IVCUP

International **V**irtual **C**onference of **U**ndergraduate **P**hilosophy

2nd Annual Installment

Published Proceedings

Aletheia

April 2021

To the faculty, staff, and students of St. Francis Xavier's and Texas A&M's

philosophy departments.

TABLE OF CONTENTS

The International Virtual Conference of Undergraduate Philosophy

Introduction

The International Virtual Conference of Undergraduate Philosophy (IV-CUP) is an annual meeting between universities worldwide hosted by Texas A&M University. The first IV-CUP occurred in the spring of 2016, but in 2020 was revived as an annual tradition by *Aletheia*, Texas A&M's undergraduate journal of philosophy. Each year, the participating universities submit their top undergraduate papers in philosophy to one another for analysis and commentator review. Once responses are prepared, a one-day conference is held for the scholars and commentators to present their arguments, counterarguments, and engage in philosophical discourse. After the conference comes to an end, all works from the contributors are published in these proceedings.

The Structure of the IV-CUP

The order of publishing reflects the structure of the conference. Six scholars are assigned two commentators from different universities to interact with following their presentation. The conference proceeds by alternating the order of the scholars' 15-minute presentations depending on the university they represent. After a presentation, the first of two assigned commentators provide a five-minute response and then have a five-minute discourse with the scholar. Once the ten minutes are complete, the process repeats with the second commentator. After all contributors have offered their work, questions are taken from the audience until the next scholar's presentation.

Acknowledgments

Wasting Away in Megista Genê-Ville: The Blending of Change and Rest

Marshall Gillis, *St. Francis Xavier University*

Change and Rest in the Sophist

In Plato's *Sophist,* the Eleatic Stranger claims that the philosopher "must be like a child begging for 'both,' and say that *that which is* – everything – is both the unchanging and that which changes" (Sophist 249d). He makes this claim to find some common ground between a materialist and idealist ontology, as a part of a desire to find an ontology that can account for knowledge. The stranger then seeks to clarify the nature of the forms that make up this ontology: *Being, Change,* and *Rest.* The Stranger and Theaetetus must figure out if any, none, or only some of the forms will blend with each other. They quickly agree that only some may blend with each other. I take this blending relation to mean any association or experience with any other thing. A puzzle arises to whether Change and Rest, as seemingly contrary beings, can interact, or blend with each other. While the Stranger and Theaetetus agree at many points that Change and Rest do not blend, I will argue that Change and Rest, as they are forms, both truly and meaningfully blend. I will also argue that they do so in such a way that preserves their essential nature.

The Battle of the Gods and Giants

The Stranger and Theaetetus realize that they must figure out what they mean when they talk about Being before they can come to an understanding of non-Being. To do this, the Stranger hypothesizes a number of different ontologies and offers refutations for all of them. The Stranger quickly rejects dualist and monist ontologies, then proceeds to argue against materialists and idealists in the Battle of the Gods and Giants.

The giants are said to "insist that only what offers tangible contact is, since they define Being as the same as body" (246b). However, these people are so hostile to any opposing views the Stranger concludes that it is simply not worth it to reason with them, and instead turns to an imagined, more moderate account of materialists provided by Theaetetus (246d-e). The moderate materialists are able to admit that a soul is a Being, but that a soul is not a body. This means they must

explain what it is that intangible things, like Justice or Intelligence, have in common with bodies so they can explain what they mean when they say *a soul is just.* The reason why the original giants clung to Being as the same as body, is that bodies can interact with each other. The computer I am typing this paper on clearly has Being because I am typing on it; when I press the 'a' key, the letter 'a' shows up on my screen. My computer has the capacity to be acted upon (when I press any key) and it has the ability to act (when I press the key, the computer generates the letter on the screen). Likewise, my soul has the capacity to act or be acted upon. When I have the thought to write this sentence, and actually go about writing it, that is my soul acting; when I read the *Sophist* and come to understand the forms, that is my soul being acted upon. In both cases, bodily and non-bodily, things have the capacity to act and to be acted upon. This is the route the Stranger and Theaetetus take for the moderate materialists when the Stranger says, "I'll take it as a definition that *those which are* amount to nothing other than capacity" (247e).

