ABSTRACT: Ken Wilber’s writings are lively, beautifully executed, and vast in their scope. At the same time, some features of his work, as this paper illustrates, present problems for some academic philosophers. Yet it would be good for transpersonalist theory to appeal to a broad academic philosophical audience. In the enterprise of opening some doors to such an audience for transpersonalism, some of the philosophical difficulties in a few of the main tenets of *Sex, Ecology, Spirituality*, are explored, and, based on them, two questions are raised.

THE CENTRALITY OF THE FIRST TENETS OF *SEX, ECOLOGY, SPIRITUALITY* IN KEN WILBER’S SYSTEM

The writings of Ken Wilber are remarkable for their encompassing qualities; they provide an excellent framework for exploration. His style is vibrant, his exposition is vivid, and his philosophy embraces many approaches. At the same time, as I will try to show in what follows, some positions Wilber adopts may not appeal to many who are familiar with various philosophical distinctions. As a result, two questions to Ken Wilber and other transpersonalists will be raised.

Wilber’s most detailed work is *Sex, Ecology, and Spirituality (SES)*. In later works Wilber often comes back to it as having established the main points that he relies on and on which he elaborates. Indeed, it is in *SES* that we find Wilber’s current position spelled out in detail, with an emphasis on the four quadrant holarchy and its implications, and it is in *SES* that the basic arguments for the four quadrant holarchy are given.

The system is presented at first via twenty tenets in twelve branches, and it would be good to go through the details of all of them. However, space prohibits that. Here attention will be given to the first six tenets of the position. Anyone familiar with the twenty tenets will, I think, readily acknowledge the centrality of the first six tenets within Wilber’s system of thought.

THE FIRST TENET OF *SES*

The first tenet says that all things are whole-parts. There is no totality; on the other side, there are no atomic (elementary) parts. Everything is a holon; that is, everything is a whole that has some parts and is itself a part of a larger whole (*SES*, 2nd edition, p. 43; 1st edition, p. 35). This thesis is *holarchism*.

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After a few paragraphs in explanation of the thesis, the first argument for the thesis is presented. A quote is given from Douglas Hofstadter’s book *Godel, Escher, Bach*. Hofstadter says that there are infinitely many virtual particles in a cloud that surrounds a bare (non-interacting) particle.

However, there would be a difference between a measured particle and a cloud of virtual particles in a recursive mess surrounding a bare particle. Hofstadter does not say that the particles in a virtual cloud are parts of a measured particle. Wilber takes it that Hofstadter shows the virtual particles to be parts of the bare particle. But, in addition, they must be parts of, or holons in, an apparently elementary measured particle, such as (using Hofstadter’s 1980 view) a measured electron. Hofstadter was only talking in some sense about the pre-measurement quantum system; but Wilber is arguing for a holarchy that includes measured particles, and if his holarchism theory works, the measured particles would have to have parts. And so, in Wilber’s system, a virtual particle is taken as, one way or another, a part of a measured particle. Of course Hofstadter says (p. 142) that bare particles “don’t exist”; what, then, in Wilber’s system, are the virtual particles parts of in relation to the measured particles? Looked at from the other side, what are the parts of the apparently elementary measured particles, e.g., (as Hofstadter put it) measured electrons? Wilber’s reliance on Hofstadter’s model is, to begin with, questionable.

It should be noted as well that the path integral model was developed for a quantum theory that did not include the gravitational force. Moreover a superpositional system obliterates the identity differences of measured particles. Once quantum superpositions are considered, the classical identity relations of ordinary whole-part systems are abandoned. Either sum-identity or fuzzy identity relations might be considered, but not whole-part relations as are found in the classical system. For several independent reasons, then, there is little immediate ground on which to think of the particles in a cloud of virtual particles as parts of a measured particle e.g., a measured electron.

Moreover, there are special problems if one does try to think of a virtual particle as a part of a measured particle. There are many infinity defects in quantum theory, and one does not want to add to them. In ordinary part/wholes, if in a given frame one adds the sums of the mass-energies of the parts, the result is the mass-energy of the whole. But this is not true for a cloud of virtual particles and a measured particle. The sum of the mass-energies of the particles in a virtual cloud would yield an infinite mass-energy, and one would not have the mass-energy of a measured particle, nor mass-energy conservation. One would have a straightforward inconsistency.

To put the question another way, mereology, in its traditional form, is the study of ordinary parts; it formalizes our ordinary, that is, classical, notion of parts. Clearly, the way the particles in a cloud of virtual particles relate to a measured particle is not by being ordinary parts, or classical parts, of it. Then why call each such particle a part? This is a straightforward question that ought to be raised; then it ought to be answered.

It should also be mentioned that it has often been held that part-whole analysis breaks down at the level of quantum physics. For example, “Feynman describes the
atomic hypothesis as the most useful single piece of information about the physical
world. Certainly nature seems to be partitionable into individual parts in nearly all
macroscopic cases. But this property of the physical world is in effect a ‘broken
symmetry’—it fails in quantum phenomena’’ (Bilodeau 1998, p. 224). As suggested
above, until recently it was typically suspected that electrons, to whatever extent
they are or can be measured, are elementary, that is, indivisible as far as parts are
concerned. Hofstadter, too, speaks of electrons as ‘‘elementary particles’’ (p. 142).
Even if electrons, and similar particles, are not elementary, there are still many
reasons for holding it probable that some things are elementary.3

A hefty bit of work still needs to be done if the first argument is to be made good.
This is not to say that it cannot be made good. Perhaps it can; perhaps it cannot. This
is only to say that further work is required if the argument is to appeal to
philosophers of science who want a few of the details filled in.

One other point about this first argument. The quote is offered from Hofstadter, but it
is from distant sentences in the original, namely, from p. 142, and p. 146 in Hofstadter,
yet no points of elision are placed in the quote in SES. This is worth mentioning
because in the very next paragraph in SES, another quote is given, and this quote,
again, places distant sentences in the original together. Again, there are slight changes
in the sentences, yet without markings of the changes. Moreover, in the second
quote, there are significant errors caused by the leaving out of some sentences of the
original material quoted. For one thing, some of the dropped out sentences refute
the main theory Wilber is supposedly establishing by quoting from that material.

There are many details to notice in the second argument for holarchism; they are
worth going through. The second argument begins on the bottom of p. 43, and
continues on the top of p. 44, SES 2nd edition (or p. 35–36, SES 1st edition). Wilber
begins by saying that ‘‘The notorious ‘paradoxes’ in set theory (Cantor’s, Burali-
Forti’s, Russell’s) . . . placed mathematics in an irreversible ever expanding no upper
limit universe.’’

This, Wilber’s first assertion in the overall argument, is, unfortunately, incorrect on
either of the two interpretations one could give to it. The sentence could mean that
it was the paradoxes that generated the infinite upward side of the hierarchy. On
the other hand, the sentence could mean that even after the non-paradoxical
development of the infinitely upward holarchy, had it not been for the paradoxes,
there could be a top to the hierarchy; given the paradoxes, there can be no top to the
hierarchy. On both readings, the point is, regrettably, incorrect.

