world in which there are no mental causes of some of

the physical events, then mental causation is abandoned also in the actual world and the position runs into epiphenomenalism with respect to mental events; these then do not make a difference. To exclude this metaphysical possibility, however, it seems that one has to drop dualism.

Indeed, this dilemma makes evident that there is only a tiny conceptual space for dualism open if one seeks to employ (Super-)Humeanism about laws and causation in order to make mental causation intelligible while respecting scientific realism. If the metaphysical possibility of a physical duplicate of the actual world without mental events causing some physical events is to be excluded, this implies that the fact that there are mental events – more precisely, the fact that there are persons or minds that act –, is fixed by and thus supervenes on the configuration of the physical events and its evolution. In all metaphysically possible worlds, whenever there is a physical course of events like in the actual world, there are minds that think and act coming into existence in any such world. In other words, minds come into being during the evolution of the configuration of matter of the universe. There are purely physical sufficient conditions (that is, *metaphysically* sufficient conditions) for physical systems to be organisms including human beings with minds and free will. This is the limitation that we have to impose on the dualism that is admissible in this context.

Nonetheless, once persons have come into being during the evolution of the configuration of matter of the universe, persons are such that they are free what to think and what to do such that, given exactly the same physical conditions, they could have thought and done otherwise. Consider what Kant says in the *Prolegomena* about the transition from sensory impressions caused by stimulations of the sense organs to thought:

> If an appearance is given to us, we are still completely free as to how we want to judge things from it.[12]

For present purposes, we can assume that there are sufficient physical conditions for persons to come into being and to receive certain sensory impressions through their sense organs. The point that Kant makes then is that sensory impressions cannot impose on us what to believe, that is, what beliefs or thoughts to form that have a conceptual content. Given sensory impressions, a person has to make up her mind how to judge things as well as what to do. Hence, freedom is not only free will, but concerns thought in the same way as action. Accordingly, Kant (1996, p. 139) regards the concept of freedom "as the *keystone* of the whole structure of a system of pure reason" in the preface to the *Critique of practical reason*.

Why is this so? Consider what Sellars (1956) denounces as the "myth of the given": the myth is the idea that something that is simply given to the mind – such as sensory impressions – has as such an epistemic status in being in the position to justify beliefs and actions. However, sense impressions, construed as the effects of interactions of a person with her environment, cannot, qua being the result of physical *causal* processes, *justify* anything. The transition from sensory impressions and biological needs to beliefs and actions is such that the latter ones, in contrast to the former, are subject to a justification: it makes no sense to ask a person to justify the sensory impressions and biological needs that she has; but it does make sense to ask for a justification of the beliefs and actions that she forms on the basis of her sensory impressions and biological needs. This implies that the sensory impressions and biological needs cannot as such *be* the justification of her beliefs and actions.

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12 *Prolegomena* § 13, note III; quoted from Kant (2002, p. 85).

To put it differently, freedom consists in that as regards whatever is given to her mind, the person has to and is free how to position herself with respect to that input. The input cannot impose a certain positioning upon her: in being subject to a justification, the person is free how to form her beliefs and actions based on what is given to her mind. That is why she could have thought and done otherwise. In forming beliefs and actions, a person has to make up her mind as to what to endorse as a reliable source of knowledge and guide for actions, thereby seeking for and hence being responsive to reasons. In other words, the person has to decide herself in deliberating about what is given to her which beliefs she *should* adopt and which actions she *should* do. In this way, free will is tied to reason, normativity and justification and thereby distinct from arbitrariness or chance events.

According to Sellars (1956, § 5), the myth of the given is on a par with the naturalistic fallacy in ethics, that is, to derive propositions about what should be the case from propositions about what is the case. For instance, smoking being unhealthy does not imply that one should not smoke without adding the normative premise that one should not do what is unhealthy; that normative premise cannot be justified solely by invoking facts about healths or any other biological facts. Hence, although the propositions about the physical events and their evolution entail propositions to the effect that there are persons, they do not entail propositions about what these persons then determine as the content of their intentional states. In other words, the referents of the beliefs and theories that a person adopts cannot impose the acceptance of the beliefs and theories in question on her. Consequently, any claims about the physical facts or events entailing the beliefs and intentions of persons miss the point about persons having in the first place to make up their minds about what they should think and do – otherwise they would not be persons. In a nutshell, thus, there are sufficient physical conditions for persons coming into being, but not for what they then determine as the content of their beliefs and intentions.