The Stranger then turns to examine the gods who are the friends of the forms (248a). These friends of the forms distinguish Being from coming-to-be and say that bodies participate in coming-to-be, but that only non-bodily forms have true Being (248b). These extreme idealists believe that a real Being (i.e. the forms, and other non-bodily things) does not actually change. However, the Stranger quickly identifies an issue with this idea. While the concept of capacity squares up with the concept of coming-to-be, the unchanging forms of Being are said to not have this capacity (248c-d). Like the computer example above, it is clear that bodily things have capacity to act or be acted upon, the friends of the forms disagree that Being is this capacity that the moderate materialists agreed to. One of the key reasons for the development of the forms in the first place is to have knowledge of things. If I want to know what Justice is, I do so by coming to know the form of Justice. It seems that, to know is to act upon whatever it is that is being known. I will illustrate with an example. Let's suppose I am a student at the Academy and it is my lifelong goal to come to know the form of the Good. At the beginning of my studies we can make a list of all the attributes that the form of the Good has, and one attribute could be "The Good is known by Plato"; this is a true thing we can say about the Good. Then, after a lifetime of intense study at the academy I finally accomplish my goal and come to a complete and true knowledge of the Good. Now we can add the predicate "known by Marshall" to the list of predicates of the Good; the Good has changed. To be known is to change or be changed and Being without this capacity leads to the impossibility of knowledge (249b). If a form could not be acted upon and changed, then it would not be able to be known. Were the forms to be completely unchanging and with no capacity, there would simply be no process by

which they could be known, as they would be completely unrelated to anything that does change (248e).

This leads the Stranger and Theaetetus to the conclusion that what is, is, what Changes and Rests. These two forms are crucial for the existence of knowledge. With the existence of knowledge being accepted by both the materialists and idealists, it is safe to say they are truly Being. However, at this point in the dialogue it is still not yet clear what is meant by Being.

Being, Change, and Rest

The conclusion of the Battle of Gods and Giants may initially seem like a step back in the progress of the dialogue. While the Stranger has shown both materialism and idealism to be insufficient, it seems they have arrived at the dualist position they previously rejected. These dualists believe that all things are a pair, like hot and cold. But it turns out this position actually leads to monism, as the pair needs to share something in common, Being. This means all things are actually one thing, Being, and not two things, like hot and cold. The Stranger is careful not to fall into this error. By securing Change and Rest as Being, the question can once again be asked what *Being* is in relation to Change and Rest. It is clear that the nature of Being cannot be both changing and resting, so Being must be some third thing alongside Change and Rest (250a-c).

We have three things, Change, Rest, and Being. We need to figure out how these things relate to each other, if at all. If none of the forms blend with each other, then the conversation comes to a halt. We run into the late learners (251a-c). Nothing can be said of anything other than it is what it is, i.e., "Change is Change" because there is no blending between anything and any other thing. This option is quickly dismissed as unproductive. However, we cannot allow everything to blend either, or we would end up with one contrary, homogenous mess, where Change is complete resting, and Rest would be completely changing (252d). At this point of the dialogue there is no explicit form for the same or different, and thus no way to distinguish between things that are blending. To blend with a thing seems to mean to take on that thing's nature, since at this point there is no concrete way to explain how they would be different. With only three entities: (Change, Rest, and Being) it is impossible for Change and Rest to blend without the ontology being reduced to monism.

The Problem of Change and Rest

The Stranger originally introduced Change and Rest as a way to secure the existence of knowledge in his ontology. However, he now claims that they do not

blend with each other. If they do not blend, though, it seems they no longer qualify as objects of knowledge, and thus we should be unable to claim whether they can blend or not. The question then is whether or not we are meant to view the claim that Change and Rest do not blend as legitimate. Some positions think it is obvious that the forms do not blend, because they do not exist in spatio-temporal space, where Change and Rest apply (Leigh). Others argue that it is clear that Change and Rest do blend, because all forms blend with Change and Rest in virtue of being forms (Silverman). I agree that the Change and Rest do blend, this is required for them to be objects of knowledge that allow the dialogue to proceed. Since Change and Rest are required for knowledge, and one must have knowledge of Change and Rest to generate the rest of the greatest kinds, we cannot allow Change and Rest to in no way blend. The conclusion of the Battle of the Gods and Giants makes it clear that they do blend and the philosopher must maintain this fact (271d). To reach this conclusion I will examine Allan Silverman's position and contrast it with that of Fiona Leigh's to show why Change must rest and Rest must change.

Forms and Cambridge Change

Allan Silverman writes that Change and Rest do blend. However, this does not mean that the nature of Change is Rest or vice versa. All forms change, and they must change for there to be knowledge as established in the arguments in the Battle of the Gods and Giants. When a form comes to be known, it experiences a change, but this change comes in the form of true things that can be predicated of the form (Silverman 158). To imagine this, we can think of a library. The essence of a library is that it stores books. This will always remain true about the library, however, the inventory of said library will always be changing. One day it may have the *Sophist* on the shelves, but the next, a keen student will check the book out. This means, on a particular day, it was true that the library was home to the *Sophist*, but today it is not. Forms, as objects of knowledge, come to acquire these extrinsic properties. When I grasp the form of Library, it gets to add the predicate "known by Marshall."

