THE RE-EMERGENCE OF THE EMERGENCE DEBATE

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Abstract

This essay provides a critical review of contemporary controversies related to the notion of emergence by discussing, among other recent views, Achim Stephan's defense of the ontological tradition of emergentist thought along the lines of C D Broad Stephan's distinctions between various notions of emergence, different in strength, are useful as they clarify the state of discussion There are, however, several unsettled problems concerning emergence Some of these (e g, downward causation) have been dealt with by Stephan, Kim, and others, though not entirely satisfactorily, while others (e g, the nature of properties, the issue of realism) would require further investigation in this context It is argued in particular that downward causation would not trouble emergentists, were they willing to adopt a more Kantian and/or Wittgensteinian approach Some examples of such an option are given Thus, the article sketches a philosophical perspective from which a radical reassessment of the emergence debate could be pursued

1. Introduction

The hierarchical relations between different "levels" of reality have traditionally been debated among metaphysicians and philosophers of science Over the past few decades, the concept of *supervenience* has been a popular means to conceptualize these relations It has almost superseded the notion of *emergence*, which was widely used earlier in the twentieth century, especially as a proposal for a third way between the unappealing extremes of mechanism and vitalism in the philosophy of biology — a controversy which in our days has

merely historical interest While there is no universally accepted def-
inition of supervenience available, let alone a universally accepted
account of how any such definition could be used to "solve", say,
the mind-body problem,[1] it seems that the philosophical mainstream
is still busily seeking new solutions on the basis of the notion of
supervenience[2] Until very recently one may have easily felt that
emergence has been forgotten, to the extent that some people have
considered it as outdated as the controversies it was first meant to
settle

Emergence does have its defenders, however, it may even have
re-emerged as a central position in the philosophy of mind[3] Achim
Stephan's book *Emergenz* (Stephan 1999, hereafter cited as E) is
probably the only major philosophical monograph published on this
notion and its history in an international language,[4] though there
is also a growing number of journal articles available Far from ad-
mitting that emergence belongs merely to the history of philosophy,
Stephan notes that we are witnessing a "renaissance" of emergen-
tism, not only in the philosophy of mind (E, chapter 15) but also in
such fashionable interdisciplinary fields as cognitive science, connec-
tionism, chaos theory, synergetics, and theories of self-organization
(E, chapters 17 and 18) He succeeds in analyzing the notions of
emergence at work in these disciplines, in many cases arguing that
they are not sufficiently strong or theoretically interesting

Most of Stephan's book is devoted to the construction of a rea-
sonable *ontological* concept of emergence, weak enough to be scien-
tifically (naturalistically) acceptable but strong enough to account for
the "novelty" of, say, the human mind in relation to its material or
physical basis[5] Thus, Stephan, as most other contemporary emer-
gentists, wishes to formulate a version of *non-reductive physicalism* In
this essay, I shall focus on some general philosophical issues regarding
emergence and related notions, rather than evaluating Stephan's or
anyone else's technical definitions of the concept in any close detail
I am sympathetic to the attempt to renew philosophers' interest in
the concept of emergence, but I shall also point out some problems
that emergentists should face My investigation will, I hope, pro-
vide some reasons for a thoroughgoing critical re-evaluation of the
recent literature on emergence Among other things, I shall examine

the background assumptions of the problem of downward causation, which many people, including emergentists like Stephan and anti-emergentists like Jaegwon Kim (1999a, 1999b), seem to regard as *the* problem with emergentism [6] Thus, I hope to be able to set the emergence debate in a larger context

It will emerge in the course of my survey that my criticisms of both emergentists and their critics are presented from a philosophical point of view that questions some of the crucial background assumptions that make their debate meaningful I can understand the charge that I am not playing a fair game with them But that's how it usually is with attempts to attack an entire philosophical (or scientific) paradigm I am questioning the physicalistic world-picture that underlies most of the recent discussions of emergence and supervenience (however "non-reductive" they are claimed to be), yet, I do not think I am abandoning naturalism (or emergence) altogether I am concerned with the possible uses the notion of emergence might receive in a quite different form of naturalism than the one we find in the current emergence and supervenience literature Hence, what follows ought to be seen as a preliminary sketch of how we should reconsider what *kind* of naturalism we would like to have in the philosophy of mind and elsewhere In drawing this sketch, I shall appeal to authors as diverse as Kant, Wittgenstein, McDowell, von Wright, and Putnam — without implying that these philosophers should have employed the concept of emergence in their work but suggesting that interesting connections can be found between some of their ideas and the basic anti-reductionism underlying emergentist thought

While my discussion primarily falls within general philosophy of science and philosophy of mind, rather than focusing on any detailed issues related to emergence (or supervenience, or downward causation) that one finds in subfields like the philosophy of biology, the critical remarks I offer on the issue of downward causation, in particular, might turn out to be relevant for the work that is being done in such more specialized fields as well I shall address the question of whether the notion of emergence can have a significant role to play in our conceptualizations of phenomena belonging to *natural human life*, such as conscious thought and action My inquiry could thus be classified as an exercise in "philosophical anthropology" (see

Pihlstrom 1998, 2003), although there is no need to use this problematic expression In any case, such a philosophical study of humanity is closely connected with the areas in which the notion of emergence is taken to be important, especially the philosophy of mind and of biology

2. Emergence — an ontological concept

Stephan's *Emergenz* is an impressive achievement as a historical and systematic presentation of several difficult issues pertaining to the notion of emergence Thus, it serves extremely well as a guide to the questions I wish to take up Both ambitions, historical and systematic, are realized by Stephan in an admirably clear and accessible style, which makes no compromises with the exactness of the explication of philosophical problems [7] The historical part of the work provides the central background for Stephan's own systematic account of various notions of emergence In addition to giving a detailed survey of the prehistory of emergence theories both in British empiricism (Mill) and in Continental thought (Reil, Lotze, Fechner, Wundt) in chapters 5–7, Stephan revives the classical ontological tradition of emergentism developed by such British philosophers as Lloyd Morgan, Alexander, Broad, and others in the 1920s [8] The resulting attempt to define emergence — or, rather, several different concepts of emergence — ontologically is much more sophisticated than, say, Mario Bunge's and Karl Popper's, who have presumably been the most influential among ontological theorists of emergence in recent decades [9]

Even if many problems surrounding emergence ultimately remain unsolved by Stephan, his careful distinctions and definitions may help us in responding to those critics of emergentism who overhastily abandon the notion because of its alleged inherent mysteriousness For instance, when anti-emergentists such as David Ray Griffin (1998, pp 63 ff) ask how it is possible or even conceivable that experience emerges out of non-experiencing entities, or that mind emerges out of matter, the emergentist may reply by laboriously explicating the characteristics of emergentism analyzed by Stephan, with-

out attempting to provide any quick and general answer that would immediately refute the opponent It may be legitimate to claim that in some particular sense of emergence, experience really emerges out of non-experience, and that in some other sense this is not the case

Let us briefly take a look at the central characteristics ("Merkmale") of emergence theories that Stephan, following C D Broad and other British emergentists, distinguishes (E, chapter 3, cf also Stephan 1994, 1998) I shall avoid unnecessary formalizations, more technical formulations can easily be found in Stephan's work [10]

Stephan argues, first, that the emergentist should, in a scientific spirit, be committed to *naturalism*, which says that only natural factors play a causal role in the evolution of the universe supernatural powers or entities should not be postulated, for all entities consist of natural (material) parts (E, p 15) This thesis can be labeled "physical monism" (or, simply, physicalism or materialism) there are only physically constituted entities in the universe, and any emergent property or structure is instantiated by systems that are exclusively physically constituted (Stephan 1998, p 640) [11] Secondly, the notion of *novelty* ("Neuartigkeit") is important for emergentists new constellations, structures, entities, properties and dispositions are formed in the course of the evolution of nature (E, p 20, see Stephan 1998, p 645) These are somehow "new" in relation to the interaction of the parts they consist of Emergence theories require, thirdly, a distinction between *systemic* and *non-systemic* properties No part of a system, but only the system itself, can have a systemic property, only systemic properties can be "novel" (E, p 21, see also Stephan 1998, p 641) Systemic properties can be divided to reducible and irreducible, or to predictable and unpredictable (E, p 22) Not all systemic properties are novel and emergent in any interesting sense

The fourth characteristic Stephan mentions is the *hierarchy of the levels of existence* For instance, the domains of the material world (studied by physics), life (studied by biology), and mind or mentality (studied by psychology) constitute hierarchical levels (E, p 23) It is because of this hierarchical organization of the world and of the corresponding sciences that philosophers have felt the need for a notion of emergence in the first place The "higher" levels of the hierarchy

are ontologically dependent on, but nonetheless something "new" in relation to, the "lower" ones Fifthly, the emergentist assumes *synchronic determination* the properties and behavioral dispositions of a system depend nomologically on the microstructure of the system, i e , on the parts of the system and their composition, and systemic properties supervene on the properties of the parts of the system, there can be no difference in the former without there being some difference in the latter (E, p 26, Stephan 1998, p 641) It is obvious that the concepts of emergence and supervenience, far from being independent of each other, may both be needed in an adequate conception of the level-structure of the world Insofar as the emergentist is committed to the idea of the synchronic determination of higher-level systemic properties, she or he is also committed to the supervenience of the systemic properties on the lower-level (micro-)structure of the system

Sixthly, although some emergentists (e g , Popper) have subscribed to indeterminism, one of the characteristics of emergentism (at least in the classical British tradition) is, Stephan reminds us, *diachronic determination* the coming into existence of new structures is a deterministic process governed by natural laws (E, p 31) Seventhly, however, the emergentist needs the crucial notion of the *irreducibility* of a systemic property [12] A systemic property (which is nomologically dependent on the microstructure of the system) is, on Stephan's definition, irreducible, if the law which says that all systems of the same microstructure and organization have that property cannot be deduced from laws stating the properties and dispositions of the parts of the system in isolation or in simpler systems (E, p 36) Alternatively, irreducibility can be characterized as the combination of *unanalyzability* (those systemic properties which are not "behaviorally analyzable" are irreducible) and the *irreducibility of the components' behavior* (the behavior of the components *qua* components of a system does not follow from their behavior in isolation or in simpler systems) (E, p 43, Stephan 1998, pp 643–4) The notion of reduction employed here is rather strong in emergentism, reducibility primarily means explanatory reducibility, not merely ontological reducibility, which is already assumed in the principle of synchronic determination or supervenience (cf Stephan 1997, p 313) Thus,

the emergentist can admit that higher-level properties are ontologically reducible to their structural properties while being explanatorily irreducible to them [13]

