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On Nihilism Driven by the Magnitude of the Universe

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Abstract:

The paper analyzes two contemporary arguments for the view that the universe is so vast that human actions and human life generally have no meaning and significance. The first case, rather essayistic and authored by Thomas Nagel, is estimated as logically non-transparent. The second one, more rigorous and authored by Quentin Smith, expands with the help of the assumption that the universe is spatiotemporally infinite on insights similar to those of Nagel, but its inference to the conclusion remains obscure, too. Hence a detailed reconstruction of the latter argument is set forth. I draw attention to the designed premise that the amount of value (positive or negative) of anything is not greater than aleph-null, noticing the dubiousness of this premise and its clash with Smith's metaphysics of points.

1. The Meaning of „Meaning of Life“

Philosophers commonly discriminate between two different senses of „meaning of life.“ Human life has an objective meaning if and only if (iff, in short) it is objectively worth living. „Objective“ here means independent upon whether conscious organisms believe it is worth living. What about „worth living“? We assume the reader's intuitive, general understanding of this term. But just to suggest some possible specifications: worth living can be taken as overall good – the life in question is overall, globally, good. Another explication could be that a human life is worth living iff it is overall, globally, better that the life was lived than if it was not. This latter phrase, again, we can construe in more than one way. The overall value of the physical universe (i.e., the aggregate of all concrete objects) or the overall value of the world (i.e., the aggregate of all concrete and abstract objects) would be greater if the life took place than if it did not, the concept of *greater* being understood in some ordinal (i.e., qualitative) or even cardinal (i.e., numeric) manner, the latter one involving adding or averaging of units of value, etc., etc. In this article, however, we do not hold to any mentioned definition of „worth living.“ The intuitive, general understanding of this collocation, we assume, is sufficient for our purposes. To sum up, a human life has an objective meaning if and only if it is objectively worth living.

On the other side, a human life has a subjective meaning when the person who lives it cares about some things or strives for some goals. Subjective meaning may vary from one human life to another, and it seems to be solely a matter of the individual's choice. Absolutely subjectively meaningless life is one in which the person cares about nothing and has no goals.

The focus of our interest in this paper is the alleged nonexistence of any objective meaning of human life, as suggested by Thomas Nagel and Quentin Smith. In contemporary philosophy, Nagel produced the most influential rationale of the thesis that human life has no

objective meaning. Smith, in our humble opinion, has produced the most precise defense of the same thesis. From now on, we most times drop the clause „objective,“ keeping it implicit.

2. Nagel

In his famous essay „The Absurd“ (1971) arguing that our life is both absurd and without meaning, Thomas Nagel suggests that any absurd situation, by definition, involves: (i) a discrepancy between (ii) pretension or aspiration and (iii) reality. In other words, something is absurd iff it (in reality) is grossly disproportionate with what it is supposed to be. Nagel avers that there is this kind of disproportionateness in every human life in general: there is (i) a heavy discrepancy between, on the one hand, (ii) the way how we all (or almost all) value our plans and projects (that is the pretension) and on this basis strive to realize them (the aspiration), and, on the other hand, (iii) reality. For our plans and projects (a) have no objective value and/or (b) are all-round (i.e., globally) insignificant. How so? For when we adopt what he calls an „external perspective“, we see that nothing really has a (globally significant) value. Thus we recognize our lives to be *absurd* because we knowingly ascribe to our projects objective or overall serious value – both of which they are lacking, as we know too. As Nagel puts it:

*We see ourselves from outside, and all the contingency and specificity of our aims and pursuits become clear. Yet when we take this view and recognize what we do as arbitrary, it does not disengage us from life, and there lies our absurdity [...]*¹

So, our life is absurd. That is his explicit conclusion. But in addition, and more pertinently to our purposes, it also follows that human life is *meaningless*, without any meaning. Why exactly? As we have indicated, we see two (mutually consistent) ways how to understand Nagel’s claims:

- (a) nothing has value independently upon cognitive acts of conscious organisms;
- (b) no human project is worth pursuing.

As for (a), Nagel, *qua* a philosopher having a soft spot for Kantianism, seems to hold to the following series of entailments. That a life is worth living entails that it is thought of (i.e., apprehended) by some conscious organism as worth living, which in turn entails that it is believed by some conscious organism to be worth living. Thus, it is not true that some life is worth living independently upon whether conscious organisms believe it is worth living: if no conscious organism believed that the life in question is worth living, then it would not be worth living. So, by the definition of meaning of life we suggested above, no human life has meaning. What’s the support for this understanding of Nagel? Why should we think that Nagel holds the view that a life’s being worth living entails that it is thought of by some organism as worth living – why would he maintain that life’s worth living depends on cognitive acts of organism? By the reason that Nagel has been a long-standing proponent of the Kantian approach to ethics. Thence we could expect in his case tendencies to apply

¹ Thomas Nagel, „The Absurd“, in: *The Journal of Philosophy*, 68, 20 (1971), Sixty-Eighth Annual Meeting of the American Philosophical Association Eastern Division (pp. 716-720), p. 720.

transcendental idealism to ethics: values do not exist in the world as it really is, independently of how we conceive it. This expectation is confirmed by the position Nagel embraces in his book *The View from Nowhere*:

[...] *nothing seems to have value of the kind it appears to have from inside, and all we can see is human desires, human striving – human valuing, as an activity or condition.*²

But Kant's defense of his transcendental idealism – the claim that space and time and, hence, spatiotemporal objects and occurrences depend on cognitive acts of organisms and do not exist in the world independently – is generally considered to be unsound, providing no safe ground for (a) or anything else.