Forms are commonly thought of as being at rest, in order to be objects of knowledge (157). It would be impossible to know what a library is because the inventory is always changing, and I could never explain what exactly makes up the library. Rest is what makes something stay the same (249c)**.** The essence of the library always stays the same, no matter what books are added or taken away. This needs to be the case for it to be the place to go to get books, otherwise "library" would be a meaningless term. For Silverman, all forms are like these libraries, always changing and resting. Since Change and Rest are themselves forms, they must blend with each other.

The claim that the forms are resting is not traditionally a controversial one. In fact, their unchanging, or resting, nature is what makes them attractive as objects of knowledge. Were the objects of our knowledge, the forms, constantly changing, one may not be able to appeal to the same form to answer the same question across different points in time, rendering the forms no different than the constantly changing world of particulars when it comes to figuring out what and how we know things. However, some believe that to conceive of the forms as resting is itself a category mistake. While I believe this view to be mistaken, it does offer valuable insight into how the forms operate.

Forms as Non-Spatio-Temporal Entities

Fiona Leigh writes that Change and Rest do not blend, because no forms partake of Change and Rest. Change and Rest only apply to spatio-temporal entities. The forms are purely intelligible entities (Leigh 240). These intelligible entities, while unable to change or rest are still causes of spatio-temporal things (254-5) The forms can be likened to a play in a sport like football. A "play" being the conception of how a down of the game will transpire. For simplicity sake, we can imagine the form of a "Hail Mary pass," this would be where all the receivers run down the field, and the quarterback throws the ball hoping one of his players will catch it far down the field. Now, while this play may determine how things in the spatio-temporal world will unfold, it itself does not exist in that same world. The play is clearly distinct from the paper it is printed on, a coach could successfully get his team to perform the same play without ever showing them a diagram. It would be wrong to think of the play being at Rest. To be at Rest seems to imply the ability to move or Change in some way , but that is simply not possible for something of this kind (ibid). If we suppose the essential characteristics of the Hail Mary pass play are as I have described them, we can recognize that non spatio-temporal things cannot possibly change. Were the Hail Mary to change in any way, say by having one receiver run a hook pattern (instead of straight down the field), then we would simply be describing a different play. We could consider other changes, like a Cambridge Change. In one instance of the play, Plato may be the quarterback throwing the ball; on the next play, however, the coach could sub in Aristotle for Plato. It seems that in one instance it was true that the Hail Mary was run by Plato, and in another, it was true that Aristotle was the quarterback. The play has changed, insofar as something that is true about it, namely, who played the part of the quarterback. But once again this does not actually change the play. Whether it is Aristotle or Plato throwing the ball when they play is run, the essence of the play does not change, and could not possibly change. If we dismiss the Cambridge

Change as genuine change, the way Leigh does, then it seems to be clear that the forms do not actually change or rest (248).

How Change and Rest Blend

I agree with Silverman that Change and Rest do change and rest. The Battle of Gods and Giants secures Beings as things that change and rest, and as Beings, they themselves must change and rest. They must change and rest in order to be objects of knowledge. We can assimilate the football play analogy I used to demonstrate why the forms, including Change and Rest, must change and rest. Cambridge change, the kind rejected through the football analogy, is necessary for the existence of forms as objects of knowledge. A football play is only valuable insofar as it can actually be performed. Anytime a play is actually performed, it undergoes a Cambridge change. It occurs on a different down, at a different point on the clock, with Aristotle throwing the ball. In fact, without the ability to experience these changes, Forms serve no purpose. We could imagine a play that is physically impossible to perform, say, the quarterback must throw the ball from one end of the field and catch it himself at the other. No coach could find any quarterback to accomplish this superhuman feat, so the play would never be performed. We could never name which player threw that touchdown in last Saturday's game, because it is impossible to apply any of these qualities to a play that is never performed. Even things as traditionally unchanging as a mathematical constant can and must admit these Cambridge changes. The number three will always have the essence of being three. No matter what we do to the number three, it will always be the number three. But three is only useful if it is one more than two, and two less than five, or half of six. A form's relations and external predicates are what allow it to participate fully in Being.