First, as perhaps Wilber is at some level aware, it was not the notorious paradoxes in
set theory that generated the expanding no upper limit set theoretical universe. Cantor
developed the limitless hierarchy of sets, beginning in the 1870’s, without any
reference to paradoxes. Cantor’s hierarchy, rather, resulted by careful application of
his definitions of cardinal equalities and inequalities based on one to one equivalences
of collections. The paradoxes only began to be noticed in the mid-1890’s.

On the second interpretation, Wilber would take it to be the case that it was the
paradoxes of the 1890’s and early 1900’s that somehow guaranteed the infinite
upwards hierarchy with no stopping point. Now, in the early twentieth century, axiomatic set theories were developed in order to avoid the generation of paradoxes. Since then, a deep confidence has been growing to the effect that there are no paradoxes within the axiomatic set theories. (If there are any, they have not been found in over a century of research.) So concern about the paradoxes in unaxiomatized set theory has dwindled.

This much is well known. For references, there are many standard expository accounts, e.g., *Foundations of Set Theory*, by Abraham Fraenkel & Yehoshua Bar-Hillel Chapter I, 1, “Historical Introduction”, and *The Philosophy of Set Theory* by Mary Tiles, Chapters 4, 5, 6. Alternatively, a non-technical account like *The Infinite*, by Adrian W. Moore has a clear presentation, especially Chapter 8. Indeed, Wilber’s own source, which we’ll look at in a moment, is perfectly clear on these points, as I’ll illustrate below.

Suppose we correct the error here by saying that the paradoxes posed what many thought was a problem for a naïve (unaxiomatized) set theory and that the potential problem was, apparently, solved through axiomatic set theory. Would that help to arrive at the conclusion that the objects of set theory are all holons (that is, objects that are proper parts of wholes and that themselves have proper parts)? The idea would be that if an object in set theory is not a holon, then one will run into a paradox.

However, this idea fails in both the upward and the downward directions. First this will be shown for the upward holarchy. The idea that the high-end objects in mathematics must be holons is refuted by the source material of the quote offered in SES in favor of set theoretic upward holarchism.

The main question left open by the second interpretation of Wilber’s initial remark is whether an axiomatic set theory has a totality item. If there is such a set theory, then the second interpretation (the paradoxes guarantee the upward hierarchy because if an object in set theory is not a holon then a paradox will result) is incorrect. As Wilber’s source mentions, there are axiomatic set theories that have such items.

The source of Wilber’s quote—the quote to be given below—supposedly establishing set theoretic upward holarchism is the article “Mathematics, Foundations of” in the *Encyclopedia of Philosophy*. The endnote for the quote is endnote 3, given on p. 556 of SES 2nd edition, and on p. 528, 1st edition. It says “Edwards, Encyclopedia of Philosophy, vol. 5, pp. 202–3.” I checked Wilber’s source in the original (for reasons that will become clear in a moment) and quickly realized that the end-note was unscholarly, and the quote was triply improper.

First, on the end-note, and this is just a bit of messiness on Wilber’s part, in end-noting a quote one gives the author of the quote. One doesn’t give the editor of the book as though the editor were the author. The author of the *Encyclopedia* article is clearly and easily found at its end. It is Charles Parsons, a distinguished author on set theory, and not Paul Edwards, also distinguished in many ways, and, here, the overall editor of the *Encyclopedia*, not the author of this article. This error is easily repaired.
Now, what about the quote itself (2nd edition p. 44; 1st edition, p. 36)? Here, indented, is Wilber’s material, with Parsons’ strung-together sentences in double quote notation, just as was given in SES in both editions.

“The totality of sets cannot be the terminus of a well-defined generating process, for if it were we could take all of what we had generated so far as a set and continue to generate still larger universes. The totality of sets [mathematical holons] is an ‘unconditioned’ or absolute totality which for just that reason cannot be adequately conceived by the human mind, since the object of a normal conception can always be incorporated in a more inclusive totality. Moreover, the sets are arranged in a transfinite hierarchy”—a holarchy that continues upwardly forever, and must continue upwardly forever (“transfinitely”), or mathematics comes to a screeching self-contradictory halt.

If we check the original, we discover that Wilber took three sentences from three topic-different paragraphs in Parsons’ article, and hitched them together as though they were consecutive sentences in a single paragraph in Parsons’ work. Here is a passage in Parsons’ source article that is between the first and second sentences in Wilber’s quote without points of elision:

For some time after they were first discovered, the paradoxes were viewed with great alarm by many who were concerned with the foundations of mathematics. In retrospect this seems to have been due to the fact that set theory was still quite unfamiliar; in particular the distinction between the customary reasonings of set theory and those which led to the paradoxes was not very clear. The opposition which set theory had aroused had not yet died down. However, the marginal character of the paradoxes has seemed more and more evident with time . . .

So, as will be seen, the quote is triply improper: First, there are no points of elision between the sentences (nor marks of changes within the sentences). Second, Wilber’s history is undone by material omitted between the first and second sentences he quoted. And, third, Wilber’s main point is refuted by material between the second and third sentences.

Here are Parsons’ statements just before the third of the three statements from Parsons (italics added). Of course this passage follows some other material in Parsons’ article, and so its opening content will sound ‘out of the blue’ here:

This way of conceiving sets combines two of Russell’s early ideas for resolving the paradoxes—the theory of types and the theory of “limitation of size.” What are rejected as sets are the most inclusive totalities, such as the entire universe. (Our talking of ‘totalities’ while rejecting them as sets is not incompatible with our conception; as John von Neumann observed, all that is necessary is to prohibit them from belonging to further classes. Von Neumann’s observation was the basis for some new set theories, the principal one being that of Bernays and Godel.)

As it happens, von Neumann, Bernays, and Godel set theories have both sets that are classes and some classes that are not sets. The classes that are not sets (including the
totality class) are not members of anything. So when Parsons says that “the sets are arranged in a transfinite hierarchy” Parsons is talking only about sets; he is not talking about a totality class. And there are set theories each of which has a totality class, as Parsons has informed the reader. Then when Wilber comments that there is “a holarchy that continues upwardly forever, and must continue upwardly forever (‘transfinitely’) or mathematics comes to a screeching self-contradictory halt” there is a clumsy error. There is a claim, or a suggestion, or an assumption, or an ‘as if’ notion (it is hard to tell which) that mathematics has no totality classes and that there are no von Neumann, Bernays, and Godel set theories with totality classes. Yet Parsons had just informed the reader that there are such set theories. These theories could also be called class theories, rather than set theories, but they are typically called set theories.

To put it in the usual vocabulary, proper classes, that is, classes that are not sets, are not (using Wilber’s odd, and in itself unacceptable equivalence of ‘members’ and ‘parts’) parts of larger wholes. And then Wilber goes on to say that we cannot talk of totalities, even though this is just what von Neumann, Bernays, and Godel set theories allow us to do.