The eighth notion relevant to emergentism is *unpredictability* (in principle), which can be applied either to systemic properties instantiated in some system at some moment of time, if those properties are unanalyzable and/or irreducible or if their instantiation cannot be predicted on the basis of the state of the world and the laws instantiated prior to that moment (E, pp 47, 54), or to novel structures, if they are formed by a process of deterministic chaos (E, p 57, Stephan 1998, p 647) — assuming that emergentism need not be indeterministic Finally, the ninth characteristic, the one most hotly debated in contemporary literature, is *downward causation* novel structures or new forms of "relatedness" of objects (or higher levels of reality) manifest downward causal efficacy, if they determine the behavior of their parts so that such behavior cannot be reduced to the behavior of those parts in less complex systems (E, p 64) We shall more closely return to the problem of downward causation in section 3 below, as it seems to constitute the major obstacle of modern theories of emergence

The notions distinguished by Stephan enable him to define various notions of emergence differing from one another in strength (see E, chapter 4, cf again Stephan 1998) *Weak emergentism* assumes (1) the naturalistic outlook of physical monism, (2) systemic properties, and (3) synchronic determination This view is weak enough to be compatible even with reductive physicalism (E, p 67) [14] If emergentism is by definition an anti-reductionist position, perhaps we should not speak about emergence here at all Several contemporary writers who use the concept of emergence in a loose sense appear to be working on the basis of an emergentism too weak to be of anti-reductionist value [15]

Synchronic emergentism adds to the above-mentioned three ideas (4) the irreducibility of systemic properties, yielding a doctrine incompatible with reductive physicalism *Weak diachronic emergentism*, in turn, adds to weak emergentism (5) the idea of novelty (of structures, entities, properties, and/or dispositions) and, thus, a temporal dimension *Strong diachronic emergentism* adds both irreducibil-

ity and novelty to weak emergentism Finally, what can be added
is (6) the thesis of the unpredictability of novel systemic properties
or structures *Diachronic structure-emergentism* results from weak di-
achronic emergentism by the addition of structure-unpredictability
Since it does not contain the thesis of irreducibility, it is weaker
than synchronic emergentism and compatible with reductive phys-
icalism When irreducibility, novelty, and structure-unpredictability
are all added to weak emergentism, we get *strong diachronic structure-
emergentism* [16] Synchronic and diachronic forms of emergentism
need not conflict with each other, and are not entirely distinct doc-
trines, as irreducible properties (which synchronic emergentism fo-
cuses on) "are eo ipso unpredictable in principle before their first
appearance" (Stephan 1998, p 640) The converse, however, does
not hold

Stephan seems to think that the strong versions of diachronic
emergentism are not theoretically interesting (E, p 72, Stephan
1998, p 648) I am not sure whether this is true Be that as it may,
Stephan convincingly argues that extremely weak emergentisms,
such as Bunge's, are not interesting, either (E, pp 182-5) Some
currently popular ways of employing the notion of emergence turn
out to be disappointing, too For example, the properties of connec-
tionist systems (nets) are not emergent in any stronger sense than
all systemic properties are (E, p 231) It is too easy, and therefore
irrelevant, to call all systemic properties emergent (cf E, p 242) To
do so is to trivialize the concept of emergence [17] There is, of course,
plenty of room for further disagreements over the desirable charac-
teristics of a notion of emergence that would be both strong enough
and weak enough Stephan points out that we might need a "*mittleren*
Begriff des Emergenten", which would not be as restrictive as strong
emergence but not as inflated as weak emergence He suggests that
structure emergence might be a promising candidate (E, p 248), but
draws a pessimistic conclusion "Mir selbst scheint es eher so zu sein,
daß sich zwischen *starkem* und *schwachem* Emergenzbegriff kein wirk-
lich interessanter Begriff des Emergenten ansiedeln laßt" (E, p 249)

Yet, the ontological concept — or the set of different concepts —
of emergence defined on the basis of Stephan's distinctions serves
as a defense against the critiques of emergentism that have been

presented since the glorious days of logical positivism and its attack on metaphysics Stephan vigorously encounters the criticism — launched by positivist philosophers of science like Carl Hempel, Paul Oppenheim, and Ernest Nagel — that emergence ought to be defined in an epistemic or theory-relative fashion and that we should not believe in emergence as an ontological trait of the real world (E, chapter 11) [18] The debate over whether emergence is an ontological or an epistemic concept now appears to be largely *passé*, everybody involved in the naturalistic and physicalistic project that Stephan's work also belongs to agrees that we should treat emergence, if there is any, ontologically Yet, the ontological or "absolute" approach Stephan proposes sometimes seems to be too strong For instance, I doubt whether we should say that it belongs to the "grammar" of the concept of emergence that something that is emergent cannot stop being emergent (E, p 181), i e , that emergence is an eternal feature of the properties or structures whose feature it is What does the reference to a pre-given "grammar", or to our intuitions about emergence, prove? Isn't one of Stephan's purposes actually to construct a new grammar of emergence, to lay out those features that ought to be taken into account in developing that notion? Couldn't someone else design a somewhat different grammar? We can hardly pretend to know *a priori* that emergent properties will always remain emergent, unless we claim to be absolutely certain that our concept of emergence, or the intuitions it is based upon, will never need revision

More generally, taking epistemological issues more seriously in relation to emergence is not necessarily to end up with the anti-metaphysical attitude of logical positivism It is worth asking how, or from which epistemic standpoints, we are entitled to classify properties as emergent and non-emergent, and to construct the kind of ontological classificatory theory of emergence that Stephan and others advocate Especially if one is (as, presumably, one should be) a *fallibilist* regarding one's intuitions about emergence (or about any other ontological notion), one should admit that emergence is *also* an epistemic notion, not a purely ontological one Our intuitions may mislead us, we may not always know whether a property we classify as emergent will remain emergent in our future, more consid-

ered picture of emergence Accordingly, the fact that an ontological definition of emergence currently satisfies our intuitions (or what we take to be the "grammar" of the notion) can hardly guarantee that the classifications of properties as emergent and non-emergent that it produces are always correct We may have to revise both the theory and the intuitions as inquiry progresses

3. Emergence, supervenience, and downward causation

As Stephan notes, one of the leading positions in recent philosophy of mind, after the decline of the reductionist type identity theory, has been *functionalism*, usually interpreted as a basically physicalist albeit non-reductive view, acknowledging the multiple realizability of mental states and claiming only token identity, not type identity, between mental states and physical states (see E, section 15 2) The urgent task of any philosopher of the mind working in this paradigm has been to secure the right sort of dependence of the higher (mental) states and properties on the lower (physical) ones in the hierarchy of "levels" [19] Rival doctrines differ significantly from each other, but most philosophers of mind are willing to say that the mental supervenes on the physical — in one of the many senses (weak, strong, global) that can be given to the notion of supervenience (cf Kim 1999c) While most people admit, with Kim and Stephan, that supervenience and emergence have something to do with each other, some deny this, arguing that only supervenience is a scientifically acceptable notion and that (ontologically defined) emergence, as something unexplainable and mysterious, ought to be given up On the other hand, almost any functionalist and even reductively physicalist doctrine is compatible with weak emergence in Stephan's sense The interesting issues concern the ways in which allegedly non-reductive accounts of the mind, functionalist or not, can be emergentist while preserving the kind of dependence of the mental on the physical that is supposed to be captured by the concept of supervenience [20]

At this point, downward causation turns out to be a disturbing problem Downward causation is a most important notion in emer-

gence theories, as has been insisted by both critics of emergence
(see especially Kim 1992, 1995, 1999a, 1999b, 1999c) and emer-
gentists themselves (Emmeche *et al* 1997, El-Hani and Emmeche
2000) Arguably, either one accepts downward causation (or at least
ascribes some causal role to the emergent levels of reality) or one
gives up emergentism altogether Emergence, therefore, ought to be
contrasted with (mere) supervenience (weak or strong), that is, with
the mere claim that there can be (say) no mental difference between
given entities or events unless there is also a physical difference be-
tween them However, since the relevant issue here is, as Stephan re-
minds us, the *explanatory* irreducibility of the emergent properties to
their base properties, the relation between emergence and what has
been labeled *superdupervenience*, an explanatorily relevant strong no-
tion of supervenience, is a problem that Stephan needs to examine in
some detail Superdupervenience can be defined as "ontological su-
pervenience that is robustly explainable in a materialistically explain-
able way" (Horgan 1993, p 566, E, p 216, Stephan 1997, p 311) [21]
Thus, superdupervenience is primarily a relation of explanatory re-
ducibility The one who employs this notion urges not only that the
supervening properties in a given system are ontologically dependent
on their base properties, but also that their instantiation can be ex-
plained — in a materialist and causal way (whatever that ultimately
means) — on the basis of the latter Insofar as it insists on explana-
tory irreducibility, emergentism has to claim that "there are systemic
properties which do not *superdupervene* on the properties and rela-
tions of the system's parts, although they supervene mereologically
on them" (Stephan 1997, p 307) This is little more than another
expression for the characteristic of explanatory irreducibility which
appears on Stephan's list of "Merkmale"

The distinction between supervenience and superdupervenience
is needed in order to face the essential problem many people have
observed in emergentism and downward causation Stephan terms
as the "Pepper-Kim dilemma" the choice between two unpleasant al-
ternatives it seems that either the emergentist must deny the causal
efficacy of mental properties, ending up with *epiphenomenalism*,[22] or
she or he must subscribe to downward causation and thereby deny
that the physical world is *causally closed* (E, p 197, and chapter 16

passim, see Stephan 1997) If the first horn of the dilemma is chosen, the mental (or any emergent) level of reality will have to be regarded as superfluous, for it does no genuine causal work This is a form of *mental irrealism* The mental is, so to say, merely a shadow of the physical — a conclusion that emergence theories were originally designed to overcome If the second horn is taken in order to avoid epiphenomenalism, it seems that the emergence theorist must give up one of the basic principles of our scientific world-view, viz , the idea that there is only one single causal system of the natural world In either case, the emergentist arrives at an unsatisfactory position