As for (b), this interpretation we can derive from *The View from Nowhere*. As we are said again in this text, humans have a special capacity to comprehend the world from various standpoints, either internal or external. The corresponding concepts are degraded. The most internal standpoint would be of a desire of a particular human at a particular time. The most external standpoint would be neutral with respect both to times and persons: it should consider the interests of all sentient beings in all the history and in all places. When we comprehend the world from this external standpoint and imagine the hugeness of the universe, the billions of years and at least billions of beings that are part of the space-time, then our plans, desires, things we value, even all our life as a whole, are at once revealed to be unimportant, of no significant value.³ Note that this view from nowhere markedly reminds us of a current popular thesis that the hugeness and duration of the universe, as compared to our size and puny impact on the world, prove that we are totally insignificant and of no value – both as human individuals and as the whole of humankind. Accordingly, Lawrence M. Krauss, a contemporary physicist, recently commented:

*We are just a bit of pollution [...] If you got rid of us, and all the stars and all the galaxies and all the planets and all the aliens and everybody, then the universe would be largely the same. We are completely irrelevant.*⁴

Indeed, it is indisputable that our lives fill up just a tiny fragment of the cosmic time and that the vastness of the universe is just unimaginable. Still, the way the conclusion is derived is rather obscure. In fact, in „The Absurd“ Nagel himself makes the following note:

*Reflection on our minuteness and brevity appears to be intimately connected with the sense that life is meaningless; but it is not clear what that connection is.*⁵

Yet in *The View from Nowhere* we are given no further explication of the argument's supposed logical skeleton – though, as we have seen, Nagel recycles here the very same argument he doubted in „The Absurd.“ But there is a more rigorous attempt at deriving the

² Thomas Nagel, *The View From Nowhere*, Oxford University Press US, New York 1989, p. 209.

³ Cf. *ibid.*, pp. 215-22.

⁴ Quoted by Richard Panek, „Out There“, in: *The New York Times*, March 11, 2007, online at http://www.nytimes.com/2007/03/11/magazine/11dark.t.html?_r=1.

⁵ Nagel, „The Absurd“, p. 717.

absence of meaning from the magnitudes in the universe authored by Quentin Smith. In fact and to our knowledge, it is the most precise argument in that direction which has been formulated so far. To this attempt we shall devote the rest of our paper.⁶

3. Smith

In 2003, Quentin Smith published an argument for the paradoxical thesis that global (i.e., unqualified) moral realism in conjunction with aggregative value theory and spatiotemporal infinity of the universe imply moral nihilism. According to moral realism, something has value regardless of whether we believe it. Global moral realism consists in the claim that everything which is concrete (particular, as opposed to abstract) has value in this objective way. Aggregative value theory suggests that there are units of value that can be quantified, by adding, averaging, measuring their distribution, and the like. To keep things simple, Smith confines his argument to adding. Finally, moral nihilism says that for any empirically possible action (i.e., every action consistent with the laws of nature and the initial conditions of the universe), it does not matter morally whether the action is performed or not. The gist of the argument is as follows: The whole universe-history (including past, present and future space-time) contains infinitely many locations (sources, instances) of value; more specifically, there are, at least according to infinitely many equal cubes of space and infinitely many future hours. Given this, and given global moral realism and aggregative values, the overall value in the universe-history is infinite. But an action matters morally, we have said, if and only if (iff) it makes some difference to the overall value in the whole universe-history whether that action is performed or not. But no empirically possible action makes such a difference. Thus, no empirically possible action matters morally. To acquire a more vivid image of Smith's idea, let me reproduce his own illustration:

Suppose, for example, that there is an action, A, that has two units of value and that there is a possible history of a universe that is exactly like our universe except for the fact that action A is not performed at the time t_1 when it is actually performed (and all the future consequences of the nonperformance of this act). Let us suppose the nonperformance of this action at time t_1 implies that no units of value have been added at this location but that two units would have been added at this location if the action were performed. Then, if time begins at t_0 , we have two endless histories of the universe that differ in value at least at time t [i.e., t_1]. "But „[e]ach time has at least one unit of value. Since there are an infinite number of times, say hours, ordered in the order of the positive integers, omega, the A-history and not-A history both have the same number of units of value [...]"⁷

In addition,

⁶ Although Thaddeus Metz, „The Meaning of Life“, in: Edward N. Zalta (ed.), The Stanford Encyclopedia of Philosophy (Fall 2008 Edition), <http://plato.stanford.edu/archives/fall2008/entries/life-meaning>, addresses Nagel, it does not take any note of Smith.

⁷ Quentin Smith, „Moral Realism and Infinite Spacetime Imply Moral Nihilism“, in: Heather Dyke (ed.), *Time and Ethics*, Dordrecht 2003 (pp. 43-54), p. 45.

