A Critique of Nancey Murphy's Nonreductive Physicalist Account of the Human Person and the Abandonment of the Human Soul

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Table of Contents

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by R. Jeffrey Grace

INTRODUCTION

The theologian Nancey Murphy offers an account of the human person that she identifies as a non-reductive physicalist account. According to this account, the human being is not made up of a material body and a non-material mind or soul, but rather the human being is a purely physical being. This account is called "physicalist" because the human being is seen as a purely physical being, and it is called "non-reductionist" because Murphy maintains that a nonreductive physicalist affirms that higher mental functions are irreducible and that "...neurobiological determinism does not threaten our self-image as free and rational creatures."[1]

Chapter one will consist of a description of this account of the human person as she articulates it. Chapter two will consist of a critique of her account. Chapter three will be a presentation of Thomas Aquinas' account of the human person. Chapter four will be a conclusion and short comparison of the two positions for their value and utility in offering an account of the human person.

[1]Nancey Murphy, "Why Christians Should Be Physicalists", from the book *Interdisciplinary Perspectives on Cosmology and Biological Evolution*, ATF Science and Theology Series 2, edited by Hilary D. Regan and Mark Wm. Worthing (Australia: Australian Theological Forum, Inc. 2002), pp.52-53.

CHAPTER I

Non-reductive Physicalist Account of the Human Person

1) Why non-reductive physicalism?

Nancey Murphy, in the book *Whatever Happened to the Soul?* gives her reasons for advancing her account of the human person (the quote below is lengthy in order to have the reasons identified by her own words):

> Some Christians believe that the body-soul dualism is an essential part of Christian teaching. However, many scientists and philosophers today suppose that the person is but one substance—a physical body. Evolutionary biology and genetics both suggest our continuity with other life forms. The most striking recent evidence for such a view comes from current advances in cognitive science and the various neurosciences… In particular, nearly all of the human capacities or faculties once attributed to the *soul* are now seen to be functions of the brain. Localization studies—that is, finding the regional structure or distributed system in the brain responsible for such things as language, emotion, and decision-making—provide especially strong motivation for saying that it is the brain that is responsible for these capacities, not some immaterial entity associated with the body.
>
> Is there essential conflict here? Our answer is no… The goal… is to demonstrate the possibility of an account of human nature that satisfies the demands of the many disciplines – to show that the portraits sketched from these various disciplinary perspectives may all in fact be of the same person.[2]

In a later (published in 2002) text entitled "How Physicalists Can Avoid Being Reductionists," Murphy offers the following as reasons for adopting her view:

> In my first paper, I argued that recent developments in neuroscience make body-soul (or mind-body) dualism problematic. In short, given what we know about brain function, what is left for a mind or soul to do? I also suggested that dualism is not part of original Christian teaching. Thus, it may be wise for Christians who have not already done so to

[2] Nancey Murphy, "Human Nature: Historical, Scientific, and Religious Issues" in *Whatever Happened to the Soul?,* ed. Warren S. Brown, Nancey Murphy, and H. Newton Maloney, (Minneapolis: Fortress Press, 1998) pp. 1-2.

> begin the task of integrating a physicalist account of the human person into their theological systems.[3]

So to summarize, she presents her view of the human person that is to be integrated into the work of theology for the following reasons:

> 1) Modern science has made the notion or concept of the soul obsolete or irrelevant, due to the reduction of the soul's faculties to functions of the brain.
>
> 2) In order to be consistent with the findings of the sciences, theologians should therefore accept these scientific conclusions regarding the human person.
>
> 3) However, the reduction of the soul to the brain does not have to mean that the moral and mental characteristics ascribed to human beings must be abandoned.

This last point (3) is where her physicalism takes on the aspect she describes as being non-reductionist, which means she affirms human free will as non-reducible, without which it makes no sense to talk about ethical responsibilities. Rationality itself is also threatened by the reductionist account because, as she points out, "…if mental events are simply the product of neurological causes, then what sense can we make of *reasons*?"[4] (her emphasis). In other words, if mental events are deterministic, which is what a reductionist account seems to leave us with, then how can we maintain that we make choices in our actions, choices based upon rational discourse that precedes choosing one action over another? If all mental processes are deterministic, there is no such thing as choice or reasons for choosing. Her approach is not to argue for the existence of free will and rationality, however. She assumes that they are real and then seeks to provide an account of how they "…emerge out of a neural substrate that may be assumed to be largely deterministic."[5]

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[3] Nancy Murphy, "How Physicalists Can Avoid Being Reductionists", in *Interdisciplinary Perspectives on Cosmology and Biological Evolution*, ATF Science and Theology Series 2, edited by Hilary D. Regan and Mark Wm. Worthing (Australia: Australian Theological Forum, Inc. 2002), pg. 69.
[4] Murphy, "Nonreductive Physicalism: Philosophical Issues", in *Whatever Happened to the Soul?,* pg. 131.
[5] Murphy, "Why Christians Should Be Physicalists", pg. 65

Even though she affirms that the higher mental properties of a human being are non-reductive, she does embrace ontological reductionism, which maintains that all that is, is physical and denies the existence of non-physical reality. Murphy's physicalism is non-reductive, however, in the sense that she does not affirm *causal reductionism*, which maintains "…that the behavior of the parts of a system (ultimately, the parts studied by subatomic physics) is determinative of the behavior of all higher-level entities."[6] In place of causal reductionism, also known as "bottom-up" causality, she affirms "top-down" causality, which is the position that there is an influence of the whole on the behavior of the parts of a system.

2) The argument for non-reductive physicalism

So the question she addresses is, "How can physicalists avoid being reductionists"[7] to the point of denying the existence and reality of free will? I have added "to the point of denying the existence and reality of free will" due to the fact that, as she freely concedes, she is an ontological reductionist, but qualifies her ontological reductionism by calling it a non-reductive physicalism and distinguishes this from causal reductionism and reductive materialism. As she puts it, "…if we are purely physical organisms, how can it not be the case that our thoughts and actions are merely the product of blind laws of neurobiology?"[8]

To answer this question, which is a restatement of the first question, she departs from the statement of the problem as formulated by Jaegwon Kim, one of the major voices on the topic of supervenience.[9] Kim's statement of the problem focuses on the role of mental causation and is summarized by Murphy,

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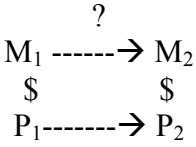
[6] Murphy, "Nonreductive Physicalism: Philosophical Issues", pg. 129.
[7] This is the question from of the title of her article "How Physicalists Can Avoid Being Reductionists."
[8] Murphy, "How Physicalists Can Avoid Being Reductionists", pg. 69.
[9] It should be noted here that, while the author agrees with Kim's statement of the problem, the author also disagrees with Kim's own answer to the problem, which is pure materialistic reductionistism.

> He argues that mental properties will turn out to be reducible to physical properties unless one countenances some sort of downward causation. But such downward efficacy of the mental would suggest an ontological status for the mental that verges on dualism.[10]

Murphy reframes Kim's statement of the problem in the following way:

> Kim speaks in terms of mental and physical *properties* of events; if the physical property is causally sufficient, what is left for the mental property to do? I want to argue that this way of describing the problem misses the crucial issue. The crucial issue is whether the sequence from M_1 to M_2 is a *reasoned* sequence or merely a *causal* sequence. So, for example, you read '5 times 7'. You think '35'. Did that happen because it is *true* that 5x7=35 or because a causal process in your brain made you think that?
>
> Given that we presuppose the truth of 5x7=35, that is, that it is *rational* to think '35' when one reads '5x7', we can again reframe the question: How can we reconcile an account in terms of reasons with a physicalist account of the mental without giving up on the causal closure of the physical?[11]

In this passage, what is being referenced with "M_1 and M_2" are mental states, such as '5x7' (M_1) and '35' (M_2). The physical states, which are a causal relation, are represented (see diagram below) by "P_1 and P_2", such as the neurological sequences of events in the brain that accompany the thoughts "5x7" and "35". Murphy illustrates the entire problem with the following diagram:



> Here M_1 and M_2 represent mental states or properties; P_1 and P_2 represent physical states or properties. The arrow from P_1 to P_2 represents a causal relation, and the dollar sign represents the supervenience relation. The diagram, then, represents the assumed causal closure at the physical level – that is, every physical event (in this case, the neurological event P_2) has a sufficient physical cause. It also represents the thesis that mental events supervene on brain events.[12]

[10] Ibid, pg. 70
[11] Ibid, pp. 71-72
[12] Ibid, pp. 70-71

Murphy places a question mark above the arrow from M_1 to M_2 to indicate that the relation between the two mental states needs to be defended as a relation of reason.