This argument against emergence theories was first formulated by Stephen Pepper in 1926 (E, pp 198–201), but it has become better known after Jaegwon Kim's strong critique of the prospects of non-reductive physicalism or materialism in general and of emergentism in particular (E, pp 210–8) The basic difficulty the emergentist faces is the one Kim formulates more generally as haunting theories of the mind that want to have the cake and eat it too, i e , theories that want to get both irreducibility and dependence if the relation between the mental and the physical levels or properties "is weak enough to be nonreductive, it tends to be too weak to serve as a dependence relation, conversely, when a relation is strong enough to give us dependence, it tends to be too strong — strong enough to imply reducibility" (Kim 1995, p 140) Needless to say, this same difficulty concerns the notion of supervenience as much as the notion of emergence (Matters are different with superdupervenience, which is hardly a non-reductive relation) To avoid epiphenomenalism, we have to admit that mental properties do causal work, and this requires downward (not merely same-level) causation Kim (1999b, pp 22–5) has convincingly shown that both upward and same-level causation presuppose the possibility of downward causation, since causing the instantiation of any property requires causing the "basal conditions" from which that property (whether emergent or resultant) arises [23] The problem is whether the very idea of downward causation is intelligible can we coherently think that Y's existence (or instantiation) is completely dependent on a more basic property X and that nevertheless Y has causal power to influence X (*ibid* , p 25)[?24]

Stephan's argument against Kim and other critics is based on the proposal that the emergentist can interpret mental causation as a form of *supervenient causation* (E, pp 210 ff, Stephan 1997, pp 308–11) As Kim himself has often pointed out, the notion of supervenient causation tries to secure a causal role for mental properties by treating that role as dependent on, or derivative from, the causal role of physical properties (see, e g, Kim 1999a, p 74) Stephan argues that this idea will enable the emergentist to avoid the dilemma of having to end up either with epiphenomenalism or with the rejection of the principle of causal closure In other words, the emergentist can maintain the causal closure of the physical world by admitting that mental causation is always dependent, in the sense of supervening, on physical causation, which is assumed to be a rather unproblematic and well understood lower-level feature of the natural world The idea is, roughly, that F (or the fact that some entity, x, has the property F) superveniently causes G (or the fact that y has G), if x's and y's possession of the (e g, mental) macro-properties F and G supervenes on their possession of certain microstructural (physical) properties $m(F)$ and $m(G)$, and x's possessing $m(F)$ causes y's possessing $m(G)$ (E, p 211, Stephan 1997, p 307) [25]

However, if the supervenience relation between the relevant macro- and micro-properties is replaced by a superdupervenience relation, we get explanatory reducibility and must give up emergence Superdupervenient causation cannot be used to account for the kind of mental causation the emergentist is committed to, although merely supervenient causation can (E, pp 216–7, Stephan 1997, pp 311–2) Here, the dispute between emergentists and anti-emergentists is transformed into a dispute over what sort of causation is causation enough should we think that all macro-level causal relations are superdupervenient upon micro-level ones, or is supervenient causation sufficient for reasonable naturalistically-minded thinkers? The issue is left open by Stephan, but he is presumably right to point out that Kim should not simply assume that explanatory reducibility (superdupervenience) is required (E, p 18, Stephan 1997, p 312) By just presupposing this, anti-emergentists beg the question against emergentists Even so, Stephan's own suggestion is far from unproblematic The treatment of the "Pepper-Kim dilemma", together with

the attention drawn to the distinction between supervenient and su-
perdupervenient forms of causation, is perhaps his most original con-
tribution to the emergence debate, but it is not clear that the appeal
to supervenient causation helps us to avoid epiphenomenalism If
mental states or events are not causally efficacious *qua* such states
or events, but only as physically realized and determined ones (that
is, if their causal powers are mere appearances of the causal powers
of their physical bases, albeit not reductively explainable with ref-
erence to the latter), aren't we close to mental irrealism, after all?
The employment of supervenient causation in Stephan's argument
can hardly avoid the "potential problem about the causal efficacy of
the supervenient properties in relation to their base properties" that
seems to arise whenever there is a supervenience relation between
two levels (Kim 1999a, p 80)

Stephan's problem can be expressed by comparing his view to
Kim's conclusions Kim (1999b, pp 32–3) argues that emergent
(or any higher-level) properties can be causally efficient only if they
are reducible to lower-level properties — in which case they are not
"higher-level" properties any longer In Stephan's picture, too, the
real causal work is done by the underlying physical properties upon
which the allegedly causally effective mental properties supervene
This hardly amounts to much more than a way of *speaking* about the
downward causal efficacy of the higher level, coupled with a meta-
physical view according to which *in reality* there is no such higher-
level causal efficacy at all, no autonomous domain of causal processes
over and above the actual causal processes that can only be found
on the lower level What one can do, according to Kim, in order
to save something of the idea of mental causation (or at least down-
ward causal explanation) is to give it a merely "conceptual" inter-
pretation "we interpret the hierarchical levels as levels of concepts
and descriptions, or levels within our representational apparatus,
rather than levels of properties and phenomena in the world", be-
ing then able to "speak of downward causation when a cause is de-
scribed in terms of higher-level concepts, or in a higher-level lan-
guage, higher in relation to the concepts in which its effect is rep-
resented" (*ibid* , p 33) [26] Perhaps Stephan has something similar in
mind, but as an attempt to save genuine downward causation (or

the reality of the mental) his argument is hopeless What we have here is little more than the idea that the world itself just is physical (i e , that there "really" are no mental entities) but that we can talk about the world (i e , the processes that "really" are physical) by employing our familiar mental vocabulary [27] The anti-emergentist can always challenge Stephan's reasoning in a way that parallels Kim's general argument against non-reductive physicalism if the higher level causal process is, as Stephan claims, not superdupervenient but merely supervenient on the lower-level one, isn't the explanatorily unified structure of our scientific world-view threatened? Either higher-level causation *just is* physical causation, or it is something mysterious and does not belong to our scientific, physicalistic conception of reality

At this stage Kim will tell us that the possibility of mental causation can be saved by a reductionist account of the mental if mental properties (perhaps excluding qualia) can be accounted for in terms of their functional roles ("functionalized"), then there will be no special problem about their causal efficacy, as that efficacy can be traced back to their (presumably multiple) physical realizers (Kim 1999a, pp 116–8) What Kim has given us is a strong argument that seems to show that all forms of physicalism — i e , all positions abandoning dualism — will lead to mental irrealism If there are mental properties that turn out to be non-functionalizable and hence irreducible, such as, perhaps, qualia, they may be maintained in one's ontology only at the cost of epiphenomenalism their causal impotence must be admitted, if Kim's reasoning is correct Alternatively they may be eliminated altogether Kim points out that there is no great difference between eliminativism and epiphenomenalism, if our criterion of what is real is given in terms of causal powers (*ibid* , p 119) It seems that there is no greater difference between the kind of supervenient causation described by Stephan and merely apparent, non-efficient pseudo-causation than between epiphenomenalism and eliminativism Emergentists like Stephan can have mental causation only by treating it as something that does not belong to our unified scientific picture of the world (which they do not want to do) or by reducing it to the physical *via* a stronger notion of supervenience (as Kim suggests)

I do not think that Stephan or anyone else has shown us a way out of this situation Because of these difficulties, one may be tempted to change the scene One may wonder why the problem of downward causation is such a big issue in the first place Stephan's solution to the problem of mental causation in terms of supervenient causation is rather cheap We might do better if we reconsidered the very causal picture of the mind-body relation presupposed by Kim, Stephan, and most other parties to the debate If we take the idea of emergence seriously in the realm of human mentality and rationality, we might be prepared to argue not that these higher levels of reality can be causally efficacious but, more strongly, that human life simply cannot be adequately conceptualized in its complexity in terms of causal concepts, which are primarily appropriate to the lower (i e , material or physical) level(s) — that is, without taking into account the levels or domains that cannot be included in the causal system of the natural world at all [28] These higher, emergent, domains would accommodate human beings' *rational* or *normative* relations to each other and to the rest of the world which they try to understand through their perceptions and thinking It may be a grave error to analyze the specific features of such relations in terms of the physicalist causal model As several contemporary philosophers have pointed out, physicalists simply have not told us how it is possible to reductively "naturalize" normativity [29]

To adopt the non-causalist approach I am recommending would in some sense be to give up Stephan's and most other contemporary emergentists' physicalistic principles (however non-reductive they are designed to be) But so what? In an important sense, nothing would be lost, except perhaps some scientistic prejudices that are not needed in true naturalism My suggestion has, clearly, its roots in Kant's doctrine of the *two standpoints* equally necessary in our self-understanding as human beings (Korsgaard 1996a) being the kind of creatures we are, we *have to* think of ourselves as simultaneously physical, causally determined elements of the natural world (as denizens of the "world of appearances" in which there is no place for freedom) and as free, responsible moral agents (denizens of the noumenal world) whose rational capacities and deliberations cannot be reduced to, or explained in terms of, causal relations between nat-

ural phenomena This is *not* to say that the principle of the causal
closure of the physical world is false   Instead, it is to say that in
the latter self-description, the description involving the notions of
freedom, thought, rationality, and agency, physicalistically construed
natural-scientific causal notions are largely, if not entirely, inappro-
priate Since both descriptions of human life are needed and are *nat-
ural* for us (this is a premise of the argument we are examining, not
something that could be further justified), there can be no full-scale
causal and physical account of everything there is in the world, hu-
man rationality and moral responsibility included The metaphysical
presuppositions involved in the downward causation debate lead us
astray, if we wish to understand the notions of freedom and agency
as they apply to our human life [30]

Instead of Kant, one may find help in Aristotle, whose concept
of "formal causality", as distinguished from efficient causality, might
be invoked in order to save the possibility of downward causation
(El-Hani and Emmeche 2000, El-Hani 2002) According to El-Hani
and Emmeche (2000, p 258), supervenient causation offers us "an
essentially reductionist picture" and is thus not suitable for the emer-
gentist as a solution to problems with downward causation Here I
completely agree But instead of widening our notion of causation
along these authors' neo-Aristotelian lines, I prefer to stick to the
customary way of speaking about causation roughly in the sense of
efficient causation and to describe what I take to be the proper anti-
reductionist attitude as a *non-causalist* one, especially when we are
dealing with human mentality, rationality, and agency [31] This takes
us to a broadly Kantian picture of human beings

Even though Kant himself was by no means an emergentist, we
may regard the morally concerned, normative and rational nature of
human life as an emergent construct based on the kind of life we
live as causally determined physical creatures There is no need to
deny that we are, as rational and free agents, dependent on (in the
sense of supervenience) our animal, material life as *objects* of the em-
pirical world The "novelty" of the higher *subjective* standpoint lies
not in a scientifically explainable capacity of mental causation but
in the inapplicability of a causal or scientific vocabulary in any com-
prehensive discussion of its distinctive features — in any picture of

human life that tries to accommodate both standpoints belonging to our self-understanding By drawing this distinction between objectivity and subjectivity, we should not postulate mysterious "subjective" *entities* (a paradigmatic example of which is a Cartesian substantial soul) The thesis I am proposing is a thesis about the impossibility of viewing or conceptualizing human life from a certain exclusive (causal-physicalist) perspective, a perspective that is not sufficiently problematized either by emergentists or their critics While a causal (e g , neurobiological) vocabulary is probably necessary in accounting for the complexities of human life, it is by no means sufficient for understanding all aspects naturally belonging to that life Thus, instead of attacking any particular field of scientific research, we are dealing with a philosophical issue concerning the various perspectives or standpoints from which we should approach reality — rather than making metaphysical claims about the constitution of that reality[32] This introduces an epistemic element to our emergence discussion