[...] *space is infinite at each time and each cube of space of any given size has some value. Thus, at time t_1 , there are infinitely many equal-sized and non-overlapping cubes of space. Each cube has some value, even if it has the minimal unit of value, one, by virtue of being a cube of empty space [...]* Thus at time t_1 , there is a difference in value of the cube of space that includes action *A* and in the (counterfactual) cube of space that does not include action *A*. Let us call this cube, which is located at a certain region on the planet earth, the cube c_1 . Now at time t_1 , the *A*-universe has cubes of space that extend infinitely in both directions along the dimension of length (as well as other dimensions). Each cube has some value. The cube c_1 that includes the action *A* has two more units of value, let us say, than does this cube in the merely possible universe that does not include *A*. [...] Time t_1 includes aleph-zero units of value, since t_1 includes an aleph-zero number of valuable cubes of space of the size c . Thus the correct history of the two universes is represented as:

History of A-universe:

t_0	t_1	t_2	t_3	t_4
aleph-zero	aleph-zero	aleph-zero	aleph-zero	aleph-zero

The same holds for the not-*A* universe. Since aleph-zero plus aleph-zero equals aleph-zero, there are aleph-zero units of value throughout the infinite future of both our *A*-universe and the not-*A* universe. The number of units of value in both the *A*-history and the not-*A* history is aleph-zero. This number is the number of the union of the units of value at each of the infinitely many times. Further, at each time in the history of each universe, the number of units of value is aleph-zero, since at each time the universe is spatially infinite.⁸

What's the moral? That there are no moral or immoral actions because:

[...] *I cannot increase the value of the universe at time t_1 by performing action *A*, since aleph-zero + 2 = aleph-zero. [...] if there are an infinite number of consequences of my acts with positive values, my actions plus their consequences still do not increase the value of the universe. For aleph-zero plus aleph-zero equals aleph-zero.*⁹

And even if my act

[...] *has an infinite number of consequences, each with a negative value, this still does not decrease the amount of positive value in the universe. For an aleph-zero number of integers (e.g. all the negative integers) can be removed from the set of all integers [... -2, -1, 1, 2 ...] and the amount of positive value in this set will remain the same, namely aleph-zero.*¹⁰

⁸ Ibid., pp. 45-46. Aleph-zero (also aleph null or \aleph_0) is the cardinal number of the set of all natural numbers (i.e., numbers like 0, 1, 2, 3, ...). It is the smallest infinite cardinal number. A cardinal number is a number of members of a set. Aleph is the first letter of the Hebrew alphabet.

⁹ Ibid., p. 46.

¹⁰ Ibid., p. 48.

What about the meaning of life? There isn't any because

[...] *the value of all my acts and conscious states, and physical states, does not increase at all the value of the universe. [...] My life is futile if there is nothing at all I can do to increase the total amount of positive value in the universe.*¹¹

Now we are in the position to sum up the argument in brief:

I. Necessarily, everything concrete has some value independently upon whether some conscious organisms believe it has some value (Global Moral Realism). Premise.

II. Necessarily, units of value add up (Additive Value Theory). Premise

III. Necessarily, an action is morally indifferent iff that action neither increases nor decreases the overall amount of value in the whole universe-history (whole space-time). Premise.

IV. Contingently, space-time is infinite temporally – there are \aleph_0 (aleph-zero) non-overlapping future hours –, and spatially – at each (present) time there are \aleph_0 non-overlapping, equal sized cubes of empty space. Premise.

V. Necessarily, any empirically possible action (act, mental state) has at most \aleph_0 units of positive value and at most \aleph_0 units of negative value. Premise.

VI. Necessarily, \aleph_0 plus a number that is at most \aleph_0 is \aleph_0 . Premise.

VI*. Contingently, for every empirically possible action with at most \aleph_0 units of negative value, that action does not alter the overall amount of value of the whole universe-history. Premise.

Therefore,

VII. Contingently, it does not matter morally what empirically possible action any person performs. From (I)–(VI*).

VIII. Contingently, the life of any person has no meaning. From (I)–(VII).

The contingency of the premise (VI*) and of the conclusions (VII) and (VIII) is infused by the contingency of the premise (IV). In another possible world, where the universe is finite both in time and space, moral nihilism is false and life has meaning due to some contribution every person could make and which would alter, even if in a very minor way, the overall value of the universe. Or, at least, Smith believes so.

Of course, the summary just stated is quite coarse and, again, tells us little about the employed inferential moves. The reader would not find much of use in terms of a more discriminatory grasp if she tried to consult the original paper. We will aim for compensation of this want in our reconstruction of the argument which is to be found below. In order to complete a general picture of Smith's line of thought, however, we must make an instructive detour into several interesting objections he himself takes into consideration.

The first one is an attempt at a straightforward *reductio ad absurdum*, if the argument is valid, then the obvious fact of the existence of some morally bad acts (say, torturing a child

¹¹ Ibid., p. 47.

just for fun, to coin here a paradigmatic example) entails falsity of some premise(s). Still, the fact is not obvious to Smith who dismisses the objection as a *petitio principii*. Given that moral epistemology is an unexplored morass for many philosophers, including ourselves, and that Smith is involved in a convoluted, theoretical, philosophical enquiry of a rather tentative kind, we do not wish to judge him too harshly for his reply to the first, though quite natural, objection.

Secondly, as for (II), are there really precise numbers for the values of particulars? Smith responds that he could make do with approximate numbers:

*It seems evident that some events or things are more valuable than others, that there is such a thing as the relation "is better than" and "is more valuable than" and once we admit this, we admit items that can be enumerated, even if only approximately, as in the case of most measurements in the sciences. To say that "is more valuable than" is a qualitative and non-quantitative relation, is in fact to say that it is epistemically indeterminate to some degree how much more valuable something is to something else. For example, it may be somewhere between twice as good and ten times as good. If we deal with approximations, which is done uniformly in the physical sciences, then the arguments still go through, but without the exact numbers being known.*¹²

Again, we are happy, at least for the sake of the discussion, to accept this reply as promising, intuitive, and reasonable, and even to expand on its allusion to approximate value as we are introducing numeric intervals in our own modification of the argument.