> The dilemma for nonreductive physicalists comes down to this: Mental properties can be taken to have causal efficacy insofar as they supervene on physical properties and those subvenient physical properties are causally efficacious. But if the physical properties are causally efficacious, what causal work is left for the mental properties? We seem to be left with a new version of epiphenomenalism.[13]

Murphy is understandably unhappy with epiphenomenalism because

> …it seems to rule out any *reasoned* connection between mental states and to replace them with causal connections. So here I intend to sketch out the basics for an argument for the compatibility of reasoned connections at the mental level with causal connections at the neurological level. To do so I shall turn, eventually, to the concept of downward causation"[14]

We turn now to a closer look at the concepts of downward causation, as well as the other concepts that are associated with her position. As Murphy defines these, ***ontological reductionism***, which she affirms as noted earlier, is the position that there is only one kind of reality, the physical. There is no such thing as immaterial reality. She rejects ***causal reductionism***, which is the position that "…the behavior of the parts of a system is determinative of the behavior of all higher-level entities. Thus, this is the thesis that all causation… is 'bottom-up.'"[15] In place of causal reductionism, she affirms a ***downward causation***, which maintains that the influence on the whole plays a role on the parts of a system.

3) Downward (Top-Down) Causation

Downward causation, or top-down causation, is a concept that serves the function of describing the phenomenon of a whole (i.e., a human body) exercising influence over the constituent parts of the whole (i.e., cells, molecules, etc.). Murphy gives her definition of the

[13] Ibid, pg. 71
[14] Ibid
[15] Murphy, "Nonreductive Physicalism: Philosophical Issues", from *Whatever Happened to the Soul?,* pg. 129.

term as "…a matter of the laws of the higher-level selective system determining in part the distribution of lower-level events and substances."[16] To see how this concept functions within her theory, we turn to an instance where it is invoked as a key concept when Murphy states the central problem that arises for the physicalist:

> "The central philosophical problem a physicalist has to answer is this: if mental events supervene upon (or are constituted by or realized by) brain events, and if we assume causal closure at the neurological level, how can it *not* be the case that all mental events are merely the product of blind neural causes? If this question cannot be answered then it appears that human freedom is in jeopardy and, even worse, that we are completely deceived about the nature and significance of all mental processes—they must be governed by physical causes rather than being governed by reason."[17]

If this problem cannot be solved, then two things are in jeopardy, 1) free will and 2) rational thought. How can we talk about free choice if mental processes, of which will is an example, are determined by blind neural causes? How do mental events manage to become effective in a physical world? She does not answer this question of mental causality. Instead, her approach is to assume that humans do have free will and that the higher mental events are non-reducible and then proceed to explain how it is possible "…for agency and free choice to emerge out of a deterministic neural substrate…"[18] For the issue of mental causation, instead of answering the question "how can mental properties have causal powers?", she *rephrases the problem in such a way that the search for an explanation is abandoned and instead a description is sought*. What she seeks to describe is "…how an account of a sequence of mental events ordered in terms of reasons can be reconciled with an account of those same events connected by neurobiological causes."[19]

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[16] Ibid, pg. 75
[17] Murphy, "Why Christians Should Be Physicalists", pg. 64
[18] Ibid, pp. 65-66.
[19] Murphy, "How Physicalists Can Avoid Being Reductionists", pg. 79.

As a way of showing how the concept of downward causation functions in her descriptive account, Murphy uses two illustrations, one borrowed from the work of Donald T. Campbell and one of her own that was inspired by Paul Churchland.[20] The first illustration is of the jaw structure of a termite. Bottom-up causation in this case would be the DNA causing protein structures to form the jaw, and the top-down would be the influence of the environment in selecting for the jaw structure by "differential survival" and reproduction.[21] The second illustration is of a child learning how to identify the letter "T" by responding to visual stimulation and the question "Is this a T?" The feedback from the "environment" (the teacher) affirming a correct response would perform a kind of causal effect.

> [This would]…result in strengthening the receptor cell's response to the correct pattern of input and would strengthen the connection between this and the verbal representation.
>
> Once the receptor cell is trained there is bottom-up causation whenever the child recognizes a T – the connection between the (receptors) in the visual field and the T-receptor cell is now 'hard-wired'. However, there is top-down causation in that interaction with the social environment needs to be invoked to explain why that particular connection has come to exist.[22]

She then moves from this explanation of how environmental factors work to select and reinforce the proper or desired response from an organism, to invoke analogy to support her thesis that "…an account of a sequence of mental events ordered in terms of reasons can be reconciled with an account of those same events connected by neurobiological causes."[23] Her analogy consists of an example of a child learning the multiplication tables.

> Let us speculate about rote learning of the multiplication tables. We can imagine that upon hearing the teacher say "5x7=35", neural assemblies are activated and, at first, activation spreads widely and randomly-activating a variety of other assemblies: for example, those subserving thoughts of '57', 'Times Square', '30', '35', '75'. But

[20] Ibid, pp. 154-159.
[21] Ibid, pg. 156.
[22] Ibid, pg. 159
[23] Murphy, "How Physicalists Can Avoid Being Reductionists" pg. 79

> feedback from the environment selectively reinforces one connection, while lack of reinforcement weakens all the others.[24]

So by means of this account, which is presented as being analogous to the process of natural selection, Murphy offers what she believes to be an account which "…is intended to show that downward causation in the form of environmental selection among neural connections provides a plausible explanation of how rational connections could become instantiated in or realized by causal pathways in the brain."[25] According to Murphy, this is "…how the brain becomes structured in such a way that its causal processes realize rational processes."[26] She offers the caveat that this account is not intended to reflect how mathematics is actually learned, but rather is meant to show

> …that downward causation in the form of environmental selection among neural connections provides a plausible explanation of how rational connections could become instantiated in or realized by causal pathways in the brain.[27]

We now turn to look at the concept of supervenience and the role it plays in Murphy's account.

4) Supervenience

The concept supervenience is used within the field of cognitive science and the philosophy of mind to describe the relationship of the mental to the physical. The concept did not originate in those fields, however, but rather first appeared in the work of R.M. Hare, in his book *The Language of Morals*. As Murphy quotes from that work in her article "Why Christians Should Be Physicalists":

> The concept of supervenience is better conveyed by an example than by definition. Its use began with R.M. Hare's discussion of the relation between moral and descriptive properties. He says:

[24] Ibid, pg. 78
[25] Ibid, pg. 79
[26] Ibid, pg. 77
[27] Ibid, pg. 79

> …let us take the characteristic of 'good' which has been called its supervenience. Suppose that we say 'St. Francis is a good man.' It is logically impossible to say this and to maintain at the same time that there might have been another man placed in precisely the same circumstances as St. Francis, and who behaved in them in exactly the same way, but who differed from St. Francis in this respect only, that he was not a good man. (R.M. Hare, *The Language of Morals* (New York: Oxford University Press, 1966), pg.145.

So Hare is pointing out that St. Francis' goodness is not an additional property along with his generosity, trust, chastity. Rather, he is good in virtue of having these character traits. These character traits (given proper circumstances) *constitute* his goodness.[28]

The move is then made, first by cognitive scientist Donald Davidson in 1970, from moral language, where supervenience was a technical term used to describe the relationship between evaluative judgments and descriptive judgments, to cognitive science to describe the relationship between mental and physical properties. Before she introduces Hare's concept of supervenience, she offers the following as the reason for this move:

> In order to explain how reductionism can be avoided it is advantageous to consider the relation between consciousness and the neural system as but one instance of hierarchical ordering of complex systems because *we see analogies and borrow concepts from less problematic levels* (emphasis added).[29]

This point is crucial, for in the analysis and evaluation of her position to follow in this paper one of the questions will be "Is this a good analogy?"

She offers her own definition of supervenience in contrast to a definition that fails to take account of the circumstances, or the environment. She illustrates how her definition is different by first citing a definition offered by Terence E. Horgan (Horgan, "Supervenience" in *The Cambridge Dictionary of Philosophy*, ed. Robert Audi (Cambridge: Cambridge University Press, 1995) 778-779)[30]

[28] Murphy, "Why Christians Should Be Physicalists", pg. 63
[29] Murphy, "Nonreductive Physicalism: Philosophical Issues", pg. 132.
[30] Ibid, pg. 133-134

> The concept of supervenience, as a relation between two properties, is essentially this: Properties of type A are supervenient on properties of type B if and only if the two objects cannot differ with respect to their A- properties without also differing with respect to their B-properties. Properties that allegedly are supervenient on others are often called consequential properties, especially in ethics; the idea is that if something instantiates a moral property, then it does so *in virtue of*, i.e., as a (non-causal) *consequence of*, instantiating some lower-level property on which the moral property supervenes.