Furthermore, if we take Kant's own system seriously (in a somewhat reinterpreted or transformed sense), we may also wonder whether the notion of causation itself should not be relativized to the human mind as one of the categories of understanding that structure the world into an intelligible shape for us Among contemporary philosophers, Hilary Putnam (1990) has argued against reductively physicalist construals of causation, insisting that causation is an interest- or purpose-relative concept whose application depends upon the context of explanation and description in which it is used [33] It is, thus, a deeply human, normative notion, which cannot be used to ground a purely natural-scientific account of the place of mentality in a physical world If this is a possible option for a reasonable non-reductive naturalist or emergentist,[34] then there is room for further discussion of the strength of the Pepper-Kim dilemma as an argument against emergentism, as well as of Stephan's response The latter, though suggesting that superdupervenient causation is too reductionist a notion, does not give up the non-Kantian, scientifically realist and physicalist treatment of causation Accordingly, the emergentist might respond to the dilemma by scrutinizing the applicability of the notion of causation, perhaps in a Kantian way, rather than by

rendering mental causation scientifically innocent — and, simultaneously, irrelevant in the domain of *human* mentality — by means of the concept of supervenience

These admittedly vague suggestions are not limited to orthodoxly Kantian accounts of humanity For instance, in addition to Putnam's views, John McDowell's (1996) conception of our "second nature" — something that we acquire not as "merely natural" beings on the level of animals but through *Bildung*, enculturation in a human form of life and tradition — might be reinterpreted along emergentist lines (cf Pihlstrom 1999a) Although McDowell himself would hardly be willing to put it this way, human beings' second nature could be said to emerge out of their "first", animal, nature (perhaps both synchronically and diachronically) As fully human beings, we live, in McDowell's Sellarsian terms, not only in the causal realm of natural law (investigated by the natural sciences), but also in a "space of reasons" where our thoughts bear normative relations to other thoughts and to the world that makes them true or false If the emergentist admits that the latter is an emergent formation based on, yet irreducible to, the former, she or he can easily accept the principle of causal closure, while judging it irrelevant with respect to the space of reasons Thus, the Pepper-Kim dilemma would not even arise, for one of its horns would not be threatening at all The space of reasons, or second nature, is fully natural for us as human beings, but it cannot be accounted for in terms of efficient causation or natural laws To attempt such an account would be to commit a category mistake roughly in the way in which a reductive naturalization of morality would be a category mistake according to Kant Hence, there is no problem of downward causation to be dealt with, at least not between the two "natures" McDowell distinguishes, for to think about the relation between the human mind and culture and its emergence base, the physical world as a realm of causal laws, in causal terms is to adopt a misguided approach, one that precludes a truly emergentist understanding of the novelty of second nature in relation to the "first" What is more, the Kantian-McDowellian picture would also resolve the issue of determinism while the causally closed natural world is governed by laws (which may be statistical instead of being universally deterministic), there is no similar diachronic determina-

tion in the equally natural human world of moral deliberation and
rational thought

As we saw, Stephan insists that emergence theories are, above all,
naturalistic This might preclude the kind of Kantian, Putnamean
and McDowellian suggestion I have made [35] Yet, McDowell's "natu-
ralism of second nature", for instance, is not a supernaturalist theory
It may be interpreted as a diachronically emergentist theory account-
ing for the development of specifically human (normative) capacities
out of something that is originally non-normative and purely natural
or factual but whose primitive non-normativity is never accessible to
us as such We are always already cultural beings whose "nature" is
"second nature" — but who can understand, within that second na-
ture, that there would be no culture without its physical emergence
base It would be an interesting task for emergence theorists to fig-
ure out in detail which notion of emergence would be suitable for a
systematization of these ideas

Seeking to avoid the issue of downward causation along these
lines, we may appeal to other, less explicitly Kantian thinkers, too
For example, G H von Wright's work on human agency, from his
seminal *Explanation and Understanding* (1971) to the present day, is
also non-causalist, as von Wright has consistently opposed attempts
to reduce intentionality or agency to a causal, natural-scientific pic-
ture of the world The notion of freedom, in particular, cannot be
accommodated by that narrow world-picture Yet, "to deny that an
agent is free is to commit a contradiction in terms", and the "mystery"
of human freedom is nothing more than the "mystery" that "there
are agents and actions" (von Wright 1980, pp 77–8) [36] It is not easy
to see how such a mystery *could* be solved by physicalistic versions of
emergentism or by the supervenience thesis What we have here, as
in McDowell, is a clear acknowledgment of the fact that the specifi-
cally human aspects of reality (agency, freedom, and rational actions)
must be conceptualized and investigated on a level different from the
level of physical causal processes Still, there appears to be room for
something resembling the notion of emergence in von Wright's view,
according to which the existence of a reason for action is "a 'global'
fact of non-definite extension", characteristic of persons (von Wright
1998, p 36), and "[t]he mental is the meaning of complex patterns

of bodily reactions" (*ibid* , p 162) Are such global facts (or meanings) emergent in relation to the more local facts about the physical constitution or bodily movements of human organisms, and if so, in what sense?

What I have urged in this section, as a response to both Stephan and Kim, is that the physicalistic and normative levels of investigation are compatible with each other insofar as we accept a (quasi-)Kantian conception of a human being — the one and the same human being — as *both* a factual (empirical, physical, causally explainable) *and* a normative creature (cf Pihlstrom 2002, 2003), i e , as living, at the same time, in the naturalistically describable realm of natural law and in the normative realm that McDowell calls the space of reasons [37] I have not shown that the notion of emergence has any role to play in such a double-aspect conception of human existence Insofar as we stick to the metaphysical meanings this notion receives in contemporary disputes, I doubt that anything like that can be shown Presumably, our having come to occupy the space of reasons, or a normative framework for our thought and action, can be accounted for in terms of emergence (both diachronically and synchronically, assuming that we can identify a suitable dependence or supervenience relation to factual natural laws here) But our *entitlement* to that framework, if Kantians like McDowell or Allison (1997) are right, exhibits a different kind of emergence, as the posing of the very question of our being entitled to employ such a normative framework is already a normative act, a move within the space of reasons In some innocent sense, agency and normativity surely emerge from mere factuality — but in what seems to be an ordinary, colloquial sense rather than any technical, analytically defined sense Here we still seem to be committed to emergence in something like the pre-theoretical sense of a "qualitative leap" Moreover, it is only our ability to move on the normative level, a framework qualitatively different from any causal-physical system, that makes it possible for us to take any stance in the narrower ontological emergence debate — or anywhere else The emergence of the normative, in a strong but rather non-theoretical and certainly non-causalist sense, is always already there, otherwise it would be impossible to pursue any normative problems re-

gardmg our epistemic right (or duty) to use *any* notion of emergence [38]

We shall return to these questions concerning the significance of different notions of emergence shortly Meanwhile, some issues typically ignored in emergence debates should be taken up

4. Some neglected problems

A basically Kantian view not very different from the one sketched above can be found in several philosophical traditions For instance, the emergentist who does not want to be troubled with downward causation can also use Wittgenstein as a source of philosophical insights This suggestion will be postponed to section 5 below Thus, there is much more historical work to be done in relation to the concept of emergence than has (so far) been done While Stephan's book, in particular, is enormously rich in historical material, I want to pay attention to certain scholarly issues that are often neglected in his and other contemporary philosophers' discussions of emergence (and supervenience) This will help us come back to the physicalistic assumptions of the mental causation dilemma from a slightly different point of view

In the first place, not only Kantian "non-causalism" but also the relation between emergence theories and the tradition of *pragmatism* remains insufficiently explored by virtually all contributors to the emergence debate, even though non-reductive naturalism has been a key feature of pragmatism especially since John Dewey [39] Secondly, the relation between emergence theories and the general metaphysical and epistemological *issue of realism* remains open Most emergence theories seem to be based on a strong scientific or metaphysical realism, although weaker variants of realism would be available — e g , within a pragmatist framework [40] The typical question that contemporary emergentists ask is whether there *really* are emergent properties (however they are defined) in the basic structure of the world itself, independently of our conceptualizations of the world Strong emergentists try to give a positive answer to this question, whereas weaker emergentists and non-emergentists like Nagel (1979) and

Griffin (1998) prefer a negative answer Both parties share the realistic premise the world possesses its "own" fundamental structure, and it is the task of natural science to find out what this structure is Analytic philosophy can help us in this ultimately scientific project of representing the world by working out a definition of emergence which enables us to determine, on a scientific basis, whether or not emergent properties really exist (and if they do, where they can be found)

Now, it should go without saying that this strong realism is an assumption that cannot unproblematically be relied on in contemporary philosophy — after the work of Quine, Goodman, Kuhn, Putnam, Rorty, and others This is not the right place to engage the almost indigestible realism discussion, it is sufficient to note that the realistic assumptions shared by emergentists and their critics may be called into question by philosophers with somewhat different persuasions [41] It is probably unfair to criticize emergentism because of its realist and naturalist bias, but it would be interesting to see how a less realistically-minded pragmatist or a thoroughgoing anti-realist would develop a notion of emergence [42]

Thirdly, the classical ontological problem concerning *the nature of properties* (the problem of universals) is left untouched by emergence theorists, although they are willing to speak about emergent — new, irreducible, unpredictable, previously uninstantiated — "properties" Several questions remain open Is the idea of emergence compatible with a realist theory of universals, or does it even require such a theory?[43] Moreover, is there an *instantiation principle* implicitly at work in emergentism? It may seem that there is when diachronic emergentists speak about new properties or relations — systemic properties or relations that have never earlier been realized — coming into existence in the course of emergent evolution, they have to assume that properties or relations cannot "exist" unless they are instantiated in particulars or groups of particulars in the natural world at some moment of time Synchronic emergentists even more clearly deal with instantiated properties only, properties that are instantiated at the time of investigation Stephan explicitly talks about the instantiation of properties when referring to new organizations and structures that "zuvor nicht realisierte Eigenschaften und Ver-

haltensweisen instantiieren konnen" (E, p 12, see p 20) It is common to say that emergent properties are realized or "exemplified" for the first time ("*erstmals*") in the system that realizes them (E, p 16) "Als 'genuin neu' soll [   ] das erstmalige Auftreten eines *Exemplars* eines zuvor uberhaupt noch nicht realisierten *Typs* gelten", Stephan writes (E, p 18), adding that this makes it possible to say that both systems and properties are "new" in the relevant sense Similarly, one may regard laws of nature as new or emergent, if they have not been instantiated earlier, but insofar as there are no fundamental changes in nature itself, the previously uninstantiated laws are new only in a weak sense (E, p 18) So, did the laws "exist" already before they were instantiated or exemplified by particulars? Emergentism may not need the instantiation principle, after all But it is left open how a "type" can be real independently of its exemplars, or before those exemplars are realized (or emerge) in the world