Following the linguistic turn in 20th century philosophy and, notably, the argument of Wittgenstein against private language in the *Philosophical Investigations* (1953, §§ 138-242) and the presentation of this argument by Kripke (1982), it is generally admitted that concept formation requires social interactions. Something can be a person only in a community of persons in which normative attitudes are developed into an exchange of giving and asking for reasons through which conceptual content is determined that then enables each person to freely form her beliefs and intentions to act. As notably Davidson (1984, essays 9-12) works out, what the conceptual content is that thus is determined is accessible only from within participating in the social interactions that determine it and thereby contributing to further shape it out. In contrast to the physical facts, it is not accessible from a third person perspective. Hence, again, the conclusion is that there are sufficient physical conditions for beings to have the capacity to participate in social practices of mutual interpretation, giving and asking for reasons; Tomasello (2014), for instance, formulates a biological explanation of this capacity in terms of the enhancement of fitness that cooperation between humans provides. Nonetheless, the content that is determined in these practices is not accessible from the physical facts. Complete knowledge of the physical facts would not entail the propositions about what the content is that is determined in these social practices. In this way, then, persons can come into being within the evolution of the configuration of matter of the universe such that there are sufficient physical conditions for their existence, while they are

still free. Their free thoughts and actions are distinct from any arbitrariness or chance events and yet cause a good deal of their behaviour.

4. Mental causation and the Humean view of causation

If one accepts something like the sketch in the preceding section as spelling out what is distinctive of persons as conceived in the manifest image, then the Super-Humean ontology of the physical realm shows how thoughts and volitions, thus conceived, can make a difference to our bodily motions without coming into conflict with scientific realism. The only restriction to enable this view is the commitment to persons coming into being during the evolution of the configuration of matter in the universe in the sense that there are sufficient physical conditions for the existence of persons. But there are no sufficient physical conditions that determine the content of the intentional states of persons. Their freedom consists in them determining themselves what to think and what to do through their weighing of reasons. Consequently, admitting persons in that sense requires an ontological commitment to persons as a further primitive over and above the physical primitives, although persons depend on there being certain sufficient physical conditions for them to come into existence.

However, one may object that this attempt to bring the view of ourselves as persons as conceived in the manifest image together with the scientific worldview through a minimalist ontology of science in the vein of (Super-)Humeanism is misguided from the outset, since the Humean conception of causation is counterintuitive and opposed to what is assumed about causation in the manifest image. On Humeanism, causation comes together with laws as supervening on the mosaic of particular events. Even if the dualist view sketched out here is accepted with the commitment to persons entering into the ontology as a further primitive over and above the physical primitives, the Humean view of causation still is endorsed according to which the issue of whether two events are related as cause and effect is not a local affair; it does not depend only on the two events in question. But this is not as counterintuitive as it may seem at first glance: whether or not physical conditions obtain that are sufficient for persons to come into being is a global and not a local affair. The existence of persons depends on certain conditions being fulfilled in the overall evolution of the configuration of matter of the universe. When these conditions obtain, also conditions obtain that are such that there are psychophysical laws like the ones mentioned in the preceding section and with them causal relations between mental and physical events.[13]

The crucial point to bear in mind in this context is that being a global affair by contrast to a local one does not mean that it depends on the *entire* Humean mosaic: in particular, whether or not such conditions obtain in the universe at a time t does not depend on what happens after t. Such conditions can obtain at a time t given the universal configuration of matter at t and its evolution up to t. Something that happens after t may annihilate persons, but nothing that happens after t can remove the fact that there were persons and mental causation in the universe at t. By the same token, nothing that happens after t can alter the fact that attractive

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13 I thus change the view argued for in Esfeld (2007, section 2), but still think that the following conditional is correct: if one endorses a metaphysics of causation in terms of powers, then the theory of the identity of mental with physical causes is the only plausible option to vindicate mental causation under scientific realism. By way of consequence, if one abandons the identity theory, one has to go for a metaphysics of causation that is not committed to causes being powers that produce their effects. So I switch from the *modus ponens* argued for in my (2007) to the respective *modus tollens*.

motion was a stable pattern or regularity in the universe up to *t*. The point at issue thus is that on Humeanism, as pointed out by Weatherson (2007, pp. 531-532), salient regularities that obtain in particular space-time regions are sufficient to entail propositions about what causes what in these regions, and nothing that happens outside these regions can invalidate these causal relationships.

One may object that we experience the feeling of the power of our mind making our limbs move in certain ways. However, also such a feeling can be there only against the background of stable physical regularities such as gravitation. Against this background, the Humean can account for such a feeling in terms of stable regularities that link conscious mental events with bodily movements. There is no valid argument from experiences to the commitment to primitive modality without adding premises about general metaphysical considerations that are a subject of dispute.

In any case, the argument for endorsing the view of ourselves as persons as conceived in the manifest image has nothing to do with claims about feelings or direct experiences. It is entirely based on thoughts and actions admitting of a justification and the fact that nothing that is given to the mind – no sensory impressions, no biological needs, etc. – is as such in the position to justify anything. The project of bringing the manifest and the scientific image together is doomed from the start if on the one hand claims about feelings, direct experiences, etc. are taken at face value as the basis for ontological commitments and on the other hand all the magnitudes that figure in scientific theories are taken at face value in the sense that they are received as corresponding directly to something in the physical world. The issue is to achieve an overall reflective equilibrium that brings the core claims about persons in the manifest image together with an ontology that is minimally sufficient to accommodate what science tells us about the world in a scientific realist spirit. The argument of this paper is that Super-Humeanism can make a significant contribution to achieving that goal.

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