Murphy notes that in this definition, there are really two different conceptions of supervenience. In the process of extracting these two conceptions, she substitutes 'S' for 'A' for purposes of clarity ('S' representing supervenient properties),

1) Properties of type *S* are supervenient on properties of type *B* if and only if two objects cannot differ with respect to their *S* properties without also differing with respect to their *B* properties.
2) Properties of type *S* are supervenient on properties of type *B* if and only if something instantiates *S* properties in virtue of (as a noncausal consequence of) its instantiating some *B* properties.[31]

Not only are these two definitions unequivalent, but one does not necessarily entail the other. She also believes that if we accept the first definition this "…ensures the reducibility of mental to the physical." However, if the second definition is accepted, then Murphy claims "…reductionism is not a necessary consequence."[32]

She offers her definition in order to articulate a stronger emphasis on the role of the circumstances or environment upon the emergence of supervenient properties on the physical:

> 3. Property *S* is supervenient on property *B* if and only if something instantiates *S* in virtue of (as a non-causal consequence of) its instantiating *B* under circumstance *c*.
> 4. Property *S* is supervenient on property *B* if and only if something's being *B* constitutes its being *S* under circumstance *c*. [33]

Here *S* refers to a supervenient property and *B* refers to a subvenient or base property. Both of these definitions are equivalent.[34] According to Murphy, her definitions are advantageous by

[31] Ibid, pg. 134
[32] Ibid
[33] Ibid

their ability to recognize that supervenient relations are not instances of identity. In other words, "…there are many life patterns different from St. Francis' that also constitute one a good person."[35] Her version of supervenience is therefore meant to provide an account that supports our experience of goodness as "multiply realizable."[36]

5) Emergence

While the concept of supervenience plays the role of describing the relationship between mental and physical properties, and the concept of downward causation plays the role of explaining how the mental is efficacious in spite of the fact that there is physical, causal closure in the account of human nature provided in the nonreductive physicalist view, the concept of emergence serves the purpose of explaining how mental properties come into existence from a purely material ground. Murphy defines the concept in the following way (note here that the processes defined are *described* rather than *explained*,):

> "'Emergent' or 'emergent order' refers to the appearance of properties and processes that are only describable by means of concepts pertaining to a higher level of analysis in science."[37]

Another definition of emergence is offered by Bernard-Olaf Küppers in his article "Understanding Complexity":

> In short, one can express the quintessence of the concepts of emergence and downward causation by two theses: 1) The whole is more than the sum of the parts; and 2) The whole determines the behavior of the parts.[38]

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[34] Ibid
[35] Ibid, pg. 135
[36] Ibid
[37] Nancey Murphy, "Supervenience" in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert John Russell, William R. Stoeger, S.J., and Francisco J. Ayala (Vatican City State: Vatican Observatory; Berkeley, Calif.: Center for Theology and the Natural Sciences, 1998) pg. 472.
[38] Bernard-Olaf Küppers, "Understanding Complexity" in *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur R. Peacocke (Vatican City State: Vatican Observatory; Berkeley, Calif: Center for Theology and the Natural Sciences, , 2nd Edition, 2000) pg. 94.

Murphy identifies the American Philosopher Roy Wood Sellars as the chief representative of "emergent realism" also known as "emergent naturalism" and "evolutionary naturalism."

> Sellars argued that organizations and wholes are genuinely significant; they are not mere aggregates of elementary particles. Reductive materialism, he believed, overemphasized the "stuff" in contrast to the organization. The levels Sellars countenanced were the inorganic, the organic, the mental or conscious, the social, the ethical and the religious or spiritual. [39]

So we have levels that consist of a hierarchy of emergent properties (the organic supervenes on the inorganic, the mental supervenes on the organic…). We also have the absence of direct causality between the levels because, according to this theory, there are no laws at all relating the levels. So the question arises, if there are not any laws relating these levels and there is not any direct causality between the levels (each level enjoys causal closure) then how is it that the mental level can be effective on the physical level? Rather than explain how this can happen, Murphy relies upon the persuasiveness of an account which seeks to reconcile '…an account of a sequence of mental events ordered in terms of reasons (with) an account of those same events connected by neurological causes."[40] She utilizes the concept of downward causation but it does not serve to explain any causal relations between mental and physical events. In fact, to call 'downward causality' 'causality' is a bit of a stretch, as Murphy herself points out when she quotes Donald Campbell "…if it is causation, he says, 'it is the back-handed variety of natural selection and cybernetics, causation by a selective system which edits the products of direct physical causation.'"[41] What she hands us is an account that is meant to show

[39] Murphy, "Nonreductive Physicalism: Philosophical Issues", pg. 130.
[40] Murphy, "How Physicalists Can Avoid Being Reductionists", pg. 79.
[41] Murphy, "How Physicalists Can Avoid Being Reductionists", pg. 75. She is quoting Donald T. Campbell, '"Downward Causation" in Hierarchically Organized Biological Systems', in F.J. Ayala and T. Dobzhansky, editors, *Studies in the Philosophy of Biology: Reduction and Related Problems* (Berkeley and Los Angeles: University of California Press, 1974), 179-186; 181.

how it might be possible to speak of the 'influence of the rational' on the deterministic causal events of the physical. The account of this influence, while not a causal explanation, is meant to provide a basis from which one can speak of 'mental events ordered in terms of reason' while also speaking of these 'same events connected by neurological causes.'

6) Review of Murphy's Position

Let us review her position before moving on to the evaluative phase. She maintains that theologians should join her in disavowing the existence of an immaterial reality such as the soul; otherwise they will be developing a theology that will be incompatible with the current scientific view of humanity. This scientific view of humanity has no room for a soul, since brain functions have taken over the functions once attributed to the soul. She does want to affirm the reality of higher mental functions as something irreducible, however, and to affirm this she seeks to provide a way to reconcile "…an account of a sequence of mental events ordered in terms of reasons [with] an account of those same events connected by neurological causes."[42]

A "constellation of positions" (ontological reductionism, downward causation, and the rejection of reductive materialism) collectively constitutes the position of the nonreductive physicalist. "Let us use the term 'nonreductive physicalism' to refer to this constellation of positions: the acceptance of ontological reductionism, but the rejection of causal reductionism and reductive materialism."[43]

> The version of physicalism I espouse denies the complete reducibility of the biological level to that of chemistry and physics. I argue that just as life appears as a result of complex organization, so too sentience and consciousness appear as nonreducible products of biological organization.[44]

[42] Ibid, pg. 79
[43] Ibid, pg. 130
[44] Murphy, "Why Christians Should Be Physicalists", pg. 62

Causal reductionism is rejected in favor of "top-down causation" also known as "downward causation." This is a concept that is used to "…take account of the causal influences of the whole on the part as well as of the part on the whole."[45] She relies upon the concepts of emergence, supervenience, and downward causation, to build an argument to support her affirmation that humans have free will and are free agents. The property of free will, as well as all properties identified as mental, ***emerge*** from physical complexity and are said to ***supervene*** on the physical. The concept of ***downward causation*** provides a way to leave room for "…the causal efficacy of the mental."[46] Again, it should be noted here that the notion described as "downward causation" as envisioned by Murphy, is actually a misnomer since it really does not consist in attributing causal power of the mental on the physical. To attribute causal power to the mental would be granting an ontological status to the mental, which she does not want to do. Causal power is limited in her system to the physical, since all that is, is physical. The downward causation envisioned by Murphy consists in the mental having an influence on the physical, as presented in an example of teachers affirming the correct answer from students as they learn that the correct response to "5x7=" is "35", the mental in this example being the rational process of "5x7=35" which influences the physical by selecting out the proper response (enforced by the teacher) and thereby creates the neural patterns in the brain that accompany such mental processes.