The notions of realization, instantiation and exemplification used here could be made more precise through a systematic discussion of the problem of universals It is rather imprecise just to talk about the instantiation of properties [44] Moreover, certain conceptual connections between emergence theories and theories about universals can be noted For example, there would hardly be any use for the notion of emergence if we were committed to a Platonist account of properties No genuinely new properties would appear, as all properties would already exist eternally in the Platonic "heaven", without necessarily having been or ever being instantiated by any this-worldly particulars However, if we reject the instantiation principle, claiming that the laws of nature never fundamentally change, but are either instantiated or uninstantiated (and when instantiated for the first time, emergent), aren't we actually quite close to the Platonist position? Furthermore, leaving Platonism aside, we may ask whether the emergentist should adopt some more moderate form of realism about universals (e g , the Aristotelian realism, joined with the instantiation principle, defended by Armstrong 1978), or whether she or he could even account for the emergence of unpredictable properties on a nominalist basis Or should we say, rather, that a nominalist cannot postulate emergent properties or laws in any robust sense, because she or he simply does not believe in the existence of

properties but treats them as mere linguistic constructions or classifications? This matter certainly requires further investigation The notion of emergence has hardly been touched in ontological inquiries into the status of universals,[45] nor has the nature of properties been adequately explored in emergence theories, although those theories always rely on some pre-understanding of the concepts of property and property-instantiation [46]

Fourthly, neither in Stephan's book nor in other contemporary discussions of emergence can one find serious considerations of the role of *language* in relation to emergence Among linguists, emergence has recently become a popular notion, and some work should be done in order to find out exactly which emergence concepts have been employed in their theorizing[47] For example, in his attempt to avoid both absolutist and relativist accounts of linguistic meaning, Mika Lahteenmaki (2001) employs the notion of emergence in developing the idea that while the meanings of our expressions are always based on a multiplicity of relatively invariant possibilities, a "meaning potential", actual meanings dynamically arise out of those possibilities through context-embedded dialogical relations among language-users "when we say that actual meanings are emergent from meaning potentials, we mean that actual meanings that arise — or are jointly created — in the interaction between social agents are necessarily novel and unique and, therefore, cannot be reduced to meaning potentials, although meaning potentials are constitutive to actual meanings" This linguistic employment of emergentism yields a diachronic rather than synchronic doctrine, for language is here conceptualized as an historically evolving phenomenon In any event, the more specific similarities between the emergence theories that are currently being formulated within linguistics and the more traditional theories available in the philosophy of mind would deserve further examination

Such a more systematic examination of the various theoretical roles that the notion of emergence might play would not be unrelated to the other "neglected problems" listed in this section A pragmatist emergentist might argue that no properties — either emergent or non-emergent — can be found instantiated "ready-made" in the language-independent physical world, since in an important

sense there is no such absolutely independent world at all Properties, such a pragmatist says, emerge out of our evolving practice of predication [48] Therefore, the role of our language-use in the categorization and constitution of the world whose multi-layeredness we try to understand by means of our emergence concept(s) is, for pragmatists, indispensable Instead of using the notion of emergence in a restricted ontological, metaphysically realistic sense to classify the hierarchies of an (allegedly) language-independent world and its predication-independent property-instantiations, we might do better if we considered emergence as a feature of our linguistically structured, practice-involving world in which we, as reflective creatures, think and act through our capacity of normative evaluation

5. Wittgensteinian issues

The idea that linguistic meanings arise out of the actual use of language in the specific contexts of the practices the language-users engage in is, clearly, a Wittgensteinian idea If this view can be systematized by means of the concept of emergence, we should be willing to look for interconnections between Wittgenstein's philosophy and emergentism

The suggestion made toward the end of the previous section — that property-instantiation is a function of the practices of predication — might be reformulated as the suggestion that ontological views (regarding the nature of properties, the mind-body problem, and possibly emergence itself) can be seen as emerging out of grammar or language-use in the sense of being dependent on, yet something "more" than, the ways in which we speak about reality in language Metaphysics, emergentist and non-emergentist alike, is done in language This is, though probably not Wittgenstein's own view, at least a view inspired by his writings Wittgenstein (1953, I, § 371) thought that the "essence" of a thing lies in grammar It would be interesting to examine the possibility of applying the notion of emergence here in a more systematic way in what sense is our factual language-use the "base" of both (1) the normativity and rule-governed nature of language and (2) the ontological commitments

formulated in language? How exactly are both linguistic norms (as well as their gradual changes) and ontological commitments regarding the world dependent on, but irreducible to, this base, i e , the way we actually use our language in conceptualizing the world we live in?

It is somewhat odd that, given the influence of the later Wittgenstein on late-twentieth century philosophy of mind and language, his views are seldom even mentioned in the emergence and supervenience literature Nor does Stephan discuss him in the parts of his book dealing with the philosophy of mind Despite his emphasis on action, on our linguistic behavior, Wittgenstein was not a simple behaviorist, the connections between his anti-metaphysical conception of the mind and emergentism should at least be explored This neglect of Wittgenstein reflects the current state of mainstream philosophy of mind It is the natural-scientific and causalist picture, salted with supervenience and occasionally emergence, that dominates the discussion There is little room for alternative views, like Wittgenstein's and his followers', which may nevertheless have something to do with the non-reductive spirit of the emergentist tradition

The recent writings of Hilary Putnam provide an example of a Wittgensteinian "dissolution" of the mind-body problem and of the difficulties with emergence and supervenience In a Wittgensteinian manner, Putnam challenges not the truth or reasonableness but the *meaningfulness* of the kind of views that are usually discussed in relation to these notions, forcefully attacking the "Cartesianism-cum-materialism" of recent philosophers of mind [49] He claims that neither the classical problems nor the contemporary positions in the philosophy of mind are fully intelligible (Putnam 1999, pp 78 ff , 90–1, 112 ff) In particular, the basic idea that the mental supervenes on the physical, that the higher level is dependent on and determined by a lower one which is not dependent on anything but could exist without the supervening level, seems to be committed to the intelligibility of the idea that there could be "soulless" (non-mental) entities physically indistinguishable from people Such a hypothesis says that certain people "do not have any mental properties, but all of their physical properties are the same as if they did and their physical environments are the same" (*ibid* , p 83) [50] Attacking Kim's arguments, Putnam says that this hypothesis has not been given a context in

those arguments that would make it intelligible (ibid, pp 90–1) [51]
Because of the inevitable context-sensitivity of the individuation of
psychological characteristics, it is nonsensical, in Putnam's view, to
ask whether psychological and physical states are "correlated" or "un-
correlated" (ibid, p 132) He echoes his own earlier defense of the
interest-relativity of explanation

> [W]hat I have argued is that the fact that there are multiple answers
> to a question of the form "Why did E happen?" including answers
> that appeal to decisions, thoughts, desires, and other "mental phe
> nomena," would conflict with the "causal closure of the physical" if
> the question "What would happen if all the physical events were
> the same and the decision (or the thought, or the desire) were not
> to occur?" were a fully intelligible question But it is not (Ibid.,
> pp 146–7)

I am not saying that Putnam's Wittgensteinian diagnosis is cor-
rect [52] I am just saying that his diagnosis and its intellectual relatives
ought to be taken more seriously than mainstream philosophers of
mind, including emergentists and their opponents, are willing to do
This would require paying more attention to the ways we actually
speak about people having mental states or about their engaging in
some action because of their having some particular mental state In
brief, this kind of a Wittgensteinian rejection of the background as-
sumptions of the emergence and supervenience debates — especially
the assumption that the possibility of there being "soulless automata"
makes sense — would take us closer to the Kantian conception of
agency we encountered earlier, as well as to pragmatism Indeed,
Putnam reminds us, in a much more anti-Cartesian way than most
contemporary physicalists, that the mind "is not a thing, talk of our
minds is talk of world-involving capabilities that we have and activities
that we engage in" (ibid, pp 169–70) Similarly, we should get rid of
the idea that such apparently problematic mental entities as qualia
are mysterious "things" The issue of whether there are subjective
qualitative states, qualia, [53] is usually debated on a Cartesian basis as
the issue of whether there are queer subjective "objects" in the world
and, if so, how they are related to the more truly objective physical
objects and events This is to misconstrue subjectivity as a special

kind of objectivity, which science will hopefully explain It is to mis-
construe the mind as a thing [54]

If Putnam's approach is on the right track, it will, he believes,
eliminate the alleged "mystery" of consciousness (*ibid* , pp 171–5) [55]
This mystery, Putnam says, is usually treated as a scientific issue, and
the prospects of our being able to solve it are said to be either opti-
mistic or pessimistic The final goal, either to be achieved or to be
avoided, is the reduction of this mystery to the world-view of funda-
mental physics, but, again, this mistakenly presupposes that such a
reduction makes sense The recent literature on emergence is com-
mitted to the same project of coming to terms with this great mystery.
But Putnam wants to give up talk about the "mystery", as well as, by
the same token, the metaphor of emergence, which he considers a
"bad" metaphor "It is a bad metaphor because it suggests that all
the true statements expressible in the vocabulary of the 'basic' sci-
ences of physics, chemistry, biology   might have been true *without*
there being consciousness or intentionality In short, it suggests that
we might conceivably have all been Automatic Sweethearts, and that
it is 'mysterious' that we *aren't* " (*Ibid* , p 174)

Here Putnam (as any other "Wittgensteinian" philosopher)
should explicate his Kantian background Are we being told that
human consciousness or intentionality is in the end required — in a
transcendental sense? — for the truths of physics (and other "basic"
sciences) to be true, or even for it being meaningful to claim that they
are true? If so, isn't the mystery of the mind eliminated in favor of a
fundamentally idealistic picture of the world? In fact, I am not op-
posed to such a proposal (whether or not Putnam is willing to make
it) The kind of pragmatist and Wittgensteinian position Putnam
tries to develop *is* close to a Kantian type of transcendental idealism
(cf Pihlström 1998) [56] We may even say that the truths of physics,
or the objective structures of the physical world itself, emerge out of
the transcendental subject — or, in a pragmatist reinterpretation of
Kantianism, *human agency* and the *practices* we, as agents, engage in
It is the human world we live in that we structure from the point of
view of physics, for instance, and from innumerable other points of
view Yet, I do not think that this inevitably makes the metaphor of
emergence a bad one This notion may still be used in describing the

relation between the basic transcendental subjectivity (agency) and the conceptually structured world that arises out of that agency As soon as the ontology of natural science has been constituted (on a transcendental level grounded in our agency and practices), the notion of emergence can return to its original task and refer to the hierarchical structure of that ontology, describing the empirical world — pretty much in the way it now does, though within an overall philosophical framework not committed to physicalism