There are technical, consequentialist objections which are aimed primarily at (III), based on the assumption that moral nihilism is false, and trying to restrict the moral and value assessment to finite areas. An illustration of such objections would be the claim that if there is a time *t* such that for any later time *t'* the cumulative account of value produced by action A1 up to *t'* is greater than that produced by action A2 up to *t'*, then A1 is morally better than, and not morally on a par with, A2, even if in the whole history A1 produces the same amount of value as A2. But, as Smith counters, this conditional claim contradicts the rule that an act's value is determined by the overall amount of value that it produces in the whole history. To beat on the same drum over again, we concede to Smith his point as well-articulated.

Even more, as we side with the classical, scholastic adage *ens et bonum convertuntur* (every being *qua* being is good), we take (I) as well-formed and meaningful, and we actually incline to take it, *pace* Nagel, as true. For instance, we don't take it as obvious that value is only value for someone, at a specific moment, with regard to a specific goal, under specific criteria, etc. As there are concepts of interest-relative vs. context-independent causation, and of *de dicto* vs. *de re* belief (belief *de dicto* being a 2-place relation between a believer and a proposition, belief *de re* being a 3-place relation between a believer, an object, and a property), there could well be a 3-or-more-place concept of value (X is valuable for S at *t*, etc.) and at the same time a unary concept of value (X is valuable, period). In fact, Smith makes a case for a version of (I), confined to extended concrete entities, in his book *Ethical and Religious Thought in Analytic Philosophy of Religion*.¹³ But we can't go here into details of his convoluted argument.

¹² Ibid., p. 50.

¹³ Yale University Press, New Haven and Yale 1997; see esp. chapter 25.

Insomuch that we, at present, find the concept of incommensurable values counterintuitive, and welcome quantification, wherever possible, as an extremely fertile ground for the application of formal methods to traditional philosophical debates, and since we are aware of the vast philosophical and economic literature on aggregative value theory, we have a serious respect for (II) and (III), though we display an inclination to a non-consequentialist approach to ethics.

Frankly speaking, (IV), though, *pace* Smith, seems to us to be far from an established scientific fact. Still, we take it as a useful model for a general problem of infinite values. It is worth noting that given a similar conception of moral indifference (an action is morally indifferent iff the performance of that action neither increases nor decreases the amount of value of all there is), instead of infinite space-time we could make the assumption that God exists, has infinite value, and exists only if moral realism is true or life has meaning. The result, in case the rest of the argument was sound, would be a *reductio* of theism. The issue is relevant for all beliefs embracing infinite values independent upon human beings.

Non-standard arithmetic varies with (VI) and the mathematical rationale (to be explicated thereafter) behind (VI*), as well as with the imperative to use only standard, non-infinitesimal units. But, at least for the sake of the argument, we resort, as Smith does, to the rules of standard arithmetic. In addition, non-standard arithmetic is about the result of operations with the kind of (unbounded) numbers Smith has in mind.¹⁴

Finally, as for the comparison of Smith with Nagel, the reader has noticed that Nagel's Kantian line (a) mentioned in section 2 is arguably in tension with Smith's premise (I). On the other hand, Smith defends Nagel's line (b) mentioned in the same section, and for the same reason: the magnitude of the universe. But Nagel does not assume the universe as spatially or temporally infinite. Let's turn now to our reconstruction of Smith's idea.

4. A Reconstruction of Smith's Argument

First, let's leave the modal operators out of the reconstruction because they are unnecessary. Thereafter our reconstruction runs as follows:

1. Any concrete entity has some value (independently of whether conscious organisms believe it has some value). Premise.

Comment: (1) corresponds to (I).

2. Any entity with some value is such that it has some amount of value and such that some (standard finite) units of positive value and some units of negative value express in numeric intervals its amount of positive value, its amount of negative value, and its overall amount of value. Premise.¹⁵

Comment: (2), with (8) and (9) below, correspond to (II).

3. There are some units of positive value and some units of negative value such that they in numeric intervals express the amount of positive value, the amount of negative value, and the overall amount of value of any concrete extended entity. From (1) and (2).

¹⁴ For details cf. Peter Vallentyne & Shelly Kagan, „Infinite Value and Finitely Additive Value Theory“, in: *The Journal of Philosophy*, 94, 1 (1997), pp. 5-26.

¹⁵ All the numbers in value intervals are standard real or hyperreal numbers, that is, real numbers or hyperreal transfinite numbers. Hyperreal infinitesimal numbers not allowed.

4. At any time, there are ${}_0\aleph$ non-overlapping empty m^3 s (cubic meters) of space (independently upon any human action). Premise.

5. There are ${}_0\aleph$ non-overlapping future hours of the existence of empty m^3 s of space (independently upon any human action). Premise.

Comment: (4) and (5) correspond to (IV).

6. There is some unit of positive value U^+ and some of negative value U^- such that any empty m^3 has at least 1 U^+ and 0 U^- . From (3) and the nature of the m^3 s.