She proposes to "presuppose the truth of 5x7=35, that is, that it is rational to think '35' when one reads '5 times 7,'" and then reframe the question of mental causation to : "How can we reconcile an account in terms of reasons with a physicalist account of the mental without giving up the causal closure of the physical?" She thereby rephrases the question of mental causation

[45] Murphy, "Nonreductive Physicalism: Philosophical Issues", pg. 130.
[46] Murphy, "Why Christians Should Be Physicalists", pg. 63.

posed by Colin McGinn from "How…does *modus ponens* (if P therefore Q; P; Therefore Q) get its grip on the causal transitions between mental states" to: "How does *modus ponens* get its grip on the causal transitions between *brain states*?"[47] She would answer this question with "The brain becomes structured in such a way that its causal processes realize rational processes."[48] Thus it is her thesis that

> …downward causation, in the sense of environmental selection of neural connections and tuning of synaptic weights, provides a plausible account of how the brain becomes structured to perform rational operations. The larger system—which is the brain in the body interacting with its environment—selects which causal pathways will be activated.[49]

It should also be noted that this structuring of the brain is

> …by a process of random growth of dendrites and synaptic connections, followed by selective reinforcement of connections that turn out to be useful. Useful connections (such as the connection between the 'grandmother' assembly and the 'cookies' assembly) remain strong, while unused connections, (say between 'grandmother' and 'frogs') weaken and die off. In this way, neural connections that model relations of various sorts in the world come to be selected.[50]

So now we move on to evaluate her thesis to see if it indeed accomplishes what she hopes to accomplish: provide an account of the human person that will "…fill in a part of the explanation of why it is *not* always the case that the laws of neurobiology simply determine human thought and behavior." [51] Is her rephrasing of the problem of mental causation satisfactory? Does it provide a basis that allows one to answer her question: "…if mental events are simply the product of neurological causes, then what sense can we make of *reasons*?"[52] (Murphy's emphasis). In other words, if mental events are deterministic, which is what a reductionist account seems to leave us with, then how can we maintain that we make choices in

[47] Murphy, "How Physicalists Can Avoid Being Reductionists", pg. 72.
[48] Ibid., pg. 77
[49] Ibid.
[50] Ibid.
[51] Ibid., pg. 89
[52] Murphy, "Nonreductive Physicalism: Philosophical Issues", in *Whatever Happened to the Soul?,* pg. 131.

our actions, choices based upon rational discourse that precedes choosing one action over another?

CHAPTER II

Evaluation

Nancey Murphy's goal of providing an account of the human being that makes room for the reality of free will and moral responsibility is laudable. She does not want to see the human being reduced to nothing more than a collection of chemicals that operate in the world in a deterministic fashion. In this chapter arguments will be advanced to support the contention that her goal will not be achieved for the following reasons:

1) *Radical* d*uality of supervenience:* The concept of supervenience itself is fatally flawed for her purpose. She is invoking it to explain the relationship between mental and physical properties with the goal of overcoming dualistic accounts of the relationship. In what follows, it will be argued that this goal is negated from the outset by the fact that supervenience is a concept that presupposes dualism and that her redefinition does nothing to free her from this presupposition.

2) *Redefinition of supervenience*: Her redefinition of supervenience fails to escape the criticism advanced by Jaegwon Kim against non-reductive physicalists. Kim argues that unless non-reductive physicalists can establish some kind of causal relationship between the mental and the physical, their non-reductive physicalism will collapse into reductive physicalism.[53]

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[53] Richard J. Campbell and Mark H. Bickhard, "Physicalism, Emergence and Downward Causation", Australian National University EPrints2 Archive, 2001. Located on the World Wide Web at http://eprints.anu.edu.au/archive/00000029/ ; accessed on 29 April 2003.
"The basic argument, repeated with only minor variations in many of Kim's papers, goes like this. Suppose M is a mental property, with causal powers, and that some instance of it is causally efficacious in bringing about an instance of another mental property, M*. But, ex hypothesi, M* is physically realized in its physical base P*. Without the presence of P*, M* would not be present. So, M must have brought about P*. The only coherent story is that the instance of M caused M* to be instantiated by causing its realization base, P*, to be instantiated. So, a non-reductive physicalist is committed to 'downward causation'. But M has its own physical realization base, P. The presence of P is sufficient for the presence of M. It follows by causal transitivity that if M is causally sufficient for the presence of (an instance of) P*, and thereby M*, P is causally sufficient for both P* and M*. Accordingly, the

3) *Identification of the crucial issue*: Her rejection of Kim's identification of the real issue as being one of causality between the mental and the physical and her proposal to substitute it with the question "How can we reconcile an account in terms of reasons with a physicalist account of the mental without giving up on the causal closure of the physical?" is problematic for several reasons, which we will now discuss.

1) Identification of the crucial issue

Earlier in this paper we described how Murphy reframes Jaegwon Kim's statement of the problem of mental causation by arguing that Kim's statement of the problem "misses the crucial issue."[54] In making this move, She has abandoned the "crucial question," the question she herself has reframed, "Do you think '5 x 7 = 35' because it is *true*, it is *rational* to think it, or do you think it because a causal process in your brain made you think it?" by *presupposing the answer* is "We think it because it is rational." She then "reframes" the question again as being "How can we reconcile an account in terms of reasons with a physicalist account of the mental without giving up the causal closure of the physical?"[55]

There are at least two serious problems with the position as she has reframed it: 1) All she is doing, essentially, is presupposing that the sequence between mental states is a reasoned sequence and then arguing that when we are thinking something of a rational nature, there is an accompanying sequence of events on the neurobiological level. She has done nothing to provide an explanation of how the mental plays a role that is non-reducible to the physical; she merely asserts that the mental is non-reducible. Unless she provides such an explanation, her position of non-reductive physicalism is subject to the criticism articulated by Jaegwon Kim; 2) Murphy has

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hypothesized causal efficacy of M is superfluous; its physical realization base is what does all the causal work."

[54] Nancy Murphy, "How Physicalists Can Avoid Being Reductionists", in *Interdisciplinary Perspectives on Cosmology and Biological Evolution*, ATF Science and Theology Series 2, edited by Hilary D. Regan and Mark Wm. Worthing (Australia: Australian Theological Forum, Inc. 2002), pg. 71.

[55] Ibid.

moved from the question of the *truth* of the statement "5x7 = 35" to question of the *rationality* of the statement, and then to *presupposing* the rationality of the statement. What is being buried here is the fact that a statement can be rational without being true. It is perfectly rational to say, for instance, that "Nancey Murphy values science more than she values theology" but is it true? Those are two different questions. Again, it may be perfectly rational to say "Interstate 5 passes through Sacramento" but is it true? You would need to consult a map, or physically determine the route, to establish the truth of the statement, a process that is different than establishing its rationality.

In addition to these two problems, it is also clear that she also is offering no more than a descriptive account as opposed to an explanation. That her position is descriptive rather than explanative is apparent in her example of someone learning the times tables. In this example she describes an instance of the mental exerting "downward causation" on the physical through the process of learning the proper response to the equation "5x7=35". Recall now that she drops the question of the rationality of the equation. Whereas the question up to that point had been "Do we think 5x7=35 is true because it is rational to think it is true, or because some chemical processes in the brain lead us to think its true?", she decides to assume that it is rational, (after having moved from the question of its truth to the question of its rationality) and then moves to describe a rational process of the mind which takes place simultaneously with the neurological processes of the brain. Left unanswered is her original question: "Do we think '5x7=35' because it is rational to think this or because (emphasis added) of some neurological process in the brain?" Rather than answer that question, she attempts to describe a rational process that takes place simultaneously with the neurological process in such a way as to "make room" for something that seems to require no room, if you are truly committed to the causal closure of the

physical. In order to understand why she has made this decision, we briefly mention her epistemological stance, which she calls "epistemological holism". She leaves it unanswered because she thinks that, although conceptual schemes are rational, they don't *represent* reality… they aren't true or false, they are either adequate or inadequate for making sense of the real world. She calls this epistemological holism as opposed to foundationalism.[56] Rather than enter into that debate, which would make for an interesting discussion, we will restrict ourselves to critiquing her position within her own criteria: that of making sense of the real world.

So her point of departure in this example is the presupposition that it is *rational* to think that 5x7=35. The 'downward causation' then illustrated in this example consists in the enforcement by the teacher on the student when the proper response "35" is given. This example is meant to illustrate how it is possible to account for the influence of the rational, or mental, upon the physical when the neurological changes take place in the brain as a result of the enforcement of the teacher of the proper response from the student. The problem, or at least one problem, with this scenario lies in the fact that the mental really plays no causal role in this account. It could just as easily be a description of the reinforcement of *anything* via stimulus-response, for one thing. This particular example is a description of the neurological process of reinforcing the correct response to the question "What does 5x7 equal?" and would be identical to a description of the neurological process of reinforcing the association of the word "dog" with an animal of the canine family. There are more things going on 1) at the level of the acquisition of symbolic structures; and 2) at the level of mental processes, where symbolic activity takes place. For instance, once someone learns mathematics, one is able to work out solutions to problems that arise in contexts that are free of a teacher's positive reinforcement. In other words,

[56] See her article entitled "The Limits of Pragmatism and the Limits of Realism" in *Zygon*, Vol. 28, No. 3, Sept. 1993, pp. 351-359.

they learn to think rationally. How does the account offered by Murphy explain this process? It is beyond the scope of this paper to go into much detail on this point, so suffice it to say that Murphy's account of the "downward causation" of the mental is completely inadequate as an account of mental activity. This is undoubtedly due to her reluctance to grant the mental any ontological status, and this follows from her commitment to the causal closure of the physical. Not only does her account prove to be inadequate in explaining what happens in the act of learning 5x7=35, but it also fails to help us understand the real world if we recognize that within that reality humans make free, moral decisions as a result of being rational.