We have, surely, come far away from the original physicalistic starting point of emergentism, yet, I do not think that any supernaturalistic assumptions are needed On the contrary, a scientific ontology of the natural world may emerge entirely naturally from the more basic ("transcendental") agency that grounds all scientific activities This emergence takes place in and through our "second nature" We should not assume that the ontology of the physical world is waiting for us somewhere out there independently of the conceptual and experimental work that we do within the normative space of reasons If, say, pragmatists are right, there is no given, ready-made "emergence base" (i e , something like the physical structure of the world as it is in itself), this base itself emerges from our practice of ontologizing — which, empirically or scientifically speaking, must be seen as emergent in relation to the physical world it constitutes Insofar as we take this pragmatist (admittedly circular) way of thinking seriously, we will be led to doubt the intelligibility of one of the key assumptions of modern philosophy of mind, "the in-principle completability of physics" (Kim 1999a, p 40), an assumption the violation of which is a worry for those (like Kim and Stephan) who think that we should obey the causal closure principle The worry disappears as soon as we realize that we do not really understand what it would mean to "complete" physics — or what it would mean to reductively "preserve" the mental as part of the physical, as Kim suggests ought to be done (*ibid* , p 120)

Finally, it should be emphasized that I do not think that my rejection of the reductionist principles upon which the emergence discussion is founded takes me to the strongly anti-materialist notion of emergence we can find in William Hasker's (1999) theory of "emergent dualism", which is also significantly different from the main-

stream positions in the field but in quite another way[57]   Hasker thinks that the causal closure principle must be rejected, but not because it is (as I have suggested, for Wittgensteinian, McDowellian or Putnamean reasons) meaningless   Unlike, say, von Wright, Hasker does not draw any "Wittgensteinian" distinction between the language-games of "reason-explanations", which he defines as non-causal "normative assessment" of actions in an intentional framework, on the one hand, and scientific causal explanations, on the other   He argues that we must accept that principles of rationality make a difference, "normative assessment" of reasoning is itself a piece of reasoning and must also make a difference in the world   Hence, good reasons should be causally effective in our adoption of beliefs   (*Ibid* , pp 72–3)   The problem with this is the metaphysical assumption of there being a single in itself determined world in which both reasons and causes operate   This assumption begs the question raised by the Wittgensteinian or pragmatist philosopher who emphasizes the differences between our different language-games or practices (of explanation or of something else) that structure or shape our world in various ways   Hasker also thinks that downward causation and the metaphor of levels are problematic, characterizing the main idea of downward causal influence as the idea that "*the behavior of the 'lower' levels — that is, of the components of which the 'higher-level' structure consists — is different than it would otherwise be, because of the influence of the new property that emerges in consequence of the higher-level organization*" (*ibid* , p 175, emphasis in the original)   Again, the Wittgensteinian or pragmatist philosopher might point out that it is not clear that there is, for us, any such "otherwise"   we can hardly conceive what it would be like if there were only the lower-level constituents but no mentality or normativity at all   Thus, Putnam's critique of Kim, based on the hopelessness of the Automatic Sweetheart scenario, can also be turned against the assumptions of anti-reductionists like Hasker[58]

If there is any value in the arguments presented above, it turns out that emergentists like Stephan (or Hasker), who are less reductionistically oriented than Kim, cannot get rid of their worries with downward causation unless they decide to reconsider their commitment to the physicalist picture that makes downward causation a problem

and mentality something that must be "preserved" in the allegedly more fundamental physical structure of the world

6. Conclusion

One may define a great variety of different notions of emergence (or of supervenience, superdupervenience, etc) The exciting issues are pragmatic When confronting a definition of such notions, we should ask what kind of philosophical work can be done with the concepts, and how the definitions help us in understanding, reformulating and (possibly) solving age-old dilemmas, such as the mind-body problem or the relation between factuality and normativity It is obviously *partly* a terminological issue what kind of properties or structures are called "emergent" But terminological or conceptual issues are not unimportant in philosophy, as philosophical problems and views are constituted by the traditions within which they are spoken about The kind of conceptual clarification Stephan, Kim and other contributors engage in is vital philosophical groundwork, especially from the point of view of analytic philosophy

We should not expect too much from such a work, though None of the great old problems of metaphysics and philosophy of mind has been "solved" by Stephan, Kim or any other, but hardly anyone could seriously have thought they would have been The important job done by Stephan, in particular, is a clear formulation of various notions of emergence differing in strength After his book, the discussion probably continues and intensifies — hopefully in a tolerant spirit leaving room for unorthodox suggestions, such as the above-discussed "Kantian" or "Wittgensteinian" dissolution of the dilemma of downward causation

More specifically, however, I have arrived at a pessimistic conclusion in this paper The attempt to develop, with Stephan, a notion of emergence that would be strong enough may be fated to fail, because all the attempts we have seen share the weaker emergentists' and reductionists' physicalistic bias Stephan's views are in this respect not really different from, say, Kim's, Wimsatt's, or Rueger's All these philosophers neglect Kantian, Wittgensteinian and prag-

matist options at their peril We can learn much more about human agency and the mind from Wittgenstein, phenomenologists and pragmatists than from late-twentieth century physicalist philosophers of mind debating over the notions of emergence and supervenience (or their opponents, such as Hasker) What I have been proposing, with the help of philosophers like Wittgenstein, von Wright, Putnam, and McDowell,[59] is a non-causal vocabulary for dealing with some interesting emergent levels of reality, especially human agency, intentionality, and rationality Rejecting the causalist background assumptions of the contemporary paradigm will significantly help the emergentist in avoiding Kim's and other critics' dilemmas [60] The fact that anti-reductionists and non-causalists like Putnam and McDowell are not willing to use the notion of emergence is unfortunate, since that notion might help them formulate their positions in a more systematic manner [61] Were they interested in adopting this notion, that would have to happen through a tradition quite different from the dominating causalist and physicalist one One possible suggestion is the tradition of pragmatism, a framework committed to non-reductive naturalism with a richer conception of "nature" than the physicalistic one assumed in contemporary metaphysics

Pragmatism might also help us in adopting a more relaxed and *pluralistic* attitude to the notion we have been examining [62] Perhaps a notion of emergence based on non-reductive physicalism *à la* Stephan and others *does* do some interesting work in certain specific fields, e g , in the philosophy of biology — possibly in accounting for the relation between biological and physical properties But when we move on to other ontological regions, particularly the mental and cultural realms, we do not seem to have the faintest idea of how the program of non-reductive physicalism could be carried through (with or without emergence) A much stronger notion of emergence than the ones currently used in philosophical literature would be needed for an adequate account of our self-image as consciously acting, free, responsible agents — for an account we might want to give of ourselves as human beings, irreducible to physics or even biology We might, then, have use for (at least) two different concepts of emergence in our philosophical anthropology a relatively weak one to be employed within the factual realm in which humans are parts of

physical and biological nature, and a stronger one to account for the
qualitative difference between this factual level of investigation and
the normative one that is our "second nature" The applicability of
such concepts of emergence would of course have to be assessed in
more detail

Being unable to engage in such further assessment at this point, I
conclude that the attempt to define a general concept of emergence
and to render it physicalistically acceptable is something that we have
little philosophical use for That philosophers are busily engaging in
the project of developing non-reductive physicalism is a sign of the
sad state of contemporary metaphysics, a state that may be described
as pre-Kantian and pre-Wittgensteinian The notion of emergence
ought to be put into work in more promising areas — through some
framework more flexible than physicalism Future will show whether
emergentists can achieve something in those other areas As a thor-
oughgoing fallibilist about my intuitions, I do not want to make any
definitive prophecies about the fate of this fascinating notion [63]

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Notes

[1] Kim (1999a, chapter 1) argues that the thesis of mind body supervenience — that is, roughly, the thesis that there cannot be any mental difference between two entities unless there is some physical difference between them — merely states (and does not solve) the problem of how the mental is dependent on or determined by the physical Cf also several relevant entries in the *Routledge Encyclopedia of Philosophy* (Craig 1998), e g, 'Materialism in the Philosophy of Mind' (by Howard Robinson), 'Mental Causation' (by Barry Loewer), 'Mind, Philosophy of' (by Frank Jackson and Georges Rey), 'Reductionism in the Philosophy of Mind' (by Kim Sterelny), 'Supervenience' (by Simon Blackburn), and 'Supervenience of the Mental' (by Loewer) These contributors share the conviction that there is no generally accepted solution to the mind-body problem, neither in terms of supervenience (since mind-body supervenience itself would have to be explained) nor in any other terms (For some reason there is no entry on emergence in the otherwise helpful *Routledge Encyclopedia*) Some authors, however, argue that supervenience relations need no explanation but can be treated as brute or "explanatorily ultimate" (Zagwill 1997)

[2] For different views on the relation between emergence and supervenience, see Van Cleve (1990), O'Connor (1994), and Humphreys (1997a) and (1997b) Kim's (1999b, p 21) way of putting the matter is clear the notion of supervenience is neutral with respect to the distinction between emergent and non-emergent (resultant) system properties both supervene on the microstructure of the system The notion of a systemic property and the distinction between emergent and resultant systemic properties will be introduced in section 2 below

[3] Kim (1999b, p 4) speaks about the "reemergence of emergentism"

[4] For a somewhat less philosophical book on emergence, introducing various "emergent" phenomena in mathematics and in the natural sciences, see Holland (1998) Holland does not offer any philosophical definition or even problematization of the notion of emergence, instead, he describes the

kinds of emergent (dynamic, self-organizing) processes one finds in mathematics and in nature It is questionable whether all or any of those processes would be regarded as genuinely emergent by philosophers of emergence like Stephan For a more historical volume on emergentism, see Blitz (1992)

[5] Some of his writings on this topic are available in English see, e g , Stephan (1992), (1997), (1998), and (2000b)

[6] Kim has argued for several years, most recently in his (1999a), that non-reductive physicalism, whether defended in terms of emergence or in some other manner, is an unstable position — that is, that it tends to collapse either into reductionism or into some scientifically unacceptable form of dualism Emergentism, in particular, is "a form of dualism that takes mental properties to be nonphysical intrinsic causal powers" (*ibid*, p 12) It "views mind-body supervenience as something that admits no explanation, it is a brute fact that must be accepted with 'natural piety'" (*ibid*, p 13) Beckermann's (2000) defense of physicalism and attack on emergentism is essentially similar