Similarly,

7. There is some unit of positive value U^+ and some unit of negative value U^- such that any hour of the existence of empty m^3 s of space has at least 1 U^+ and 0 U^- . From (3) and the nature of the hours.

8. The amount of positive value of the collection of all non-overlapping empty m^3 s of space is \geq the sum of all their amounts of positive value. Premise.

Similarly,

9. The amount of positive value of the collection of all non-overlapping hours of the existence of some empty m^3 s of space is \geq the sum of all their amounts of positive value. Premise.

10. The amount of positive value of the collection of all non-overlapping empty m^3 s of space is $\geq {}_0\aleph U^+$. From (4), (6) and (8).

Similarly,

11. The amount of positive value of the collection of all non-overlapping hours of the existence of some empty m^3 s of space is $\geq {}_0\aleph U^+$. From (5), (7) and (9).

12. For any entity X with some amount of units of value, *the overall amount of X 's value is n^** such that $m - m' \geq n^* \geq n - n'$, where the amount of X 's units of positive value $\geq n$, the amount of X 's units of negative value $\geq n'$, the amount of X 's units of positive value $\leq m$, and the amount of X 's units of negative value $\leq m'$. Premise.¹⁶

13. For any action (or act or state) performed (or counterfactually performed) by a *human* (or by a collection of humans), the overall amount of value of the whole universe-history (the whole space-time) *just without* the performance and the consequences of that action is n^* such that $m - m' \geq n^* \geq n - n'$, where $n \geq {}_0\aleph$ and $m \geq {}_0\aleph$. From (3), (4), (10) and (12), and from (3), (5), (11) and (12).

Comment: In comparison, we make logically weaker claims than Smith as far as we talk only about human actions rather than about every empirically possible action.

14. (i) Any action (single or complex) performed by a human has some amount n'' of U^+ (in its performance and consequences), where $n'' \leq {}_0\aleph$. Also, (ii) any action performed by a human has some amount n''' of U^- , where $n''' \leq {}_0\aleph$. Premise.

Comment: (14) corresponds to (V).

15. (i) For $n \geq {}_0\aleph \geq n''$, $n + n'' = n$. Also, (ii) for $m \geq {}_0\aleph \geq n''$, $m + n'' = m$. Premise.

Comment: (15) is embraced by standard transfinite arithmetic and corresponds to (VI).

¹⁶ n^* is a number or a set of numbers.

16. Any action (or act or state) performed by a human *increases by adding U^+ neither the amount n nor the amount m of U^+* in the whole universe-history. From (13), (14.i) and (15).

Now the time has come for a series of musings concerning (VI*). As already stated, its rationale is supposed to be the following: Even if an act has ${}_0\aleph$ number of negative consequences, this does not decrease the amount of positive value in the universe because ${}_0\aleph$ integers (say, all the negative integers) can be removed from the set of all integers [... -2, -1, 1, 2 ...] and the amount of positive value in this set remains the same: ${}_0\aleph$.

We regard this explication as muddled. Let's have a 4seconds long process with 8 units of positive value and 3 units of negative value, represented by the series: [-2, -1, 3, 5]. What is the overall value? Presumably 5 (cf. (12)). And it does not seem relevant to state that all the negative integers can be removed from this series and the sum of positive value will remain the same. Or are we missing something? Maybe Smith tries to say the following: the overall value equals the sum of positive value minus the sum of negative value; and, yes, $8 - 3 = 5$; but, in comparison to finite cases, in the given infinite case ${}_0\aleph = {}_0\aleph - {}_0\aleph$. Anyway, regardless of the (in)correctness of such an interpretation, here comes a promising proposal for deriving a cognate of (VI*).

17. (i) Any action performed by a human has n''' of U^- , where $n''' < {}_0\aleph$, or (ii) some action performed by a human has n''' of U^- , where $n''' = {}_0\aleph$, and any action performed by a human does not have n''' of U^- , where $n''' > {}_0\aleph$. From (14.ii).

18. For any action performed by a human, the overall amount of value of the whole universe-history without the performance and the consequences of that action is n^* such that $m - m' \geq n^* \geq n - n'$, where:

- (i) $n = {}_0\aleph$ and $n' < {}_0\aleph$, or
- (ii) $n = {}_0\aleph$ and $n' > {}_0\aleph$, or
- (iii) $n = {}_0\aleph$ and $n' = {}_0\aleph$, or
- (iv) $n > {}_0\aleph$ and $n' < {}_0\aleph$, or
- (v) $n > {}_0\aleph$ and $n' = {}_0\aleph$, or
- $n > {}_0\aleph$ and $n' > {}_0\aleph$, which is equivalent to:
- (vi) $n > n' > {}_0\aleph$, or
- (vii) $n' > n > {}_0\aleph$, or
- (viii) $n > {}_0\aleph$, $n' > {}_0\aleph$, and $n = n'$.

From (13).

19. There are sixteen jointly logically exhaustive and mutually exclusive options: (i) (17.i) and (18.i)–(viii), and (17.ii) and (18.i)–(viii). From (17) and (18).

Comment: The sixteen options are the following.

- (19.i) (17.i) and (18.i); $n = {}_0\aleph$, $n' < {}_0\aleph$ and $n''' < {}_0\aleph$.
- (19.ii) (17.i) and (18.ii); $n = {}_0\aleph$, $n' > {}_0\aleph$ and $n''' < {}_0\aleph$.
- (19.iii) (17.i) and (18.iii); $n = n' = {}_0\aleph > n'''$.
- (19.iv) (17.i) and (18.iv); $n > {}_0\aleph$, $n' < {}_0\aleph$ and $n''' < {}_0\aleph$.