2) Redefinition of supervenience

Murphy argues that she has defined supervenience in a way that allows her to escape the criticism leveled against supervenience by Jaegwon Kim. However, a careful review of what she is offering as a refined definition of supervenience reveals that her revised definition is still subject to the criticism leveled by Kim. First we take a look again at the definition she offers that is meant to be a "…more adequate characterization of supervenience"[57] and which is purportedly more adequate due to her inclusion of circumstances,

> Property G in A supervenes on property F in B if and only if x's instantiating G is in virtue of x's instantiating F under circumstance c.[58]

For clarity, let's look at one of her examples that illustrate her definition of a supervenient relation, a U.S. penny. What we have is a disk made of copper. This copper disk has the supervenient property of being a U.S. coin if the right circumstances are present, such as having been formed and imprinted by the U.S. mint, as well as "…a vast number of other, more

[57] Nancey Murphy, "Supervenience and the Efficacy of the Mental" in *Neuroscience and the Person: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, Theo. C. Meyering, and Michael A. Arbib (Vatican City State: Vatican Observatory; Berkeley, Calif.: Center for Theology and the Natural Sciences, 1999) pg. 150
[58] Ibid.

complex, circumstances having to do with the federal government, its powers, and its economic practices."[59]

So what we have here is an instance in which a property, the property of being a U.S. penny, cannot be accounted for by looking at the property of being a copper disk. Since we have to look beyond the physical copper disk itself to account for its property of being a U.S. penny, that property is said to "supervene" on the property we can account for by looking at the disk itself, namely the property of being a copper disk. According to her refined definition of supervenience, then, we could have the same copper disk but have an absence of some or all of the circumstances proper to being a U.S. coin and thereby loose the supervenient property of being a U.S. coin (i.e., the U.S. government could declare that all pennies are worthless and no longer legal tender).

The inclusion of an additional factor, circumstances or environment, is meant to redefine supervenience in such a way as to render Kim's argument non-applicable. Again, to summarize, Kim argues that unless the non-reductive physicalist can embrace some sort of downward causality for the mental, then talk of mental properties is superfluous since the physical does all the causal work. They are stuck, however, because to acknowledge downward causation of the mental will shatter the causal closure of the physical, which they desire to maintain. They are therefore forced to choose between being either dualists or reductionists.

Does Murphy's redefinition escape this? It seems not, since the "downward causation" of the environment really has no causal power that can be identified as mental. In her illustrations, the influence of the environment (the teacher teaching a pupil that 5x7=35) is describable through the language of stimulus, response and reinforcement. There are no arguments or explanations of how this could be an example of the influence of the mental on the physical

[59] Ibid

because there are no arguments offered in her account to support the assertion that what is being reinforced really *is* a conclusion of reason as opposed to a conviction held as the result of the neural pathways being formed through a process of stimulus and response, or chemical states of the brain. What if the teacher simply reinforced the response "25" as the answer to the expression "5x7=“? The answer might be offered "Because we know that 5x7=35, so it would be irrational to teach 5x7=25." How do we know that 5x7=35? Is it because our brains formed the proper neural pathways by reinforcement from our teacher to lead us to believe this? Where did our teacher get such a notion that it is rational to say that 5x7=35? Trace this back and do we get an infinite regress of teachers learning that 5x7=35 through such an influence from their environment or is there a "first teacher"? Did the "first teacher" simple decide that 5x7=35? In other words, on what basis do we identify 5x7=35 as a true statement that is established through reason?

Another important thing to note here is her use of the concept *value.* To say that a copper disk being a U.S. coin is equivalent to St Francis being a good man is problematic. In the first instance, a copper disk receives a certain value in a system of exchange. In the second instance, a man is identified as good in a system of moral judgments. We *valuate* a copper disk as a penny in a different sense than we *valuate* a man as good.

To see the truth of this, consider what happens if you attempt to redefine the meaning of a good man as opposed to redefining a U.S. coin. There is some degree of arbitrariness in the definition of a U.S. coin that you don't have in the definition of a good man. If you declare the penny worthless you will not have many complaints as long as something is offered in its place that will act as a penny (and you exchange the worthless ones for the valuable ones!), but try and change what it means to be a good human being and you will have quite a storm on your hands.

In fact, the very definition of a good human being is fought over bitterly on a daily basis. This should be enough to illustrate that the concept of valuation, while univocal in one sense, also has some degree of equivocity.

Murphy's concept of supervenience fails to due justice to this difference. It also fails to account for how we are able to use the term *value* in both instances, and this leads us into the very heart of the problem we are facing in her account of the human being.

3) Radical duality of supervenience

To understand how the concept of supervenience is fatally flawed for Murphy's purposes, we now consider the presuppositions contained within the concept. As was discussed earlier in this paper the concept was taken over from the ethicist R.M. Hare, who developed the concept to explain the relationship between prescriptive meaning and descriptive meaning in moral language.[60] An example of a prescriptive meaning would be in a statement like "St. Francis is a good man" and a descriptive meaning would be statements that convey facts such as "St. Francis was a single, male, etc." The evaluative meaning is meant to be a commendation for action.[61]

Now the relationship between the evaluative and the descriptive is best defined as "supervenient". Wherever certain factual situations occur, there you have the concurrence of the evaluation "good." It is important to note here, however, that the facts can be anything. In fact, that is what Hare sees as evidence of our freedom. We can declare anything to be good so long as we accept that it is universally applicable. The "goodness" is not one factual characteristic among others (i.e., a man's height, a man's weight, a man's goodness) but rather is something that *supervenes* on all that can be said of the man physically. There is no logical connection between the factual characteristics and the evaluation of goodness.

[60] See A.W. Price, "Hare, Richard Mervyn" in the *Routledge Encyclopedia of Philosophy*, (London and New York: Routledge, 1998) pg. 230-231.
[61] See *The Language of Morals*, by Richard M. Hare, for the explication of the perspective summarized here.

Murphy has committed to the causal closure of the physical and will not countenance any causality of the mental on the physical because that would give the mental an ontological status that she is unwilling to grant. For her, all that is, is physical. The concept of supervenience, which she employs to describe the relationship between the mental and the physical, is predicated upon a dualistic ontology wherein value cannot be drawn from the factual.

In Hare's model, the facts are contingent to the value judgment. "Good" can be predicated along with any factual scenario, so long as the evaluation is accepted by the one making it as universal and applicable to all people. Hare's infamous example of the "fanatic" illustrates this.[62] In this example, a person believes that it a good thing for the human race to exterminate all Jews. Hare maintains that as long as the person is willing to accept execution himself if it turns out that he is himself a Jew, then this is a valid moral position. The important thing is that the logical conditions established by Hare are fulfilled and the characteristics of what is declared good does not set any limits on what can be declared good.

Compare this to the relationship between the mental and the physical in Murphy. In her understanding, the mental does not have any causal efficacy on the physical. Since the relationship is one of supervenience, the content of the mental can be anything just as "good" can be predicated of anything. As an example, suppose someone were to challenge Murphy on her characterization of St. Francis as a good man. She points to all that he did (gave all his money ad possessions to the poor, for one) and says this is commendable. Someone else could maintain that disposing of poor people through euthanasia is the better thing to do, so he was not so good. So long as this person also maintains that this is so for everyone, including himself if he became poor, there is no basis for Murphy to object.

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[62] See Richard M. Hare, *Freedom and Reason*, Oxford: Oxford University Press, 1963) pp. 157-185.

We now will consider an alternative account of the human person that will, hopefully, prove to be more coherent and defendable; the account offered by St. Thomas Aquinas.

Chapter III

Thomistic View of the Human

To understand what Aquinas says about the human soul, we must first provide a context. This is necessary because the soul is identified with the substantial form, and as such plays an essential role in the philosophy of nature of Aquinas. This role is one that is thoroughly explanative in nature, as will become apparent. Thomas Aquinas draws upon the philosophy of Aristotle, the theology of Augustine, Sacred Scripture, and the doctrines of the Church for the formulation of his view of the human soul. To speak coherently about this view we need to look at what he says from within the context of his metaphysic, which is taken up from, and then developed beyond, Aristotle. We therefore begin this section with a brief review of this metaphysic, and then we will look at one way in which Aquinas developed it at a crucial point.