In the brackets in the first sentence of the last paragraph, I mentioned how odd is Wilber’s confusion of the part-whole relationship with the member-set relationship. From the point of view of distinctions familiar to academic philosophers, this is another major problem in this argument, and it parallels Wilber’s confusion of the ordinary part/whole relationship with the virtual-particle/measured-particle relationship in the first argument supposing to show holarchism in physics. In this set theoretic case, Wilber did not distinguish between members supposedly as parts on the one hand, and, on the other hand, subsets that might be thought of as parts; and his not having noticed the distinction is, to some readers, anyway, strange. Many philosophers are likely to say that this confusion is so messy that it is not at all clear how to deal with it. There is a sharp difference between part/whole theories—once again, the discipline is called mereology—and set theory. Set theory is about members in sets and members in proper classes; but to be a member of a class—whether the class is a set or a proper class—is not to be a part of a class.

For those interested in the details, here is a brief summary. Of course, if the details seem ‘merely technical’ then one can skip this paragraph. In classical mereology, the part relation is transitive, but in set theory, the membership relation is not transitive. If a set, A, is a member of a set, B, and the set, B, is a member of a set, C, then, since the membership relation is not transitive, we cannot conclude that A is a member of C. However, in classical mereology, if A is a part of B, and B is a part of C, then A is a part of C, since the part/whole relation is transitive. To put it another way, subsets can be thought of as parts of sets, but that doesn’t make subsets members of sets. Also, for reasons of theoretical convenience, a set is a subset of itself; for reasons of consistency, a set is never a member of itself. If one wants ‘part’ to be ‘subset’, then having a series of sets every one of which is a part of a set (by being a subset of a set), does not guarantee that one has what one would call a holarchy. For example, if there is a domain with only two sets, {0}, and {Julius Caesar}, say, there is no holarchy. Yet each set would be a part (that is, a subset) of itself. Perhaps this is enough for now about the important confusion of the part-whole relation and the
member-set relation. (For more on this topic, see E. J. Lowe, 1995, or for a novel and detailed analysis David Lewis, 1991.)

In this way it can be seen that Wilber’s argument for set theoretic holarchism, given in a single short paragraph and one endnote, has at least five errors. In any case, Wilber’s argument for an upward holarchy in set theory fails to mention the central issue of proper classes, including the totality class.

The reader can also see an obvious problem for any claim that there is a downward holarchy in set theory. Standard set theories—with or without proper classes—will still have the null set. The null set has no members. If so, using any definition, including Wilber’s own peculiar definition, as to how the holarchy is supposed to apply to set theories, we have the obvious challenge of dealing with the null set. It would have no member, and so there would be no way to consider it as a holon with what can be called a part (namely, a proper part) for holarchy theory. The null set is, in many iterative set theories, the only set at the bottom; clearly, it is not a holon. Yet Wilber simply states that we have “Holons all the way down” (p. 43 SES 2nd edition; p. 35 1st edition), and “holons within holons within holons” (p. 44 2nd edition; p. 36 1st edition), and seems to think that set theory confirms this. What, then, is to be said about the null set? Also, it is astonishing that Wilber does not raise this obvious question.

There is a third argument for holarchy all the way up and down, accompanying the first argument from Hofstadter. The argument is given in endnote 2 of that section in SES. Its whole content is as follows: “as Jakobson pointed out, ‘An important structural particularity of language is that at no stage of resolving higher units into their component parts does one encounter informationally pointless fragments’” (SES 2nd ed. n. 2, p. 556; 1st edition, p. 528; Jakobson citation given).

However, this quote does not claim to establish an endless downward holarchy. To begin with, not all parts of a physically written letter are linguistically informational. A letter on a page has, as fragments, atoms in the ink. An atom in the ink is not individually visible to the eye. So the addition or removal of one such atom would not make a linguistic informational difference to the letter, nor would it make a difference to the state of mind of a reader of the letter. If Jakobson is referring only to linguistic fragments, he is not arguing for a holarchy. If he is referring to all fragments, still, he is not telling us that each fragment has parts. Either way, he is not arguing for a downward holarchy. If, elsewhere, Jakobson asserts that every part has a proper part, and gives good reasons for that assertion, then that is the assertion, and those are the reasons, that should be quoted and affirmed. In any case, the argument given from Jakobson is not a worthwhile argument for Wilber’s theory of an endless holarchy in the downward direction.

There is one more argument for holarchism given from postmodern poststructuralism (p. 45–7 SES 2nd edition; p. 38–40, 1st edition); however I need not go into it for a variety of reasons. 5

These four arguments for holarchism are the only arguments given in SES. In Wilber’s later works, as far as I am aware, the holarchy theory is taken to have been
established earlier. It thus seems that Wilber has not given adequate grounds on which to accept his holarchism at present.

**Tenets Two, Three, Four, and Five**


This fourfold claim is troubling in each part. How can a set, like the null set, or the set \{1, 45, 798\}, have a capacity for self-preservation or self-adaptation or self-transcendence or self-dissolution? Saying that an atemporal set has such capacities is opaque, at best.

On the capacities of self-adaptation and self-dissolution, Wilber says that a holon “must adapt or accommodate itself to other holons” (2nd edition p. 49; 1st edition p. 41), and that self-dissolution, as one of the four capacities, will be found “across all domains”. It “shows up in everything” (2nd edition p. 53; 1st edition p. 45). ‘Accommodation’ suggests that some modifications are necessary as the adaptation occurs. Sets, of course, are extensionally defined, so self-adaptation seems to be unintelligible for sets. Also, it is hard to know what self-adaptation and self-dissolution means for numerically quantized physical particles in systems with conservation of mass-energy beyond the Planck scale. Perhaps some account can be given. It would be good to know what such an account consists of.

The third capacity is self-transcendence or self-transformation and, as far as mind-body systems are concerned, this has a special significance compared to the other three. The capacity for self-transformation is announced as a capacity whose exercise “results in something novel and emergent,” which is “what Whitehead referred to as creativity” (SES 2nd edition p. 50; 1st edition p. 42). More formally, the claim is made, following Ilya Prigogine, that

> the various levels and stages of evolution are irreducible to each other because the transitions between them are characterized by symmetry breaks, which simply means that they are not equivalent rearrangements of the same stuff (whatever that ‘stuff’ might be), but are in part a significant transcendence, a novel and creative twist.

The self-transcendence or self-transformation is expressed in the claim of irreducibility. However, the philosophical reader is likely to wonder to what sort of irreducibility Wilber is referring. Unfortunately, “they are not equivalent rearrangements of the same stuff” is unhelpful. It would seem that there are more or less as many principal forms of equivalence as there are of reduction. Indeed, each reduction (except an eliminativist reduction) yields a type of equivalence. Let us look, then, at some of the many forms of reduction.

Michael Ruse (1995), for example, says that there are three principal forms of reduction. There is ontological reduction in which two things that seem to be
different things are discovered to be the same thing. There is methodological reduction, in which large things are taken to be best explained as very complex combinations of small things. And there is theoretical reduction in which the vocabulary of one theory is discovered to be replaceable by the vocabulary of another, typically lower level, theory.