- (19.v) (17.i) and (18.v); $n > {}_0\aleph$, $n' = {}_0\aleph$ and $n'' < {}_0\aleph$.
- (19.vi) (17.i) and (18.vi); $n > n' > {}_0\aleph > n''$.
- (19.vii) (17.i) and (18.vii); $n' > n > {}_0\aleph > n''$.
- (19.viii) (17.i) and (18.viii); $n = n' > {}_0\aleph > n''$.
- (19.ix) (17.ii) and (18.i) $n = n'' = {}_0\aleph > n'$.
- (19.x) (17.ii) and (18.ii); $n = {}_0\aleph$, $n' > {}_0\aleph$ and $n'' = {}_0\aleph$.
- (19.xi) (17.ii) and (18.iii); $n = n' = n'' = {}_0\aleph$.
- (19.xii) (17.ii) and (18.iv); $n > {}_0\aleph$, $n' < {}_0\aleph$ and $n'' = {}_0\aleph$.
- (19.xiii) (17.ii) and (18.v); $n > {}_0\aleph$, $n' = {}_0\aleph$ and $n'' = {}_0\aleph$.
- (19.xiv) (17.ii) and (18.vi); $n > n' > {}_0\aleph = n''$.
- (19.xv) (17.ii) and (18.vii); $n' > n > {}_0\aleph = n''$.
- (19.xvi) (17.ii) and (18.viii); $n = n' > {}_0\aleph = n''$.

And our reconstruction rolls on,

20. *Any entity does not have more than ${}_0\aleph$ units of value (positive or negative).* Premise.

Comment: (20) is a crucial point explored below.

21. Any option in (19), except (19.i), (19.iii), (19.ix), and (19.xi), does not obtain. From (20).

22. The result of any adding or subtracting with a transfinite (cardinal) number higher than any involved remaining number is equal to that number. Premise.

Comment: (22) is embraced by standard transfinite arithmetic.

For sure, in this arithmetic there's an ambiguity in subtracting some transfinite number from the same number. Dissimilarly to subtraction and addition on finite numbers, and dissimilarly to addition of the same transfinite numbers (cf. (15)), the result is not well-defined until we fix more specifically which members are removed (taken away). For instance, a set with ${}_0\aleph$ members may have ${}_0\aleph$ members removed and still other ${}_0\aleph$ members left in. As Peter Suber observes:

A denumerable set may have denumerably many members removed (in certain ways) without reducing the cardinality of the original set. [...] We need only regard the given denumerable set as two denumerable sets interlaced, then 'unlace' them, then discard one of them. If $\{A1, A2, A3...\}$ is the original denumerable set, then we can separate out the set of even-numbered members, $\{A2, A4, A6...\}$, from the set of odd-numbered members, $\{A1, A3, A5...\}$, each of which is denumerable [i.e., the number of its members is ${}_0\aleph$]. If we discard one of the resulting sets, the other one has the same cardinality as the original. Note that this theorem only applies to the removal of certain denumerable subsets from a given denumerable set. For if the denumerably many members we subtracted happened to comprise the entire membership of the original denumerable set,

then clearly the result would not be a denumerable set. So we cannot conclude in general that ${}_{0}\aleph = {}_{0}\aleph - {}_{0}\aleph$.¹⁷

In sum, the rationale for the ambiguity in subtracting a transfinite number from the same transfinite number is illustrated by the following removals of different members from the same set with ${}_{0}\aleph$ members.

$\{A1, A2, A3, \dots\} - \{A1, A2, A3, \dots\} = \{\}$; the result is a set with 0 members.

$\{A1, A2, A3, \dots\} - \{A2, A3, A4, \dots\} = \{A1\}$; the result is a set with 1 member.

$\{A1, A2, A3, \dots\} - \{A3, A4, A5, \dots\} = \{A1, A2\}$; the result is a set with 2 members.

$\{A1, A2, A3, \dots\} - \{A2, A4, A6, \dots\} = \{A1, A3, A5, \dots\}$; the result is a set with ${}_{0}\aleph$ members.

But after specifying the way of removal, the result is well-defined, not ambiguous.

23. In the option (19.i), any action performed by a human does not decrease by adding \cup the lower bound $(n - n')$ of the overall amount n^* of value in the whole universe-history, and the lower bound $(n - n')$ remains equal to ${}_{0}\aleph$. From (19) and (22).

Comment: $n - n'$, for $n = {}_{0}\aleph$ and $n' < {}_{0}\aleph$, $= n - (n' + n''')$, for $n = {}_{0}\aleph$, $n' < {}_{0}\aleph$ and $n''' < {}_{0}\aleph$, $= n = {}_{0}\aleph$.

24. The result of any such a subtracting from a transfinite number that (i) any involved remaining number is not higher than that number, and that (ii) the resulting set (after all the members being removed) still has that transfinite number of member, is the very same transfinite number. Premise.