Substance

Unlike Murphy, who reduces all that is to the physical or material, Aristotle begins with being. A substance is a mode, or act, or an instance, of being and substances exist as material as well as immaterial being. Material being is known to us through the senses, and immaterial being is known by inference from the material. All that can be known, therefore, is known either directly through the senses or what can be inferred from what we know through the senses. Beginning with what can be seen and known through our senses we are aware of some 'thing.' We are confronted at the most primary level of our senses with being… with the realization that something *is*.

This basic grasp of being in our sense perception, however, is not quite yet that which is the subject of metaphysics. "Being" itself, studied "as being" is what the study of metaphysics is

about. One arrives at being as being through the process of abstracting from a particular material thing all that makes that thing distinctive from something else, all of its accidental properties, such as color, shape, size, etc… After one has performed this abstraction from any particular material thing, one can then begin to ask the questions that apply to all instances of material things. One of the first things we notice about every material thing is that it changes. People are born, grow old, and die. Trees and flowers grow and pass away. Water evaporates. Ice melts. The sun changes its position. Everything seems to change position, or move, at some point either under its own power or through the influence of something else. Things get hotter or colder. The list could go on, but the fundamental reality being described is change. Some material things, such as stones, might appear to be changeless but upon closer inspection they are just changing at a much slower rate (i.e., a rock that undergoes erosion over time).

So the question that arises when confronted with this experience of material things is: If everything changes, then what is it that changes? If we are not saying something disappears and another thing appears in its place, then we are saying that something remains of the old in what comes to be as the new. In other words, in any change, there is a principle of continuity and a principle of newness. Something of the old continues to exist while something new comes to be. Otherwise, to speak of change makes no sense. We would be better off speaking of things popping in and out of existence, for to speak of change means that something undergoes change, yet remains.

Aristotle, as well as Aquinas, identifies three principles of change: 1) Prime matter, the principle of continuity, or pure potentiality, 2) substantial form, or the principle of newness, of actuality, and 3) privation, or the principle of absence, or non-being.[63]

[63] See Aquinas' *Commentary on Aristotle's Physics*, Book One, Lecture 12, and Chapter 7 where Aquinas uses the example of the change from non-musical to musical man.

Take as an example a person who learns to play a musical instrument. This is an example of accidental change and it is *analogous* to what happens in substantial change. We first look at an accidental change to get an idea of what happens on the level of substantial change, because accidental change is available to our senses. The person is the subject, the matter of the change from non-musical to musical. The form is musical, and the privation is non-musical. The person has the *potential*, the possibility of becoming musical, but at first, in order for the change to occur from non-musical to musical, the privation must be present: the person must be non-musical. When the person learns music, the form of musical has become actualized in the person.

The first thing to point out is that since this is not an example of substantial change, but rather an example of accidental change, the substance, the person, has remained throughout the change. We use an example of accidental change to explain how substantial change works, because the elements of substantial change, prime matter and substantial form, are not available to our senses. We therefore use examples from what is known through our senses, accidental change, to explain what is not available to us through the senses, substantial change. We know it occurs because we see things happen like the death of an animal or a human, but the principles of such a change have to be inferred from what we know through the senses.

In a substantial change, such as the death of a person, what persists after the substance "person" has passed? If the substance has changed from "person" to "corpse", then there has to be something that has remained, otherwise no change has actually taken place. The thing that persists through the change is "prime matter", or pure potentiality. Prime matter, an incorporeal substance, receives actuality, or becomes corporeal, through substantial form. The person which existed at the beginning of the change was a composite substance, made up of prime matter and

substantial form, just as all composite substances are made up of prime matter and substantial form. When a change happens on the substantial level, the composite substance has changed from one substance to another (in the case from a person to a corpse) by the actualization of its prime matter of a new substantial form. This, in a nutshell, is how Aristotle as well as Aquinas, make sense of change.

1) Soul as Substantial Form

Having briefly explained how substantial form fits within the metaphysics of Aristotle, as well as Aquinas, we now look closer at the substantial form of the substance known as a person. Like all composite substances the human person is composed of prime matter and substantial form. It is important to emphasize that, in the anthropology of Aristotle as well as Aquinas the body is the *result* of the union between the soul and prime matter. In other words the union does not occur after the body is already in existence. Rather the union produces the body because the substantial form is the first act of the body or as Aristotle says, "The soul, therefore, is the primary act of a physical body capable of life."[64] The matter that unites with substantial form is always, without exception, prime matter, which is pure potentiality and is non-corporeal. Secondary matter, which is made up of prime matter and substantial form, is corporeal and is also what we usually think of when we use the term "matter."

This must be emphasized because Aquinas, as well as theologians who precede him and those who follow him, will use the phrase "body and soul" when referring to a human being. This language is best understood as inexact shorthand for the human being, which is meant to signify that the human being is more than meets the eye.[65]

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[64] Aristotle, *De Anima*, as quoted by Aquinas in *Commentary on De Anima*, translated by Kenelm Foster, O.P. and Silvester Humphries, O.P. (Notre Dame, Indiana: Dumb Ox Books, 1994) page 71.

[65] If one reads Aquinas' *Commentary on De Anima,* Book II, Lecture 1 and 2 carefully, one cannot deny Aquinas taught that the body is made up of prime matter and substantial form (the soul). Therefore, one must conclude that

2) Materiality and Immateriality of the Human

What is commonly understood as matter is, within Aquinas' system, secondary matter. It is what we see with our eyes and touch with our hands. It is everything that we receive through our senses. Secondary matter is composed of prime matter and substantial form. This primary matter is not seen or touched… not perceived through the senses. It is best understood as pure potentiality. Substantial form combines with primary matter and creates a material substance. Secondary matter comes to us as either a compound substance, or a collection of compound substances. Some examples of compound substances would be a tree, a human, a dog… all of which are living substances, or biological beings. Examples of non-organic or non-living substances would be elements (H_20, or water), wood, etc. Notice that wood, a non-living substance, comes from trees, a living substance.

How do we identify a substance? Using wood as an example, we notice that there is a collection of characteristics or properties that it has, such as its texture, its strength under pressure, its reaction to fire, etc. In the words of Aquinas, "*agere sequitur esse,*" action follows being. We experience the "action" of a thing, the properties and characteristics, how it interacts with other things, and we call it "wood" to signify this substance and its nature. We could be in a dark room and hear something hit the floor and from the sound identify it as something wooden. The "act" here, the characteristic, is the sound produced when it is struck. We could be mistaken or deceived, but we would eventually be corrected through more sensory input.

All plant life has a vegetative soul as its substantial form, all animal life has a sensate soul, and all humans have a rational, or intellectual, soul. When a plant, or animal or human

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the phrase "body and soul" is an inexact, shorthand expression for saying that the human is more than what meets the eye. See *Thomas Aquinas and Radical Aristotelianism,* by Fernand Van Steenberghen, page 73-74 for a brief comment on this.

dies, its soul, its substantial form, no longer informs the primary matter and is replaced by another substantial form. A human being dies and what remains is a corpse rather than a body, in the strict sense. The process of decomposition has begun and the processes associated with a living body have passed away. The corpse does not act as a body does. It no longer moves, breathes, talks, etc. There is no longer a person, so we understand that the substantial form, that which made it a person, has gone and been replaced by a multiplicity of substances which, once integrated as a body, are now in the process of disintegration.

So to recapitulate, through our senses we come to know that everything we encounter seems to have something in common: things change. To make sense of this change, we examine that which is readily available to our senses and discover that things change in two different ways: in the first sense of change, something can remain what it is essentially, but it can undergo changes that we can describe as "accidental": things can change in color or shape or height. A piece of wood can be changed into a chair, a table, etc. but the essential character, the nature, of the wood remains the same. However, take this piece of wood and burn it and it no longer is wood. To account for the fact that something has undergone such a change, we then extrapolate from what we know through our senses to what is unavailable to our senses. We infer, from the experience of seeing a change take place that is more radical than accidental change, that there must be something more to the composition of a thing than what is available to the senses. There must be something, although we cannot see it, which persists through such a change, and there must be something that passes away. The something that persists is identified as "prime matter" and the something that has left is "substantial form." What is left is a new thing, a new substance, so there must be a new substantial form that has taken the place of the previous one.

The two principles that are not available to our sense perception, then, are identified as

prime matter and substantial form. The third principle, along with prime matter and substantial form is privation, or what a thing is *not*. Change could not occur if the thing changing were already the thing being changed into.