Ruse’s ‘reductionism’ also allows for important sub-branches. For example, functionalists may be type-ontological anti-reductionists of B to A who are token-ontological reductionists of B to A.7 There are also ambiguities in uses of the term ‘ontological reduction’. For example, Rosenberg and Kaplan (2005)’s ontological anti-reductionism is held to be consistent with physical facts fixing all the facts. Their ontological anti-reductionism is only a type-ontological anti-reductionism.

Others would present a different account of methodological reduction from Ruse’s, taking methodological reduction to be ‘as-if’ reduction. Still others would state that there are reductions of B to A that are eliminations (the terms in B’s vocabulary do not refer to genuine objects), as opposed to reductions that are ontological, methodological, or theoretical. Moreover, some refer to epistemic reductions, distinguishing them from ontological and theoretical reductions, although how epistemic reductions relate to methodological reductions could be explained in various ways.

Yet again, others would say that there are smooth causal reductions among physical systems. To explain one way of interpreting the latter, the British emergentists at the end of the 19th and the beginning of the 20th centuries thought that there would not be smooth causal reductions in physical systems. Rather, they predicted that chemical or biological or higher order levels would have fundamental laws of their own that overturn the results given through the summing of the operations of laws in physics operating on microparticles in pairs (or in tiny-n n-tuples). If there were such fundamental laws governing, say, biologically complex arrangements of particles, then there would be a non-smooth system. If there are no such fundamental laws at higher scales of complexity, then there is a smooth causal reduction within the physical systems.

These are only some of the forms of reduction; there is also mereological reduction, for example. In any case, ‘reduction’ is a super-charged term; and from the academic philosophical point of view, one cannot use it without at least implicitly specifying what form of reduction one is talking about it. Wilber did not make any implicit specification, and this produces some philosophical difficulties for his theory. In what follows, although I will occasionally mention the term ‘reduction’ and its different uses, I will not directly employ or use it. Instead, I will distinguish between a theory that accepts, and a theory that rejects physical causal completeness.

The philosophical world concerned with mind-body theories and the philosophy of science has a consensus in which physical causal completeness, or (synonymously) physical causal closure, as defined below, is accepted. Physical causal completeness and physical causal closure are, for brevity, referred to, respectively, as physical completeness and physical closure, and in what follows ‘physical completeness’ is
the term that will be used. Physical completeness is a thesis; it can be defined as asserting three things:

first, that the deterministic or probabilistic cause of any physical change is itself a physical cause; second, that physical causes do not fundamentally operate through large configurations of particles, e.g., thousands of atoms, or biologically many atoms, and do not overturn physics-only results; and, third, that physical causes are mechanical (that is, not intrinsically purposive, but rather governed merely by mathematical relations that are not intrinsically purposive).

Some exponents of physical completeness will say that the properties of the states covered by physical completeness exclude qualia. Others would include qualia. Nonetheless, all supporters of physical completeness agree that the results of physical completeness include measures of mass-energy and momentum. That allows us to set aside the issue of how many other large-scale properties are included in the results of physical completeness. I will review the reasons that have led a consensus of mind-body philosophers and philosophers of science to accept physical completeness (with or without limitation on properties like qualia) while discussing Wilber’s sixth tenet below.

The main comment here is that it is unclear what Wilber’s irreducibility in the passage quoted is supposed to mean. It could be against type-ontological reduction. It could be against token-ontological reduction, and against it in such a way as to exclude physical completeness. But there is a vast difference between these interpretations. To the extent that he is against type-ontological reduction he would be agreeing with a large group of mind-body philosophers. (These philosophers do accept physical completeness, though.) To the extent that he is against physical completeness, he would be disagreeing with the vast majority, indeed, the consensus, of mind-body philosophers and philosophers of science. A clarification is needed. Providing a clarification here, however, is not a trivial matter.

To be as brief as one can be, it is ironic to find that (a) a strong majority, indeed a consensus, of current mind-body philosophers and philosophers of science oppose a system with intrinsic (not in any sense summatively) noetic objects causally interacting with gross physical bodies; (b) Wilber’s system centrally includes such items; and (c) Wilber thinks that his system is permitted by a consensus of philosophers. Here is one example. Wilber says “there is a general consensus that neither mind nor brain can be reduced without remainder to the other” (“Waves, Streams, States and Self,” Abstract, and see, similarly, p. 146). This is unfortunately incomplete, as was shown above. He then goes on to present a full-spectrum theory of consciousness. His idea is that he is practicing integrative work (p. 146); in other words, in this case, he is adding to a base that already exists and that he accepts. In doing so, however, he presents a theory in which there are items at the higher subtle bodily levels and at the lower gross bodily levels that are token distinct and causally interactive. And the items at the higher subtle levels have intrinsic intentional purposive contents (“conscious, psychic, or noetic capacities being an intrinsic part of the universe” p. 150), whereas the gross bodies need not have, and, in the contemporary picture, would not have, such intrinsic capacities. The problem is that there is a consensus (and a well grounded consensus, as I will
try to show in the next section) in mind-body philosophy and the philosophy of
science against higher order intrinsically (not in any sense summatively) noetic
objects in causal interaction with gross physical bodies.

For example, Theo Meyering (2000) refers to Milder than Mild Materialism, based
on physical composition, which, he says, “is still intact” (p. 184). And Meyering
accepts physical completeness (p. 195), even though he, Meyering, develops a form
of top-down causal anti-reductionism. Yes, there is a consensus among mind-body
philosophers and philosophers of science—it includes the acceptance of physical
completeness—but this consensus is incompatible with the basis of the full spectrum
view asserted by Wilber. And, by the way, although there are large groups of
philosophers espousing type or token ontological anti-reductionism of mind-states to
states in biology-chemistry-physics, it is certainly dubious as to whether there is
a consensus on either position. There are class-limited mind-body type identity
reductionists (e.g., David Lewis). There are mind-body type or token identity
reductionists (e.g., David Papineau, 2002, pp. 17-36). There are self-described
ruthless mind-body reductionists (e.g. John Bickle, 2003). There are mind-body
token but not type identity reductionists (functionalists, other supervenience
theorists, and anomalous monists), which might be the position Wilber is referring
to as the consensus position, although the position has been sharply criticized
by Jaegwon Kim. And there are eliminativists, whose position may or may not
be taken as reductionist. There is vigorous active dispute concerning the very
point about which Wilber says that there seems to be a general though uneasy
consensus.

A second, though related, comment is that Wilber’s affirmation of Ilya Prigogine’s
championing of temporal symmetry-breaks is a half-step, rather than a full-step, in
developing a position. One cannot affirm a controversial claim as though that is
sufficient to establish the claim. The temporal symmetry break issues are recognized
by all undertaking physical analysis (including Prigogine) as controversial.
Prigogine was adequately aware of the difficulties, and he tried to solve the
problems. Naturally enough, though, his position has been attacked by thinkers who
take other lines on temporal symmetries.