25. In the options (19.iii), (19.ix), and (19.xi), there is such a subtracting from a transfinite number that (i) any involved remaining number is not higher than that number, and that (ii) the resulting set still has that transfinite number of member. *From (4) and from (5).*

Comment: Because of (4) or (5), there are always ${}_{0}\aleph$ empty m^3 s or there are ${}_{0}\aleph$ hours of the existence of empty m^3 s. No human action, and nothing at all, will change this; the change would be in conflict with (4) or (5). So, in the given circumstances,

(19.iii) $n - n'$, for $n = n' = {}_{0}\aleph$, $= n - (n' + n''')$, for $n = n' = {}_{0}\aleph > n'''$, $= n = {}_{0}\aleph$.

(19.ix) $n - n'$, for $n = {}_{0}\aleph > n'$, $= n - (n' + n''')$, for $n = n''' = {}_{0}\aleph > n'$, $= n = {}_{0}\aleph$.

(19.xi) $n - n'$, for $n = n' = {}_{0}\aleph$, $= n - (n' + n''')$, for $n = n' = n''' = {}_{0}\aleph$, $= n = {}_{0}\aleph$.

Maybe we could also say the following. The option (19.iii) is relevantly similar to deleting (removing) ${}_{0}\aleph$ cubes from a set of ${}_{0}\aleph$ cubes, but in such a way that other ${}_{0}\aleph$ cubes are not deleted, and then deleting less than ${}_{0}\aleph$ cubes. (19.ix) is similar to deleting less than ${}_{0}\aleph$ cubes from a set of ${}_{0}\aleph$ cubes, and then deleting ${}_{0}\aleph$ cubes, but in such a way that other ${}_{0}\aleph$ cubes are not deleted. (19.xi) is similar to deleting ${}_{0}\aleph$ cubes from a set of ${}_{0}\aleph$ cubes, but in such a way that other ${}_{0}\aleph$ cubes are not deleted, and then deleting ${}_{0}\aleph$ cubes once more, but again in such a way that other ${}_{0}\aleph$ cubes are not deleted. In all these three options, the cardinality of the original set equals the cardinality of the resulting set.

¹⁷ Peter Suber, „Infinite Reflections“, in: *St. John's Review*, XLIV, 2 (1998), pp. 1-59, Appendix, Theorem 8.

26. In the options (19.iii), (19.ix), and (19.xi), any action performed by a human does not decrease by adding U^- the lower bound $(n - n')$ of the overall amount n^* of value in the whole universe-history, and the lower bound $(n - n')$ remains equal to ${}_0\kappa$. From (25).

27. Any action performed by a human does not decrease by adding U^- the *lower bound* $(n - n')$ of the overall amount n^* of value in the whole universe-history, and the lower bound $(n - n')$ remains equal to ${}_0\kappa$. From (19), (21), (23) and (26).

28. Any action performed by a human does not decrease by adding U^- the *upper bound* $(m - m')$ of the overall amount n^* of value in the whole universe-history, and the upper bound $(m - m')$ remains equal to ${}_0\kappa$. *Mutatis mutandi* from (18)–(27).¹⁸

29. Any action (or act or state) performed by a human does *not decrease by adding U^- the overall amount n^* of value in the whole universe-history which remains equal to ${}_0\kappa$* . From (27) and (28).

Comment: (27)–(29) correspond to (VI*).

30. For any action performed by a human, the action is morally indifferent iff (i) it is not true that the human ought to perform the action and (ii) it is not true that the human ought not to perform the action. Premise (by nominal definition).

31. *If* (16) and (29), then any action performed by a human is morally indifferent. Premise.

Comment: (31) corresponds to (III). Instead of „iff“, we insert the weaker „if“.

32. Any action performed by a human is morally indifferent. From (16), (29) and (31).

33. Any action performed by a human is such that (i) it is not true that the human ought to perform the action and (ii) it is not true that the human ought not to perform the action! From (30) and (32).

Comment: (33) corresponds to the conclusion (VII).

34. *If* (16), then any life of a human does not have meaning. Premise.

35. Any life of a human does not have meaning! From (16) and (34).

Comment: (35) corresponds to the conclusion (VIII).

5. ${}_0\kappa$ Limit for Values and Its Conflict with Smith's Ontology of Points

The premise (20) states that no entity does have more than ${}_0\kappa$ units of value (whether negative or positive). First, we want to highlight the fact that (20) is of fundamental importance for the proposed reconstruction of Smith's argument. Let me explain.

Without (20) the option (19.viii), $n = n' > {}_0\kappa > n''$, is not ruled out.

Given (19.viii), there are several inner alternatives:

$n - n'$, for $n = n' > {}_0\kappa$, =

(a) $n'''' > {}_0\kappa$, or

(b) $-n''''$ for $n'''' > {}_0\kappa$, or

(c) $n'''' = {}_0\kappa$, or

¹⁸ Put m instead of n , and m' instead of n' .

(d) $-n''''$ for $n'''' = 0 \aleph$, or

(e) $n'''' < 0 \aleph$ or

(f) $-n''''$ for $n'''' < 0 \aleph$.¹⁹

But if (e), then $n - (n' + n'')$, for $n = n' = 0 \aleph > n''$, =

$n'''' - n''$, for $n'''' < 0 \aleph$ and $n'' < 0 \aleph$, = $n'''' < 0 \aleph$.

And if (f), then $n - (n' + n'')$, for $n = n' = 0 \aleph > n''$, =

$-n'''' - n''$, for $n'''' < 0 \aleph$ and $n'' < 0 \aleph$, = $-n''''$ for $n'''' < 0 \aleph$.