3) Immateriality of the Human Soul

Every that exists as a compound substance is composed of prime matter and substantial form. The human being shares in this because a human being is a composite substance. The composite substance, a material thing (matter in the secondary sense) is what we refer to as "body." We have to remember that in Aquinas' metaphysic, what is material (in the secondary sense, a composite substance) is composed of the principles of prime matter, substantial form, and privation.

In addition to this, we also have the case that the human soul is unique among souls by having the characteristic of being "spiritual" or intellectual. Before explaining this, we first note that there is a kind of comprehensiveness to the human soul among souls. To explain what this means we look at the types of souls discernible in living things.

Every soul that is, is vegetative. A vegetative soul is characterized by the powers of growth and nutrition. All things that live have this soul, because all things that live grow and process nutrients to sustain its life. Every sensate soul that there is, is vegetative as well as sensate. A sensate soul is characterized by the powers of sense (sight, hearing, touch, smell, taste) and mobility. Not all sensate beings, animals, have all five of these senses. The most common sense apparently is touch. The rational soul is characterized by the powers of intellect and will. Only human beings have this power as far as we know. It is only the human soul that is vegetative, sensate and rational or intellectual.

All of the powers of the soul, except for the intellectual powers, have a corresponding

bodily organ or function. The eyes embody the power of sight, and the skin embodies the power of touch. The metabolic system embodies the power of nutrition. The intellect, however, has no corresponding bodily organ or system so it is referred to as a spiritual, or non-corporeal, power. The human soul is therefore referred to at times as a spiritual soul, because it is only the human soul that is spiritual. The human soul is the only kind of soul which is also a substance in its own right, albeit an incomplete substance, a spiritual substance.

Before moving on to focus in on the intellectual power of the soul, we first should emphasize that the human is composed of one type of soul. The incorporation of the vegetative as well as sensate soul into the human being does not mean that there are three kinds of souls in the human: vegetative, sensate and rational. Rather, there is one soul in the human, a rational soul. This rational soul, however, is a comprehensive soul in the sense that the other souls, vegetative and sensate, are unified into the one rational soul. [66]

This follows from the principle that a composite substance has one substantial form. This can be seen when upon death a human being, the substance, has passed away and what remains is a collection of substances. What is not left is an animal or a plant, because the senses have ceased to function and the nutritive processes have stopped. The sensate as well as the vegetative powers of the soul have passed away along with the rational or intellective powers. The sensate and vegetative souls pass back into potentiality but a human soul survives, albeit as an incomplete substance. It survives the death of the body because it has a power that is incorruptible, namely intelligence.

4) Sensate and Intellectual Powers of the Soul

One of the critical points that Aquinas fought for was the difference between the sensate

[66] See Aquinas, *Commentary on Aristotle's De Anima*, I.14., where he discusses the unity of the soul.

and the intellective. To illustrate this difference we take an example of someone perceiving a red apple. The eye sees the color red, the nose smells the odor of the apple, and the hand touches it and feels its shape and texture. The tongue tastes the sweetness of the apple. All of these sensations happen through physical processes, which the biological sciences can explain to us in material terms. Aquinas describes this process in philosophical language as an acquisition of accidental forms. The senses are in potential to the accidental forms and each particular sense is in potential to a particular kind of sensation (eyes are in potential to light and color; ears are in potential to sound, etc.) This is to be distinguished from the acquisition of the substantial form, which is the form of intelligibility, or the form that gives a composite substance its essential nature. The intelligence is in potential to all things, and this is so because it is immaterial and receives things immaterially.

The substantial form of objects of perception can inform the intellect because the intellect receives the form immaterially. The essence of an object, which the object has through its substantial form, is abstracted by the intellect from the sensible object. Abstraction is the process that the intellect goes through when all the qualities have been removed from the object that make it *this* particular object, (i.e., color, etc.) and all that remains is the essence or nature, which is shared by every instance of that type of object. These particular qualities are all material, in the sense that they are available to our sense.

If the intellect received forms materially it would actually become that object. Since we don't experience things actually materializing in our bodies, we know that this does not happen. What does happen is that a power of the soul, identified as the agent intellect, abstracts the substantial form from the composite substance. There are also two senses of potential. In one sense, all human beings share potential intellect at whatever stage of their development. In the

other sense, the intellect has been developed through the process of education and the one possessing potential intellect in this sense may be asleep and therefore not exercising their intellect, but it is still present, potentially. The first sense refers to the reality that, as a human being, they have the potential for intellectual activity whereas animal life does not posses this potential.

The intellect and the objects grasped have a common ground, potentiality, which makes understanding possible. The intellect is in potency to all things by being in potential to all the forms it receives from objects, and the objects possess the intelligible forms in potency. Intelligibility in the object becomes actualized when the intellect receives the object and understands it.[67] The object is understood because the object has become actualized in the mind as an immaterial reality, so in a sense the soul becomes all things. The intellect actualizes all things in itself immaterially.

So in Aquinas, the soul is an instance of a fundamental principle of reality: the substantial form. The substantial form itself is unavailable to our senses yet is extractable by the intellect from sense data. The concept of the substantial form plays a critical role within the metaphysic of Aquinas and serves to explain how such a thing as change can occur.

While it is true that the substantial form in the human being, the soul, is something which survives the death of a human, unlike the substantial forms found in other living things as well as non-living, the argument made for its immortality is not simply asserted. It is offered in a way that is consistent with the metaphysical system as a whole and serves to explain what we experience as human reality. The human soul does survive the substantial change known as death, but the soul survives in an incomplete state and in no sense can be called a human being.[68]

[67] See *Commentary on De Anima* by Aquinas, where he argues this in Book Three, Lecture IX. Para 720.
[68] See Aquinas, *Commentary on De Anima,* page 73.

Chapter IV

Conclusion

It is the opinion of the author that Nancey Murphy, and all other non-reductive physicalists, might profit substantially if they revisit their philosophical presuppositions which lead them to affirm ontological reductionism and the causal closure of the physical. This is especially so since their conceptualization of the physical is inherited from a system they hope to negate, namely a Cartesian dualistic ontology. This in turn might lead them to revisit a concept rejected by Descartes which serves to explain how humans are rational beings who posses free will, namely the concept of the substantial form, which gives human beings such a nature.

The lineage from Descartes is apparent when one considers the following: The physical, as defined by Murphy, consists of pure extension. There is no other reality apart from this. Descartes divided what is real into *res extensa* (bodies) and *res cogitans*, (thoughts, soul, God).[69] When one reads her definition of the physical one finds that this is Descartes definition of the *res extensa*. True, she talks of mental properties of the physical, but the mental properties in no way are considered a part of the makeup of the physical, let alone causally efficacious on the physical. There is a complete separation of the two. Murphy has simply denied a separate ontological status to the *res cogitans*, but she still wants to affirm its reality, in some sense. So what she has in hand as the physical is the result of a separation done by Descartes and this physicality has already had the mental or spiritual removed from it and set up in a separate existence. It shouldn't really be any surprise that she is having such difficulty overcoming her own brand of dualism: supervenience.

[69] See Renee Descartes, *Meditation II.*

The causal closure Murphy has committed to maintain is a major stumbling block to any consideration of something like substantial form. Formal causality is distinguished from efficient causality, and the causality she has inherited has reduced all causality to efficient causality. It is beyond the scope of this paper to trace the history of the loss of formal causality, as well as the loss of all other causality as delineated by Aristotle, and the reduction of causality to efficient causality. Suffice it to say that it is the opinion of the present writer that Murphy's thesis has provided yet another demonstration of the need to revisit this history.

The development within the writings of scientists as well as philosophers of science, of the concept of emergent properties is promising on the one hand and yet frustrating on the other. Promising to those who have had misgivings about an account of reality that limits reality to all that can be perceived through the senses, namely a materialistic reductionism that has no room for immaterial principles and realities. Promising because there is now an indication of the recognition in such language that there is more going on in reality than meets the eye if things can behave differently than an analysis of the constituent elements would lead one to expect. An analysis of the constituent elements of water, for example, would not lead one to expect its wetness. Frustrating because such language as emergence seems to be only descriptive rather than explanatory.[70] There is also lacking an adequate account of the unity of the thing displaying an emergent property,

> The theory also seems inadequate for grounding the unity of the human being. All the multiplicity of the materialist option is maintained and, in addition, there is the further complication of emergent properties or activities distinct from that multiplicity. The theory speaks of the action of the whole and assumes this in its account of top-down causation, but it does not explain what justifies our considering that whole as one thing instead of a multiplicity or conglomeration of many things with a kind of incidental unity.[71]

[70] This point is found in the lecture notes by Michael Dodds, entitled "Mind over Matter?" presented in class at the Dominican School of Philosophy and Theology on October 11, 1995.
[71] Ibid, page 7.