For example, the famous Wheeler-Feynman particle interaction models are based on
preservation of time symmetries. Many think that it is more in keeping with current
developments in physics to assume the temporal symmetries. For a good recent
generally accessible argument on this point, see Victor Stenger’s book Timeless
Reality, e.g., p. 186. The point is not that Stenger is right and Prigogine wrong, but
rather that controversial matters should be recognized as controversial matters.

To put it crisply, Wilber’s third capacity is unclear.

Putting the four capacities together, Wilber says that all four capacities, which he
refers to as forces, are “operative in even the simplest of holons” (p. 54 SES 2nd
edition; p. 46 1st edition). However, a set, and a spacetime point, and a quantized
particle, it would seem, would not exhibit all four capacities. Yet sets are supposed
to be holons, and the disjunction of the second two is all that physics currently offers
at what we can deliberately vaguely put as a low level of complexity. When one also

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considers the various confusions over the third capacity, one’s confidence in Wilber’s views on the four capacities is, or may be, undermined.

Now I am going to be looking at confusions within the exposition of the sixth tenet. These confusions go right to the heart of the relations between spirituality and science, and so the discussion coming up is, in an important way, more generally significant than what we have dealt with till now, although some strong hints of the issues have been noted.

**THE SIXTH TENET**

The sixth tenet states that “Holons emerge” (SES 2nd edition p. 54; 1st edition p. 46). This tenet is vitally important in Wilber’s worldview. However, the issues it raises are at the heart of what I would say is the communication gap between the academic mind-body and philosophy of science world on the one hand, and, on the other, the world that transpersonalist mystics inhabit. I do not think that that communication gap is long-term tolerable. An important current task is to find a way for satisfactory communication to be achieved between the two groups.

Wilber’s presentation of the sixth tenet, however, exhibits the communication gap; it does not seem to bridge it. As soon as we have the communication gap, then we also have what I claim is a serious problem of content. And the problem of content, interestingly, I will claim, is on both sides. One side I will try to show in this section, and the other side in the Conclusions section. The points to come up in what follows, then, are more significant to one shared project of transpersonalists (reconciliation of mysticism and contemporary science) than the issue of how to resolve the confusions that came up in examining tenets one, two, three, and five. An indicator of the sixth tenet problem did arise in discussion of tenet four (self-transcendence), though, and so there will be some re-focussing of that material.

There seems to be a fundamental inconsistency in Wilber’s theory. To put it another way, a softer way, there is a central point in Wilber’s theory that is generally regarded by the mind-body philosophical community and the philosophy of science community as incorrect. Yet it seems that Wilber has not given any primary evidence for his apparent denial of the mainstream view in those communities, nor does he refer to the large base of scientific evidence for the mainstream view he is going against. In what follows I will quote broadly from Wilber’s works other than SES, as well as SES, on the emergence notion in the sixth tenet of SES.

In general, Wilber wants to integrate mysticism and science, a project of which I wholeheartedly approve. The standard view in the philosophy of science and the philosophy of mind-body relations is that we need to accept physical completeness. I should add that there are good reasons for this consensus on physical completeness.

I will now give four main grounds that, by 1960 or shortly thereafter, resulted in the broad acceptance of physical completeness in mind-body philosophy and the philosophy of science. First, there was a triple scientific result: the mechanization of physics, the physicalization of chemistry, and the chemicalization of biology.
The mechanization of physics began in earnest in the 17th century, though from Newton’s time until the beginning or the middle of the 20th century, there was, frequently, the exception of organisms. ‘Mechanism’ is a slippery term, just like ‘reduction’. In what follows, ‘mechanism’ is meant in a broad Newtonian sense. ‘Broad’ shows that it is not restricted to a billiard ball contact based mechanism; it is also intrinsically non-purposive, and governed only by mathematical relations; and ‘Newtonian’ merely shows that it includes conservation of momentum (for which, see note 8). Mechanization is a transformation of a system from a non-mechanical system—where a ‘non-mechanical’ system is intrinsically purposive at the base level—to a mechanical system, in the sense just defined.

The exception of organisms in regard to what is governed by physical mechanism was important in the thinking of many from the late 17th century until around 1960. On the other hand, some in the 17th century and after took the removal of final causes from basic physical interactions outside of organisms to indicate that this would also be true for organisms. They, or some of them, were impressed with the depth and spread of the non-purposive mathematical structures. By the middle of the 20th century, the power and extent of the non-purposive mathematical structures had become clarified, due, in part, to Emmy Noether’s symmetry theorems. Once one becomes familiar with the counterintuitive power of strictly mathematical relations, the grip of intrinsically purposive base interactions is greatly weakened. In any case, it took almost three centuries from Newton’s *Principia* to the DNA discovery to supply concrete evidence, as well as the rather abstract mathematical evidence, for the elimination of the exception.

Two developments were needed for an elimination of the exception of organisms by concrete (that is, direct scientific) evidence. These developments were the physicalization of chemistry and the chemicalization of biology. Both were gradual. The physicalization of chemistry included various developments in the atomic hypothesis, and, afterwards, the atomic weights and then atomic numbers hypotheses, and, again mostly afterwards, physics’ subatomic hypotheses culminating in the quantum physics of the 1920’s to the 1940’s as applied to atomic-molecular combinations. The chemicalization of biology includes Woehler’s manufacture of urea in the 1820’s, the development of nerve and other cell research through the 19th and 20th centuries, and, finally, the uncovering of basic DNA reproductive structure from 1953 to 1958. One also could include Darwinian evolution, but I will reserve that for the second point in favor of physical completeness.

By 1960 it was clear that no one had presented any fundamental laws or fundamental forces that operate only at chemical or biological levels of complexity, that is, chemical or biological laws or forces that overturn the results of (inaccessible or accessible) sums of operations of laws or forces on groups of small $n$ $n$-tuples of microparticles. One of the joys of quantum physics is its ability to explain chemical relations as complicated implementations of subatomic physical relations. Similarly, at a higher level, the wonder of DNA is that it is a biologically significant configuration based only on ordinary though complicated chemistry. In brief, by 1960 a huge body of scientific work—better, an enormously huge body of scientific work—grounded the judgment that at the fundamental levels, chemical changes are elaborate physics changes, and biological changes are elaborate chemistry changes. It
does not matter that the summing processes are inaccessible to us, both theoretically and practically. Also, there is a double language in biology, the teleological or functional language, and the chemical language; and there is a double language in chemistry, the atomic-molecular bonding and atomic-valence language, and the language of physics that one way or another explains the bonding forces and the valences. Further, the physics relations are governed or specified by mathematical relations that are free of intrinsic final causes. Following 1960, a consensus developed on these points in all but philosophers of religion and spirituality, and a tiny handful of other philosophers, who are (vainly, I would say, given the other three factors as well) waiting for something to change the picture; and this consensus has continued into the 21st century. Some philosophers argue for large scale causal patterns, but without holding that these patterns overturn the (inaccessible) results of nothing but physics.