[7] The book also contains a comprehensive bibliography highly useful for anyone interested in the development of emergentist thought and its critique

[8] Cf especially Broad (1925), see also Blitz (1992), McLaughlin (1992), and Stephan (1992)

[9] For sharp criticisms of Bunge and Popper, see E, section 15 3, cf Pihlstrom (1999b)

[10] Similar lists of characteristics are also provided by other discussants cf, e g , Kim (1999b) and El-Hani and Emmeche (2000)

[11] Stephan's naturalism is primarily a metaphysical assumption, he is not urging that we should join Quine's and his followers' program of naturalized epistemology Quinean naturalists may reject the debate over emergence as an artificial metaphysical attempt to interpret the scientific worldview in general terms, arguing that no such philosophical constructions are needed, as science can take care of itself by offering us a truly scientific picture of how our scientific theories of the natural world are possible It may not be easy, however, for such epistemological and methodological naturalists themselves to avoid general philosophical assumptions concerning, e g , emergence and supervenience The relation between metaphysical and methodological naturalism is explored, e g , in several contributions to Nannini and Sandkuhler (2000), as well as Keil and Schnadelbach (2000)

[12] Some theorists favoring a weak concept of emergence admit that their emergentism is a reductionist position (e g , Bedau 2002)

[13] The notion of reduction would certainly deserve further discussion here

It must be left for another occasion to examine how Stephan's characteriza-
tion of explanatory irreducibility is related to Kim's (1999a, 1999b) defini-
tion of reduction in terms of "functionalization", which is different from the
standard "Nagel reduction" that employs "bridge laws" In recent papers,
Stephan (2000a, 2000b) has again emphasized that the minimal natural-
ism associated with emergentism does not amount to "naturalization" in
the sense of explanatory reduction On the contrary, emergence precludes
explanatory reduction

[14] Some philosophers think that precisely because it is compatible with
physicalism, weak emergence is emergence enough Rueger (2000), for
example, argues that examples of weak emergence (both diachronic and
synchronic) can be found within physics itself and that a useful distinction
between "novel" (emergent) and "merely resultant" (non-emergent) prop-
erties can be made within the category of "resultant" or "structural" prop-
erties Rueger's "basic constraint" is physicalistic "the weakly emergent
properties supervene on structural properties and can be functionalized"
(*ibid* , p 308) He tries to show that "novelty" and "irreducibility" can be
defined in a precise manner, without introducing "new causal powers" He
admits that his weak emergence may not be sufficient for those who wish to
have a stronger notion, but insists that it is "all we get if we try to explicate
a notion of emergence that is neither so strong that it has no application
at all, nor so weak that it renders more or less every property emergent"
(*ibid* , pp 317-8) Cf also, among several recent contributions, Humphreys
(1996, 1997a, 1997b), Bedau (1997, 2002), Wimsatt (1997), and Schröder
(1998) These writers typically wish to keep the concept of emergence non-
mysterious and scientifically (physicalistically) acceptable This is not the
right place to investigate their differences

[15] See, e g , Searle (1992, especially p 112), as well as the papers cited in
the previous note, for some brief critical remarks, cf Pihlstrom (1999b)
I am not sure how Searle's weak notion of "causally emergent system fea-
tures" practically differs from, say, Thomas Nagel's (1979) principle of "non-
emergence", that is, that all non-relational system properties derive from
the properties of the constituents of the system and their effects on each
other

[16] See the figure stating the logical relations between these doctrines in E,
p 71, and in Stephan (1998), p 647

[17] The need to define emergence in such a manner that not all systemic
properties turn out to be emergent has been emphasized by several authors
Cf Spencer-Smith (1995) and, again, Humphrey's (1996, 1997a) writings
Kim (1999b, p 18) also notes that the kind of "self-organizing" phenomena

of living systems that are often considered emergent may perfectly well be non-emergent in being functionalizable and thus reductively explainable Kim believes that his views are consistent with Humphrey's (*ibid*, p 34)

[18] For the distinction between ontological and epistemic definitions of emergence, see Pihlström (1999b)

[19] For some useful overviews, see the encyclopedia articles cited in note 2 above

[20] There is also room for debates over which specific features of human mentality, if any, should be regarded as emergent Kim's (1999a, pp 101–3, 1999b, p 18), as many others', candidates are "qualia"

[21] For the distinction between supervenience and superdupervenience, see further Horgan (1993) There is obviously a connection between super dupervenience and Kim's (1999a, 1999b) notion of functionalization (explanatory reduction) For a related distinction between physicalism as an ontological position and as an explanatorily reductionist position, see also, e g, Spencer-Smith (1995), for a critique of Spencer-Smith's "interactional" concept of emergence, see Haldane (1996)

[22] There have been few serious defenders of epiphenomenalism around in recent philosophy of mind, but Lachs (1987) is one of them It is another matter whether some philosophers are committed to something like epiphenomenalism against their own will — for instance, because of their extremely weak notion of emergence This may be the case with Searle (1992), among others

[23] The exception, of course, is "the very bottom level" of the physical structure of the world, which does not arise from any more basic level I leave the problematic assumption of there being such bottom-level physical properties unexamined here

[24] See also the more detailed discussion in Kim (1999a), chapters 2 and 3 Kim (1999b, pp 30–1) himself concludes that a diachronic variety of re flexive downward causation poses no special problems whereas a synchronic variety may be incoherent

[25] Stephan's argument might be compared to El-Hani's and Emmeche's (2000) proposal to treat downward causation, in a way inspired by Aristotle, as a kind of "formal" causation, which is compatible with higher-level entities being realized by, and supervenient on, lower-level ones (see also El-Hani 2002) Here, formal causation must be distinguished (as Aristotle himself did) from efficient causal chains El-Hani's and Emmeche's idea may, however, be closer to the non-causalist alternative I shall sketch below

[26] More generally, Kim (1999a, pp 104ff) suggests, it is less misleading to speak about second-order descriptions or designators of properties or about

second-order concepts than about second-order properties themselves
What would be urgently needed at this point is, I think, some philosophical
account of what concepts *are* Kim's sharp distinction between concepts
and descriptions, on the one side, and real properties, on the other, is a
manifestation of his strongly *realistic* bias, which he shares with most other
emergentists (cf also El-Hani 2002) (I shall return to this problem in sec-
tion 4)

[27] Perhaps surprisingly, Rorty (1991) has formulated a similar position under
the rubric of "non-reductive physicalism"

[28] Even if we argue in this manner, we should be careful to avoid supernat-
uralist assumptions in our conception of the hierarchy of levels This ought
to be kept in mind throughout the following discussion

[29] See the discussion of this issue, with references to relevant literature, in
Pihlström (1996) and (1998)

[30] As Allison (1997) argues, the Kantian conception of agency, the notion
of "acting under the idea of freedom", does not simply amount to an "in-
tentional stance" *à la* Daniel Dennett, since the idea of freedom is (though
theoretically only regulative) "constitutive [   ] of one's *conception* of one-
self as an agent", not optional (*ibid* , p 42, cf also Korsgaard 1996a, 1996b,
von Wright 1998) In human action, "justification goes all the way down"
(Allison 1997, p 44) in the sense that one can so much as *act* only under
the idea of freedom This Kantian view is "rationally (not merely pragmat-
ically) necessitated by the assumption that one's reason is practical" (*ibid* ,
p 47), hence, the issues here are normative and conceptual rather than
metaphysical As Allison puts it, we are *neither* noumenally free and only
apparently determined *nor* really determined and heuristically or fictional-
istically thinkable as free (*ibid*) To the contrary, both freedom and norma-
tivity arise from our self-conception as reflective beings capable of practical
deliberation (cf Korsgaard 1996b)

[31] The Aristotelian modes of formal and functional causality may be more
easily applicable in, say, biological contexts

[32] In the next section, I shall return to a discussion of why it is problematic
to make such metaphysical claims in the first place (e g , in the context of
the mind-body debates)

[33] I shall return to Putnam's views in section 5

[34] I cannot here argue that it is (see Pihlström 1996)

[35] Stephan mentions, dismissingly, Broad's notion of "neutral emergentism"
and, among more recent theories, Colin McGinn's non naturalist "abstract
emergentism" (see E, p 16), among the relatively few non-naturalist op-
tions in the emergentist tradition Perhaps the Kantian or quasi-Kantian

emergence of normativity out of non normative nature would have to be treated in such a non-naturalist manner Still, no supernatural assumptions are necessary The "two standpoints" idea may be labeled "dualistic", but certainly it is not a dualism of Cartesian substances It is a view acknowledging the duality (or, perhaps, plurality) of the *perspectives* we need in order to understand the world in which our human life takes place No unscientific commitments to "souls" or any other ghost-like entities are made

[36] See also the discussions of von Wright's philosophy of human action in Egidi (1999), especially Egidi's own contribution (pp 1–34) For von Wright's more recent reflections on the mind-body problem and the anomalies of contemporary philosophy of mind, see his (1998)

[37] Cf also von Wright's (1998, pp 34–5) formulation the "*robust* reality" of a muscular activity and of an action is the same, yet no description of this "substrate" or physical aspect of an action is sufficient to identify it as an action The action *is* the bodily movement "*viewed under the aspect of intentionality*" (*ibid*, p 142) While scientific explanations of the physical or somatic aspects of actions are causal, "understanding explanations" are evaluative and refer to reasons (*ibid*, pp 19–20, 38–9) This does *not* mean that human beings are, in von Wright's theory, outside nature In fact, both animals and humans are "machines", it is only that humans' (who act for reasons) machinery is more complex (*ibid*, p 43) Freedom is not non-natural or mysterious but is based on our ability to understand human beings as persons and to explain human actions on that basis Since intentions are reasons, not causes, there is no causal relation between the material and the mental (*ibid*, p 109) This suffices as an explicit support for the classification of von Wright as a "non-causalist"

[38] Non-causalist conceptions of freedom and agency cannot be explored any further here Let me just note that the traditional distinction between *reasons* and *causes* (cf the references to von Wright above) is at its strongest in the most important area of evaluation of human action, *morality* Only an extremely crude causalist will claim that moral facts (including facts of motivation, etc) cause actions, rather, ethical considerations (values, obligations, etc) are reasons for acting in certain special ways Somehow, in morality and more generally, reasoned, rational actions emerge from their physical, "robust" aspects to which they cannot be reduced The physicalist paradigm of emergence theories has, however, little to offer us here (although it may be helpful in, say, the philosophy of biology, where morality and normativity are not central issues)