So to account for the rational nature as well as the free will of the human being, it might be a good idea to revisit some of the philosophical positions that have lead us to the point where we cannot seem to explain how this can be so.

The implications for how this issue is resolved are tremendous, both for theological reasons as well as ethical. There couldn't be a more fundamental and influential issue facing society than the very conceptualization of what it means to be human. Laws are written based on the assumption than people can choose between possible actions. If it is no longer possible to argue coherently that human beings can make choices, on what basis would we hold people accountable for what they do? Public discourse proceeds on the assumption that people think rationally, at least to some extent!

The issue of respect for life is predicated on the belief that human life is somehow unique. While it is true that laws against murder are probably supportable through a golden rule of some kind (murder should be illegal because if it was not, the chances of you getting killed are higher!) it shouldn't be to hard to see that life would get even more brutal if there was not some basis in reason for respecting the right to life. If a human fetus can be characterized as nothing more than a blob of tissue that has no right to life until it is fully out of the womb, then how much longer will it be before the right to life is limited to another idea of human life that is driven by political considerations rather than rational discourse? If we follow the model of supervenience provided by Hare, we end up facing the possibility of practically anything being declared legal or moral, so long as enough people agree that it applies to them as well, regardless of the consequences.

Do we have an account of human rationality in the account of the human being provided by the non-reductive physicalist? It would seem not, if there is a problem even establishing the

existence of rational discourse. If the account of the influence of the rational is limited to reinforcement from the environment of the correct answer to a question like "what is 5x7?" then what determines one answer (35) being preferred over another answer (25)? It is perfectly fine to trace the activity of the neural processes of the brain as such things are learned, but it is quite another to say that this is the source of our believing statements such as 5x7=35. While it is true that Murphy does not claim that this example is an adequate portrayal of the process of learning mathematics, there still remains the need to explain how one answer is preferred as the correct answer. A description of the neural activity is not an explanation.

In Aquinas' view of the soul we have an explanation rather than a description. In his system, the soul is the substantial form of a human being and as such is the principle that gives the human being its nature. All things are made up of a composition of substantial form and pure potentiality, or are composed of these compositions. In Aquinas' system, the substantial form identifies a principle within all things and is not simply invoked into existence in order to support a theological belief in a soul.

The language of emergence describes the reality that things seem to be made up of more than their constituent parts. The language of substance explains what that something more is and how it comes about. Top-down causality describes the reality that another kind of causality, something in addition to bottom-up, or efficient causality, is at work. Formal causality explains what that is and how it works. Emergence describes the reality that things come into being that cannot be traced entirely into their constituent elements. Potentiality explains how this can happen and why.

This paper was undertaken with the conviction that the principle question facing Murphy, specifically how does the mental aspect of the human being influence the physical aspect, can be

fruitfully explored using Aquinas' system. With this in mind, we now conclude with a suggested reading of Aquinas on this issue.

One of the first things that must be noted is the fact that the mind/body problem, as it is now formulated in current discussions, is a problem that did not exist for Aquinas. While it is true that Aquinas did struggle with the question of how something immaterial can have an influence on something material, he did not start from the position that there are two distinct realities, mind and body, and then proceed to explain how these two realities influence each other. Rather, the person is a substance, and like all substances, is composed of primary matter and substantial form. In living things, the substantial form is the soul and in the human the soul is distinctive in that it is a rational, or spiritual, soul. The "mind" in the modern sense simply did not exist as a separate reality.

To review the problem facing Murphy: She seeks to maintain that 1) there is causal closure on the level of the physical and 2) humans are rational and therefore possess freedom of the will. So how can Murphy talk of free will and rationality if there is causal closure on the physical level?

One possible Thomistic reading answers the first part of Murphy's problem by explaining how there is no problem of causal closure on the level of the physical, because an account of the physical, or material world, leads one to the recognition that causality cannot be limited to material, or as a Thomistic would label them, efficient, causes alone. The causality of the "causal closure" that Murphy is working with is *Cartesian*. If the framework of causality is broadened to include formal causality, then the dilemma faced by Murphy would disappear for the most part. The explanatory power alone of the Thomistic anthropology would be sufficient reason for adopting it over the Cartesian anthropology.

We should point out here that Murphy and Aquinas are in agreement about the necessity of reason as a precondition for freedom of the will. Free will presupposes rationality, because we must be able to deliberate, or reason, between choices and decide which choice to make if some of our actions truly are decisions freely made. If all of our actions are the result of a chain of chemical reactions, if reason is not present, then we really have no free will. Reason is that cause for a choice which cannot be accounted for through the chain of physiological processes.[72]

In Aquinas, this is so because reason, also known as the mind and the intellect, is a power of the soul and the soul is immaterial. As such, there is no corresponding organ in the body for the soul. Again, it is the soul that informs the body and makes it what it is... it is not something that pre-exists the body that somehow enters the already-existing body. Rather, it brings the body into being.

The immateriality of the soul is established in Aquinas by the argument that, since the soul knows all things, it cannot itself be a corporeal body. "Knowing all things" in this sense is not an assertion of omniscience, but is rather a claim that the soul becomes what it knows, in some sense. This happens because when something is known by the soul, the soul receives its substantial form, but receives it immaterially. In order for this to happen, the soul must not be material, otherwise, it would actually become the substances it knows. Instead, what happens is the soul, in knowing something, receives the substantial forms of things, their essence, in an immaterial fashion.

What remains to be explained is how something immaterial has an affect on the material, as well as how something material actually gets into something immaterial. To explain this, we will summarize the processes of sensation and cognition held by Aquinas.

In our analysis of Aquinas' account of the act of intellection, we begin with a sensible,

[72] See Aquinas, *Summa Theologica*, Part I, Question 83.

material thing. We receive material things through our senses, but the intelligibility of things is not known through our senses because the intelligibility of things is immaterial. So how does the intelligibility become known to us? Aquinas provides the Aristotelian response that it is through the process of abstraction, performed by the agent intellect, that we receive the intelligible species, which is the medium of knowledge of the intelligibility of things. It should be emphasized here that what is known is not the species, but the thing as intelligible. We know the object *through* the intelligible species.

This abstraction of intelligibility is done, not directly from the objects of our senses themselves, but rather upon the *phantasm*, which is an imaging of our sense knowledge. We identify the phantasm as our *imagination.* Whenever our senses perceive anything, we have a concurrent phantasm of that thing. Aquinas argues that misperceptions occur at the level of the phantasm, and that our senses, our senses that are intact and not damaged, are never in error.

Intelligibility is present potentially in things, not actually present, and the agent intellect is the faculty of the soul responsible for the apprehension of intelligibility. The agent, or active, intellect, along with the passive intellect, make up the intellect in human beings. The active, or agent, intellect prepares a spiritual likeness for the passive intellect to receive, as H.D. Gardeil sums it up,

> It is the function of the agent intellect to make actually intelligible what is potentially intelligible in the image or phantasm, and in so doing, to prepare a spiritual likeness of the object for the passive intellect.[73]

This spiritual likeness is also known as the intelligible object or the intelligible species. It is the intelligible species that is received by the passive intellect, or properly speaking, it is what informs the passive intellect and brings the intelligible object from potentiality into actuality.

[73] H.D. Gardeil, O.P., *Introduction to the Philosophy of St. Thomas Aquinas: III Psychology,* (St Louis: Herder and Herder, 1956) p 130.

In the language of causality, the whole process is described best, according to Gardeil, by John of St. Thomas, who identified the phantasm as the instrumental cause and the agent intellect as the principle cause, in the production of the intelligible species.[74] (An instrumental cause is like a guitar in the effect of music, and the principal cause would be the person playing the guitar). As Gardeil points out, this description of the process is suggested by Aquinas in a passage in *De Veritate,* where Aquinas identifies the phantasm as the instrumental agent (or cause) and the agent intellect as the principal, or first agent (or cause) in the reception of the intelligible species in the passive intellect.[75]

In conclusion, what we find in Aquinas is a complex and detailed explanation of the process of cognition. The explanation is situated within a metaphysical framework that serves to make sense of our world as we experience it. It provides an explanation that extends beyond the immediate problem of cognition and as such cannot be suspected of being ad hoc. While it does maintain a mild form of dualism, it is a dualism that is not discontinuous in a radical sense. There is a degree of continuity between the material and immaterial, between the mental and the physical. It also promises to provide some clues on how we are to explain a reality that seems to have properties that are unexplainable within the framework of a Cartesian world view.

[74] Ibid., page 132-133.
[75] Ibid., pg. 133.

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