Undoubtedly, some will wonder what accounts there might be of the arising of consciousness in a system that accepts physical completeness. There are three more points in favor of physical completeness to expose, but the responses to that question may as well be indicated now. There are, it seems, mainly, six groups of philosophers with views on how consciousness arises in a system that accepts physical completeness. There are eliminativists who accept physical completeness (e.g., Paul Chuchland), illusionists who accept physical completeness (e.g., Daniel Dennett), type identity reductionists who accept physical completeness (e.g., David Lewis), epiphenomenalists who accept physical completeness (e.g., John Searle), mysterians who accept physical completeness (e.g., Colin McGinn), and physical supervenience dual property theorists who accept physical completeness (e.g., David Chalmers, 1996). I will return to the dual property theorists at the very end of this section.

The only possible direct evidential problem from the mainstream sciences for the acceptance of physical completeness since 1960 was in the confirmation in the later decades of the 20th century of unprepared non-local correlations in quantum physics. However, such correlations occur only through entangled particles; and, for two reasons, the correlations have not threatened physical completeness. First, there is the cancellation by quantum probabilities of the functional effects at biologically complex levels of particles, so long as there is no good reason to think that distant entangled particles function centrally in the way brains biologically or psychologically operate, and there is no good reason to think that. Second, that empirically confirmable superpositions occur within an otherwise classical system, and that they naturally, or objectively reduce or decohere, seems to have been experimentally discovered or confirmed in 1996. This seems to show the objectivity of the decoherence process, which further illustrates, or may illustrate, how, for biologically complex systems, there has already been objective decoherence, resulting in a functionally classical system with, at most, quantum noise manifesting at the functional level. Perhaps this result is reached by other means; but that doesn’t matter, since the result is consistent with the basic quantum theory.

It is crucial to be aware of, and to appreciate, the four centuries of research behind, and the vastness of, this first point of evidence in favor of physical completeness, despite what has sometimes been the counterintuitive character of physical completeness. It is also important to integrate the depth and elegance of the mechanical-physics understructure, as is illustrated in Noether’s symmetry theorems.
of 1918, with the concrete evidence of the physicalization of chemistry and the chemicalization of biology. Finally, it is important not to confuse the threefold biology-chemistry-physics result with a supposed fourfold psychology-biology-chemistry-physics result that only some would adhere to. The latter may turn out in the next few decades to be confirmed, partially or wholly; on the other hand, it may not. But that the former has already occurred is all that is required by the first point. The biology-chemistry-physics result alone is sufficient to show the kind of non-purposive bottom up causal structure that yields physical completeness.

The second point in favor of physical completeness is Darwinian evolutionary evidence. Darwin’s evidence was missing the detailed chemicalization (and, as it turned out, physicalization) of evolutionary changes. But it was an important factor in favor of physical completeness, since it hypothesized a chemical, perhaps strictly physical, means of accomplishing what seemed to be the evolutionary system, and there were good grounds on which to accept that system. With or without chemical, perhaps physical, details, evolution has a continuity (even if, in contemporary vocabulary, there is punctuated evolution). So it seems implausible to propose ways (never clearly articulated) in which non-physical minds or configurationally bumpy (non-smooth) causal systems could have somehow biologically evolved within what started as a smooth physical system.

The third point in favor of physical completeness expresses one way of rendering the underlying reason that none of the chemical or biological developments of the last few centuries have used any anti-physical completeness specifics. To conceive of plausible specific anti-physical completeness systems gets one into deep difficulties. I have elaborated this problem (implicitly recognized pre-1960) in several recent papers, and in Angel (2004, 2005), I called it ‘the demarcation problem’. The demarcation problem is to locate any boundary in which a biologically complex fundamental law or force would occur. Such a boundary, I claim, cannot be found. As far as the background is concerned, in 1959 J. J. C. Smart concluded that the complexities are just too big to allow for the configuration based causal factors; the configuration based causal factors would have to be based, in humans, say, on millions or billions of particles. So the demarcation problem for configuration-based fundamental forces was recognized in root form right from the beginning of the acceptance of physical completeness.

Fourth, there is the use of the simplicity principle, which rejects unnecessary theories of minds without bodies and rejects other features as well. For example, it rejects hypotheses of intrinsically noetic subtle bodies causally interacting with groups of atoms; and it rejects them for the following two reasons. Such subtle physical objects have not been observed in a well studied system, namely the brain; nor have the effects of such objects been observed despite all the careful examination thus far of cause and effect relations in the brain.

This briefly summarizes the four factors in favor of physical completeness. A word or two further on the fourth factor: Any hypothesis of overturnings of sum results of mechanical (not intrinsically purposive) interactions would go against well established results, on account of merely traditional, and not directly or observationally-theoretical evidential, reasons. These traditions were originally propounded by people who had no notions of the last few centuries of scientific work. The difficulties their theories face
today is by no means to be held against their philosophical efforts, given their time periods. In this way, one can—and, indeed, one should—admire and appreciate the philosophical theories of times past. On the point at issue, it may well be that if a new theory can be found that integrates transpersonalism and a physically complete science, it deserves serious attention. I will return to this in the Conclusions section.

Academic philosophers will tend to say that the principle of simplicity grounds profound skepticism about Wilber’s intrinsically noetic subtle bodily objects in causal interaction with more gross level molecules in the brain. We could note that Wilber has also supported parapsychological experiments, though without citing the experiments, (e.g., “Waves, Streams, States and Self,” p. 150; Eye of Spirit, p. 272). Wilber has in addition claimed that acceptance of such experimental results is not central in his theory. Perhaps such experiments, if there are any, and if they would be confirmed, might be more central to Wilber’s system than he originally thought.

Of course, many academic philosophers, and others, will say that it is a tricky business to cite experiments in favor of parapsychological results. Cite an experiment in favor of the paranormal, and within a decade or so, that sort of experiment may well collapse through refutation by broader experimentation or critical analysis of the flaws in the original experiment. Perhaps Wilber has come to the conclusion that it is tricky to cite experiments in favor of the paranormal, and for that reason Wilber did not give citations to begin with.\textsuperscript{11}

Wilber might also think that mystical experiences cannot be accommodated within a system that accepts physical completeness. However, that judgment would need to compare a system that does accept both transpersonalist mysticism and physical completeness with one that does not accept physical completeness. In the Conclusions section of this paper, and elsewhere, I offer the view that there is a system that fully accepts both.

With regard to the simplicity principle, or Ockham’s razor, we can also add (more technically) that use of Ockham’s razor undoes an overdetermining\textsuperscript{12} causal system of minds and bodies, and works against some ontologically dualist or emanationist theories without measurable energy differences, as might be based on quantum theories. In any case, Wilber has not supported any overdetermining causation; and he does not want mind-body relations theories to be dualist or emanationist on a quantum physics basis; so one expects that the use of Ockham’s razor will not be troublesome to Wilber here.

I will now show eight overlapping ways in which Wilber seems to deny physical completeness. First, in the previous section I noted how “Waves, Streams, States and Self” pp. 149–152 affirms subtle intrinsically noetic bodies in causal interaction with gross bodily things. This apparently denies physical completeness.