[39] See Pihlstrom (1999b) Authors who recognize, but do not elaborate on, the connections between pragmatism and emergentism include Blitz (1992,

pp 133–5, 200), McLaughlin (1992, p 57), and Emmeche *et al* (1997, p 89) In relation to pragmatism, the doctrine known as *panpsychism* might also be explored This view is hardly more than mentioned by Stephan (E, p 195, n56) Pragmatism, although it can be connected with emergentism, may be seen as flirting with panpsychism or "panexperientialism" (as it is sometimes called), because of the overarching role it accords to human experience — so, at least, William James did For a useful commentary discussing James's relation to panexperientialism, see Sprigge (1993), on panpsychism and panexperientialism, cf also Nagel (1979) and Griffin (1998) More generally, a topic that Stephan does not investigate — as an option that obviously cannot be taken seriously in his view — is an *idealistic* basic ontology of emergentism (see E, p 66, n102) He presupposes that any serious emergentism must start from a materialist or physicalist furniture of the world Idealist or panpsychist doctrines and related views postulating "neutrale, abstrakte oder mentale Grundbausteine" are rather dogmatically abandoned by Stephan and other recent emergentists In our days, it is natural to focus on the scientifically promising materialist versions of emergentism, but it cannot be decided *a priori* that all idealist ontologies which leave room for the emergence of matter out of some non-material basic "stuff" (e g , "experience") are non-starters On the contrary, it would be interesting to know whether something resembling the notion of emergence has been used by the classics of idealistic philosophy — for example, by Hegel and other German idealists

[40] In addition to Margolis's (1984, 1995) writings combining emergentism and pragmatism, see Pihlstrom (1996) and (1999b) For a discussion of emergence within a comprehensive defense of scientific realism (though not physicalism), see Niiniluoto (1999)

[41] The question of realism is also related to the contrast between ontological and epistemic definitions of emergence (Pihlström 1999b) Some purportedly ontological characterizations of emergence seem to reintroduce epistemic issues For example, there is an element of observer-relativity in El-Hani's and Emmeche's (2000, p 272) definition of property emergence, in which one of the features of an emergent property of an object is that it is not observed in any parts of the object

[42] One of the few contributors to the emergence debate who have seriously considered the issue of realism is El-Hani (2002), who relies on Dennett's pragmatic "mild realism" in defending the reality of emergent properties These properties can, he argues, be accepted in our ontology on the grounds of scientific utility El-Hani's opposition to the metaphysical dream of revealing the "real nature of nature", the one single true description of the

world, is healthy from a pragmatist point of view, it should be added, however, that not only scientific utility but the pragmatic work done by the postulation of emergent properties in our wider attempts to understand the world we live in (from scientific, commonsensical, ethical and other perspectives) can be a fruitful criterion for the postulation these properties — or for any ontological decisions (cf Pihlstrom 1996) An exclusive emphasis on scientific usefulness is unnecessarily narrow

[43] One of the questions related to this has to do with the kinds of properties we should have in our ontology The emergentist, of course, postulates not only monadic properties but relations as well This issue can be connected with the problem of downward causation, discussed above One of the properties the emergentist needs in her or his ontology is the supervenient causal relation between the macro-level property-instantiations that supervene on micro-level ones Should we say that in some cases the supervening causal relation is itself emergent in relation to the subvening, more basic one? If so, we may ask whether this causal relation — the relational property we have postulated on the mental level — fulfills the characteristics of an emergent property distinguished by Stephan (see section 2) It may, let us admit, be irreducible to its supervenience base (though this was problematized above), and it may be regarded as unpredictable, but can the causal relation itself exert downward causal influence? This idea is hardly intelligible we do not attach causal powers to causal relations themselves but to entities or properties involved in those relations But given that downward causal efficacy is a characteristic of emergence, isn't it arbitrary to restrict this characteristic to monadic, non-relational properties only? Moreover, insofar as the supervenient causal relation does not have any causal powers of its own (but only the entities appearing in such a relation do), shouldn't we give it up as epiphenomenal, that is, as epiphenomenal *qua* relation? It would look like a shadowy pseudo-relation, a manifestation of the "real" relation obtaining between the underlying micro-level (physical) entities

[44] Antony (1999, p 43) points out that Kim's occasional talk about "instances" of a property ought to be interpreted as referring to entities that have the property rather than to "tropes", or individual property instances This is one distinction which, when overlooked, may cause troubles

[45] One of the leading authorities on universals, Armstrong (1997), employs a (weak) notion of supervenience, but he does not seem to be a friend of emergentism

[46] Again, an excursus to the tradition of pragmatism might help the emergentist Peirce, the founder of pragmatism, always insisted on the reality of "generals" — within an ambitious metaphysical system which, because of

its dynamic character, might also be described as emergentist

[47] Cf recent discussions by linguists in MacWhinney (1999), Maatta *et al* (2000), and Lahteenmaki (2001)

[48] I am, again, tacitly relying on Margolis's (1995) ideas, without trying to interpret his complex view

[49] I focus here on the latter parts of Putnam's (1999) book, but the first part, consisting of his Dewey Lectures (originally published in 1994), is certainly relevant, too See also von Wright's (1998, p 148) statement according to which the problem with mind-matter identification is not truth but intelligibility

[50] Putnam here refers to William James's memorable pragmatic rejection of the notion of an "automatic sweetheart" Another recent writer whose views are close to Putnam's in this respect is John Haldane (2000) Inspired by Wittgenstein, Merleau-Ponty, and Anscombe, Haldane urges that "agency is not a matter of mental command and control of a mindless body" and that the causal and the epistemic or intentional perspectives ought to be distinguished "We act and know we act in virtue of being agents, not by receiving and conveying messages to and fro across the nervous system " (*Ibid* , p 303) On this basis, Haldane concludes that the paradigm of physicalism should be given up in the philosophy of mind (see also Haldane 1996) Cf here also the references to von Wright's views at the end of section 3 above, and see, for a not unrelated account critical of physicalism, Keil (2000)

[51] Rather, Kim's view "presupposes *prior* intelligibility of the idea that certain people are 'soulless automata '" (Putnam 1999, p 91) Putnam also suggests that Kim and other philosophers of mind are in the grip of a "picture" of psychology that does not really exist (*ibid* , p 126) Admittedly, Putnam does not discuss Kim's most recent views (Kim 1999a, 1999b), but I do not think that Kim's position has changed significantly Something like Putnam's Wittgensteinian accusations are still highly pertinent Kim (1999a, p 101) does say, though, that he considers it "inconceivable that a possible world exists that is an exact physical duplicate of this world but lacking wholly in intentionality"

[52] Putnam himself admits, in a pragmatist spirit, that our view of which questions make sense is entirely fallible and may change (Putnam 1999, pp 172–3)

[53] The *locus classicus* of this debate is of course Nagel's (1979) reflection on what it is like to be a bat

[54] Similarly, as Putnam (1990) himself has earlier argued, we should not (*pace* metaethical non-cognitivists and error theorists) misconstrue (eth-

ical) values as queer objects or things that do not fit into the scientific, physicalist picture of the universe, but treat them as genuinely entangled with the facts surrounding us Normativity is as irreducible to factuality as mentality is to physicality — but in both cases there is an entanglement based on our ordinary practices, instead of any Cartesian gap to be bridged by future natural science It should be noted, though, that among contemporary physicalists Kim at least is *not* committed to a picture of the mind as a static "thing"

[55] Recall here von Wright's (1971, 1980, 1998) elimination of the "mystery" of freedom

[56] For comparison, see Allison's (1997, p 48) argument to the effect that only transcendental idealism can "ground the *right* to the conceptual space that we have come to occupy through a process of *Bildung*" Allison's demystified transcendental idealism is compatible with the idea that human reason is historically developing and conditioned (*ibid* , p 45), rooted in natural circumstances in the sense of pragmatism, or McDowell's (1996) "naturalism of second nature"

[57] Unlike most other contributors, Hasker (1999, pp 232–5) finds some prospects for survival after death in his emergent dualism

[58] Even so, there is a lot to learn from Hasker's anti-reductionism His book contains a comprehensive survey of the problems of materialism, especially the causal closure principle When developing his own emergent dualism (see Hasker 1999, pp 177–8, 188 ff), he argues for the existence of not only emergent properties but also emergent individuals (governed by emergent laws), including free will, persons, and minds or souls He reminds us, however, that he is not advocating Cartesian dualism, for it is the brain that produces the mind, the mind is not "added" from outside, but the field of consciousness emerges from the brain roughly in the sense in which a magnetic field emerges from, or is produced by, a magnet (*ibid* , pp 189–90) These metaphors might be used by a less metaphysically inclined thinker for whom, again, free will (for instance) does not refer to an obscure emergent object but expresses a concept to be used in structuring the world from a point of view essentially different from the scientific-causal one

[59] By no means have I assumed, however, that these thinkers would subscribe to my views I have used their ideas as my source of inspiration

[60] The fact that Davidson's causal theory "overturned" the "anticausal position" in the metaphysics of the mind — a position that had been influential — and became "the new orthodoxy" in the 1960s and 1970s (Kim 1999a, p 63) is, thus, an unfortunate incident in the history of recent philosophy Still, the diversity of the non-causalist authors I have cited should be

enough to remind the reader that no return to orthodox Wittgensteinian-
ism, let alone "ordinary language philosophy", has been proposed in this
paper Philosophers like Kim hardly argue against, but simply ignore, the
possibility of interesting non-causal accounts of agency and intentionality
One way of expressing my conclusion in this essay is to say that the prob-
lems with downward causation that Kim skillfully diagnoses constitute a
powerful *modus tollens* against the causalist picture which emergentists like
Stephan have not given up

[61] I think that even explicitly anti-naturalist thinkers such as Taylor (1989)
might have use for the concept of emergence, insofar as they are not deny-
ing that human agency (which, they rightly argue, cannot be reduced to the
physical world) is *somehow* rooted in non-human material nature

[62] Taking pragmatism seriously in relation to emergentism might even take
the latter closer to something like *Lebensphilosophie* (philosophy of life),
without the metaphysical overtones of vitalism rightly discarded by classi-
cal and modern emergentists From a pragmatist perspective, emergentism
would (or should) be much more than a "scientific" doctrine

[63] I began writing this essay as a review of Stephan (1999), but I soon re-
alized that a broader investigation of emergentist ideas was required I am
grateful to Achim Stephan, John Symons, Mark Bedau, Ilkka Niiniluoto,
Heikki J Koskinen, and especially Charbel Niño El-Hani for helpful ex-
changes of ideas related to emergence