So, here we have two scenarios when human action could make some difference in the lower bound of the overall amount of value in the whole universe-history. Similarly for the upper bound. For example, in case (e) holds and $(n - n') = n'''' = (m - m') = 1\,000\,000$ and $n'' = 100\,000$, the steps (27)–(29) are not true. On the top of it, essentially identical objection comes from the option (19.xvi).

Secondly, we must ask: is (20) obviously true? Wait a minute, we have to ponder this. Well, hum, ... nope, it is not; not to us, not at the present time. Thereunto, the fishiness of (20) is underscored by its tension with respect to Smith's own conception of points. In his opinion, published in 2002, there are abstract points of abstract topological space, and there are *concrete* spatial and mass points in the (physical) universe:

*[...] there are abstract points, e.g., the points in the abstract topological space postulated by point-set topology. [...] But] all the [...] spatial points and mass points that belong to our universe [...] are] concrete [...].*²⁰

But then, by a case analogical to (1)–(10), the amount of positive value of the collection of all concrete points in all non-overlapping empty m^3 s of space is uncountable, that is, *greater than* $0 \aleph$, because the number of these points is uncountable.²¹

Smith himself claims in the 2003 paper that there are concrete (particular) space-points, all of them having some finite amount of value:

*Each location has a finite amount of value. A location can be a person, any other animal, a plant, a particular of matter or energy, a point of space or time, or some larger complex of particulars of these kinds, for example, a forest, an orchestra or an hour of time.*²²

Note also that paradoxically, then, the collection of all concrete points in just *one* empty m^3 of space would have the same and uncountable amount of positive value as the collection of all concrete points in *all* non-overlapping empty m^3 s of space because the number of points in one cubic meter is the same as the number of points in infinite, 3-dimensional space. In

¹⁹ The alternatives (e) and (f) are not generally logically exclusive since n'''' could equal 0.

²⁰ Quentin Smith, „Time Was Created by a Timeless Point“, in: Gregory E. Ganssle & David M. Woodruff (eds.), *God and Time*, New York 2002 (pp. 98-128), p. 105. This is in conflict with Smith's earlier *Ethical and Religious thought in Analytic Philosophy of Religion* (1997), chapter 25, where we are said that all physical objects are spatiotemporally extended and have mass (i.e., some weight in a gravitational field).

²¹ Cf. Suber, „Infinite Reflections“, Appendix, Theorems 12ff.

²² Smith, „Moral Realism and Infinite Spacetime Imply Moral Nihilism“, p. 44.

fact, for similar reasons, the collection of all concrete points in just *one finite line* segment of empty space would have the same uncountable amount of positive value as the collection of all concrete points in all non-overlapping empty m^3 s of space, and even the same amount of positive value as the collection of all concrete points in ${}_0\aleph$ -dimensional space.²³

On the same account Suber says:

*Measured in meters, we are tiny specks compared to the universe at large. But measured in dimensionless points, we are as large as the universe: a proper subset, but one with the same cardinality as the whole. Similarly, measured in meters, we may be off in a corner of the universe. But measured in points, the distance is equally great in all directions, whether universe is finite or infinite; that puts us in the center, wherever we are. Measured in days, our lives are insignificant hiccups in the expanse of past and future time. But measured in points of time, our lives are as long as universe is old. We are as small as we seem, but simultaneously, by a most reasonable measure, co-extensive with the totality of being in both space and time.*²⁴

Whatever the worth of measuring size or value is in terms of points, the premise (20) is arguably debatable, and also in conflict with Smith's ontology of point-like objects. To attain mere coherence, if not reasonableness, any advocate of our reconstruction should be reluctant to embrace this ontology. And since, we dare to avow, (20) seems essential for setting Smith's argument in motion, he is well-advised to justify (20), and also to retouch his view of points. As for the latter hint, he can draw off the underlying idea that points are the building blocks of the universe, or renounce their concreteness, or confine (1) or (2) to (some) extended concrete entities.²⁵ As for the former suggestion, a good argument for (20), if any, remains to be seen.

6. Conclusion

We have seen that the most influential philosophical contemporary defense of the popular thesis that human life has no objective meaning, authored by Thomas Nagel, fails because of the problematic premise that nothing has value independently upon our cognitive acts, and for its rather opaque elicitation of the absence of objective meaning from the magnitude of the universe. On the other side, Quentin Smith's attempt at making a more transparent case for the same thesis from this magnitude fails, too, if only for the contentious assumption that nothing has greater than ${}_0\aleph$ value, which assumption is at the same time unsupported and incoherent with Smith's own view of points. Although failures of philosophical arguing have been causes of much frustration or even despair, these two are rather happy.²⁶

²³ Again, cf. Suber, „Infinite Reflections“, Appendix, Theorems 12ff.

²⁴ Suber, *ibid.*, section „The Sublimity of the Infinite“.

²⁵ As he does in his earlier *Ethical and Religious Thought in Analytic Philosophy of Language* (1997), chapter 25, where we are said that all spatiotemporally extended entities with mass have some objective value.

²⁶ The research underlying this paper was supported by The Czech Science Foundation GAČR, project no. P401/11/0906. After this paper was completed and following some interaction with one of its authors, Michael J. Almeida published a different and independent critique of Smith's argument for moral nihilism: „Two Challenges to Moral Nihilism“, in: *The Monist*, 93, 1 (2010), pp. 96-105.