Second, Wilber objects to causal analysis based only on things like rocks. He says, for example:

I mean no offense to rocks, but by taking some of the dumbest holons in existence and making their study the study of “really real reality,” these physical
sciences, we have seen, were largely responsible for the collapse of the Kosmos into the cosmos (SES 2nd edition p. 56; 1st edition p. 48).

Wilber’s Kosmos, it seems, goes against physical completeness.

Third, Wilber claims in *A Brief History of Everything* (p. 267) that “the mind is not part of the brain.” This seems to yield a token ontological separation of the quadrants. Moreover, the four quadrants affect each other causally, as he says, e.g., in *A Brief History of Everything* p. 81: “They [the quadrants] all cause, and are caused by, the other quadrants.” If there is emergence, Wilber’s emergence seems to overturn the results of nothing but a summing of forces on many groups of pairs of (or many groups of tiny-\(n\)-tuples of) microparticles in mechanical (non-purposive) interaction.\(^{13}\) Thus, Wilber’s quadrants’ causal relations seem to be inconsistent with physical completeness.

Fourth, Wilber advocates the Great Chain of Being theory “precisely as traditionally outlined by philosopher-sages from Plotinus to Aurobindo to Asanga to Chih-i to Lady Tsogyal” (1997a above fig. 3). Wilber here accepts systems that deny, or seem to deny, physical completeness.\(^{14}\)

Fifth, the philosopher sages would take it that the mystical state is causally released from the gross physical world; then such a state, and a memory of it, it seems, would violate physical completeness.

Sixth, the Great Chain of Being theories have typically espoused a form of *élan vital* or creative vitalism over and above a mere causally non-purposive bottom up physical process between bits of matter specified only by the mathematical relations (whose sums may be theoretically and practically inaccessible to us). Such *élan vital* or creative vitalism, again, seems to require a failure of physical completeness. To put it another way, Wilber’s denial that “chance is pushing the universe” (*A Brief History* p. 26) goes against physical completeness.

Seventh, Wilber clearly denies physicalism, but the many forms of physicalism that developed in the twentieth century were largely, implicitly, generated by physical completeness. And so Wilber’s anti-physicalism is most naturally interpreted as a rejection of physical completeness.

Eighth, in *The Marriage of Sense and Soul* (p. 55-6) Wilber talks of “the disaster of modernity” in which everything, including all values, are collapsed into ‘its’. Physical completeness allows all fundamental accessible or inaccessible causal relations to be causally smooth bottom up non-purposive relations (fundamental in physics only) between the bits of mass-energy. Here, too, Wilber is apparently denying physical completeness.

All in all, Wilber creates the impression that he does not reject natural scientific results, but only philosophical materialism. He sees himself as integrating science and mysticism. However, Wilber denies physical completeness, or it certainly looks that way for the eight reasons given above. Yet physical completeness is still held to be intact in the consensus mind-body and philosophy of science position even
among those who are tough anti-reductionists of one sort or another. Wilber sees himself as building on current science, but it very much seems that he is denying what is accepted in mainstream current science and in its usual philosophical interpretation by mind-body philosophers and philosophers of science.

One other small point should be mentioned. Physical completeness acceptance is consistent with allowing all material things in a given world to have at least protospiritual or proto-experiential properties. If one accepts physical completeness and wants merely some form of property dualism, then one does not have an \textit{élan vital} system. David Chalmers accepted physical completeness in \textit{The Conscious Mind} (see, for example, p. 161) although he had a form of property dualism for our world. So a property dualism in our world does not yield anything like a Great Chain of Being ‘precisely as traditionally outlined’ by the philosopher-sages. So property dualism as recently affirmed by David Chalmers (1996) is by no means “a reinvention of the wheel” (Wilber 1997a: paragraph 11 in “Consciousness Distributed”). That is the modest point being made here.

\textbf{CONCLUSIONS}

Transpersonalists, for good reasons, want to produce an account that will make sense to the academic philosophical community. Wilber’s writings work in this direction, but there are many philosophical difficulties in the theory. Some are easily corrected, like an incorrect author attribution, and errors on the basic history of a field. Some are more problematic. For example, difficulties with part-whole relations vis-a-vis quantum virtual particles in relation to measured particles, difficulties with part-whole relations vis-a-vis set membership, proper classes, and the null set, difficulties with reductionism, and difficulties with organic in relation to inorganic causal processes, can distract academic philosophers reading Wilber’s work. Such philosophical readers may then become less concerned with integrating mysticism and science. However, one who is devoted to integrating science and the perennial wisdom tradition wants to find ways of avoiding such difficulties.

To focus on the last issue raised, science has resulted in deeply important results. It is a noteworthy view—one with which I agree—that physical completeness is in many ways the most important novel result of the last few centuries of philo-scientific investigation. It has, for good reasons that I have tried to indicate, pervaded work of the last forty years or so in the philosophy of mind and the philosophy of science. That there is much evidence for physical completeness has not yet been accepted by the religious philosophical perspectives, nor by the popular culture. But, my guess is that it will be accepted, relatively soon; or, based on the evidence, it should be.

So one question transpersonalists might want to assimilate is, “Should we be persuaded by the grounds for physical completeness?” Anecdotal or experimental claims for the parapsychological results could be put forward as a grounding for the rejection of physical completeness. Yet, in the past, Wilber has not adopted that approach. It would be a noteworthy change if Wilber moved in that direction. In any case, various clarifications are required, or, alternatively, a new approach to integrating mysticism and science is required.
In the above material, the problems in the second, third, fourth, and fifth tenets tend to fold back into the problems of the first tenet or to be absorbed into the problems of the sixth tenet. What results, then, are two main questions, each of which is a multi-part question, and each of which, one would expect, Wilber would want to address. The questions are, of course, also addressed to the wider transpersonalist audience.

**Two Questions**

First, is there good evidence for an endlessly upward and endlessly downward holarchy? And if so, what is that evidence?

Second, is there a serious communication gap between, on the one hand, the philosophy-of-science-and-mind-body world, in which there is a consensus for acceptance of physical completeness, and, on the other hand, the spiritually minded world that either rejects physical completeness or is silent about it? If there is a serious communication gap, how should we bridge it? Should we bridge it by finding grounds to deny current mainstream science and physical completeness? And if so, what might such grounds be? Or should we bridge it by accepting current mainstream science and physical completeness and by developing a new model for the integration of mysticism and science? And if so, what would that new model be?

For those who may be wondering, and as hinted above, my own view is that we need a new model to integrate science and mysticism, one that accepts physical completeness and that asks the scientists to realize the support physical completeness offers for the intellectual underpinnings of philosophical mysticism. After all, physical completeness denies a sharp boundary to the human body and to any organ in it, including the brain. This is a powerful result for the theory of persons. The communication gap between the spirituality realm and the scientific-philosophical academic realm has produced a defect in the content of the scientific-philosophical world view, namely, in its shying away from some of the difficulties brought by what Peter Unger (1980) called *the problem of the many*. However the way the defect occurs, and the way the defect may be corrected, need to be looked at on another occasion. The second way the scientific-philosophical view is defective is in its lack of appreciation of the phenomenological strength of the perennial wisdom tradition.

The perennial wisdom tradition in the past, and, in the present, too, had, and has, a strong phenomenological basis. It also had, and has, however, a variety of philosophical or metaphysical theories that now, it seems, on account of physical completeness, need to be abandoned. Yet they can be abandoned without threatening the strength of the mystical content, both intellectually, given an acceptance of physical completeness, and experientially, given the phenomenological strength of the mystical traditions.

Elsewhere (e.g., 2002, 2004, 2006) I have presented a fully mystical worldview that accepts physical completeness. The view is based on acknowledging the mystical phenomenology in which “I am the All,” “there is no self,” “there is only the partless One,” and “there is nothing” are four phenomenological expressions of transpersonal mystical experience. Each of these experiences and expressions is
available to the mystic, and none of them determines a metaphysical view. It is entirely open to the mystic to accept the boundariless body that physical completeness requires. The practical application of such an integration, using constructive or multi-branched methods, can follow in the academies and other public settings.

NOTES

1 For example, see Wilber (2000b, p. 164); (1998a, p. 181) and (1998b, p. 306) both of which refer to A Brief History of Everything, (1996); and, Wilber (1997a: after Fig. 3). Also A Brief History of Everything (1996, p. xvi), simply informs the reader that “Scholars interested in references, bibliography, notes, and detailed arguments can consult Sex, Ecology, Spirituality.”

2 In the last few years Wilber’s emphasis is on experiencing emptiness rather than on the four quadrants and their implications, but the new emphasis is taken to enclose the system established in SES.

3 Some of the main reasons it is thought that some subatomic particles are or will be found to be elementary are: the uncertainty relations, which highlight the apparently basic features of the Planck scale; the mass-energy numerical quanta; and the finite amount of information in any finite amount of spacetime.

4 The first sentence in the Parsons’ quote is on p. 202, 2nd column, 3rd new paragraph in the Encyclopedia. There are more than two full paragraphs between it and the 2nd sentence in the quote, and the 2nd sentence originally occurs on p. 203, in the first new paragraph of the first column in the Encyclopedia. The third sentence occurs in the middle of the 3rd paragraph of the first column of that page of the Encyclopedia.

5 One of them is the fact that merely quoting a claim about there being endless contexts of interpretation does not provide a first level argument for Wilber’s holarchy. Another is that Wilber himself does not follow the postmodernist approach, since it, often at least, turns into what he thinks of as an objectionable flatland. Wilber hints at this in SES, 2nd ed. p. 47, 1st ed. 39–40, and is clear about it elsewhere, for example, in Marriage of Sense and Soul p. 134–6. A third reason is that there is sufficient distance between a sliding contextual scale as in postmodernism and the specific four quadrant holarchy that is the basis of Wilber’s holarchism to allow one to set aside the postmodernist approach as an argument for Wilber’s holarchism.

6 SES 2nd edition, p. 50, 1st edition p. 42–43; italics on ‘the various levels’ and ‘are irreducible to each other’ are added.

7 To explain ‘type’ versus ‘token’: consider a classroom with many tables. The tables might be qualitatively similar; they could all be of the same type. But one such table would be a different token from its neighbor.

8 Descartes didn’t need to except humans, because he only required the conservation of the amount of motion, not the conservation of momentum, which includes direction of motion. That allowed the Cartesian system to be mechanical and to include intrinsically noetic causes in human minds in causal interaction with mere Cartesian-mechanical bodies. Newton’s mechanism did not allow intrinsically noetic causes of overall direction-switches in motion. That would violate conservation of momentum. Newton, thus, accepted a different form, a tighter form, of mechanism from Descartes. It seems that Newton excluded organisms from his mechanically governed events for theological reasons and on the grounds of suspicions about chemistry re biology. See, e.g., Newton (1669/1995, p. 305–6). Could Newton have, contrariwise, deliberately left open the possibility that intrinsically noetic objects cause physical changes that obey the third law of motion? The matter is unclear. In any case, in our time, such a hypothesis is without evidential plausibility.

9 For which, see Omnes (2005), p. 122.

10 For excellent material on the rise of smooth compositional science from physics through biology, see McLaughlin (1992), and David Papineau’s “Appendix” to his book Thinking about Consciousness. For a quick articulation of the evolutionary point (against interactive dualism) see Patricia Churchland (1986 p. 320). The use of Ockham’s razor is both implicit and explicit in these materials. So too is the productivity of physical completeness, the absence of contrary evidence, and what I have called the demarcation problem, the root form of which JJC Smart was reacting to. As mentioned, I recently reviewed the details of the demarcation problem (2005, pp. 131–139; 2004, pp. 13–14).

11 This opens the door to a large discussion on evidence for parapsychological results. Charles Tart recently said (2004, p. 77) that there have been so many demonstrations of telepathy, clairvoyance, precognition, psychokinesis, and psychic healing that the existence of these phenomena is “beyond any reasonable doubt.” He gives one demonstration (p. 78–9) as an example. As may be obvious, I would reject Tart’s discussion, and others like it, as inadequate for many reasons. Angel (2004), and sources cited there including Angel (1994) Ch. 8, give what I (controversially, no doubt) take to be many problems in the usual defenses of parapsychological results. There are, of course, other such analyses as well. Still, a full treatment of the general factors and the ways they apply in specific cases would be appropriate, if the goal would be to change the minds of those who accept parapsychological results. This paper, however, has the main goal of building a bridge between Wilber-inspired transpersonalists on the one hand, and, on the other, academic mind-body philosophers and philosophers of science. Wilber says that acceptance of parapsychological results is not central in his theory. And the mind-body philosophers and philosophers of science are disposed to reject parapsychological results. For this reason there is no need here to go into the issue of the strength of the evidence for parapsychological results.

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See Guttenplan (1995, pp. 79–89) for a broad introduction to overdetermination, the notion of systematic coincidences of independent causes.

This illustrates how important it is to keep straight the two senses of ‘emergence’. In one sense, emergence does not entail the overturning of sums of physical laws or forces; in another sense, it does.

As illustration, consider the position of Plotinus. Plotinus, the founding Neoplatonist, thought there was a gradation between the formal and the physical. In the standard grouping, Plotinus has four orders: the One = the Good; mind (nous); soul (psyche); and the natural world (physis). The soul can be directed downward toward the physical world, or can be directed upward toward the mind and the One. The direction of the soul indicates some specifics of the causal relationships. As the higher orders are intuited, the higher orders become more and more self-enclosed. And the higher orders are more intentional, purposive, non-chance based, than the lower orders. During the period of time in which the mind or the soul is highly involved with natural bodily affairs, at least the non-purposive bottom up causal smoothness of physical completeness is, or certainly seems to be, denied by the interactions of the higher level mind or soul with the physical world. In this way, accepting Plotinus’s theory requires, or very much seems to require, the rejection of physical completeness.

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