Likewise, the forms, including Change, must rest. Leigh is right in that the essence of the form cannot change but should not be hesitant to term this changelessness Rest. The Stranger secures the existence of rest in the Battle of Gods and Giants as that by which things are the same as themself (249c). Things must rest as the same as themselves, otherwise they would have had to change into something different. This is absolutely vital to have an account of knowledge, which is the primary concern the Stranger had when examining different ontologies. Any ontology that could not account for knowledge had to be rejected or reformed until it could. So, when the Stranger says that Change has a share in the Same (256a), we know that the essence of Change, what it means rests, insofar as it is always the same as itself. To deny that Change rests, as the Stranger has described it, is to deny that one can know what Change even is. Surely one must know *something* about Change to even be talking about it. In this case the claim is that

they are able to know that Change cannot rest, but this very knowledge is unattainable if the form of Change does not itself rest. Were Change itself to not rest, it would be like the Hail Mary changing into a different play. To describe the forms as resting seems to be much less problematic than describing them as changing, however, describing the forms as resting could seem to imply they have the ability to change as well, a much more problematic claim. I think the Cambridge change allows resting objects to experience change, in a real sense, that does not imply any essential characteristic of a form must also change. By removing the negative connotation of the word *change*, there is no longer any reason to be hesitant about describing the forms as resting, and it should be clear that the forms of Change and Rest do change and rest.

One may wish to deny that mere Cambridge change is a proper kind of change. I can sympathize with this view, since nothing substantive about a thing changes when it undergoes a mere Cambridge change. This seems to go against a sort of common sense understanding of change that something about the thing itself, and not just true predicates, must actually change. There is something different about changing the players that make up the team as opposed to simply changing the name that we call the team. In one sense the parts that compose the team are actually different, whereas in the other, only the name we apply to the same whole has changed. While a name change may affect a team in a superficial way, there is no indication that simply changing the name will result in any meaningful difference. If the Toronto Maple Leafs haven't won the Stanley cup in years, then it should be clear that were they to start the next season with no changes but a new name, they would be in no better position to win the cup that season.

It may be tempting to dismiss mere Cambridge change due to its seemingly trivial nature, however many instances of change we experience and recognize as real could be described as mere Cambridge change. Take a traditional marriage for example, a wife changes her last name to match her husband's. When this occurs, there is nothing about the woman herself that actually changes. She does not, simply by taking her husbands name, somehow actually become a blood member of that family, or change her biology or DNA in any way. No, the only thing that changes about this woman is the name we apply to her. If we want to restrict change to a common-sense idea of change then we run into the problem that a lot of things we commonly assume to be change, do not actually constitute a common-sense change. While it may seem like nothing substantially changes about this woman, the change does have real world implications. A married woman has a different legal standing than an unmarried woman, and the name of a sports team can have a tangible impact on how players and spectators perceive that team. These changes

are not just merely trivial cases of change, they are real and meaningful instances of things experiencing genuine change.

Conclusion

In this paper I have argued that Change and Rest both truly and meaningfully change and rest, and that they do so in such a way that they retain their essential natures. These forms are crucial to developing an ontology capable of reconciling materialist and idealist views that can account for knowledge. The forms essential nature must be unchanging, and therefore at rest, but forms also undergo Cambridge change. Change and Rest, as forms, have these resting natures while still maintaining the capacity to undergo change. Change and Rest both change and rest, and therefore they do clearly blend.

Works Cited

Silverman, Alan. "Forms and Language" *The Dialectic of Essence,* Princeton: Princeton University Press, 2002.

    pp 153-167.

Leigh, Fiona. *Restless Forms and Changeless Causes,* London: Aristotelian Society, 2012. pp. 239-259.

Plato "Sophist" *The Complete Works of Plato*, Translated by Nicholas P. White, Edited by John M. Cooper,

    Hackett Publishing Company, 1997. pp 236-293

First Response to Marshall Gillis

Archana Murthy, *Texas A&M University*

Plato's theory of forms is the metaphysical foundation upon which an entire theory of Platonic philosophy is built and studied, even today. This paper on the blending of Change and Rest by Marshall Gillis discusses The Sophist, a Platonic dialogue in which it is debated whether the forms are being or coming-into-being – that is, whether they change or rest. This paper argues that the forms of change and rest (henceforth notated as Change and Rest) must blend together because this is the only way for anything to be known, or for knowledge to exist.

Gillis claims that to know a form is to change it while its essential nature rests. (For example, if I know about the form of the good, the Good is changed because it is now known by me. However, it rests and stays the same because it is still the Good.)

The first issue that becomes apparent in this claim is the way that Change, Rest, and knowledge are discussed. It becomes increasingly confusing as to whether change and rest are forms or properties. This is because they are treated as properties (they are applied to forms and applied to objects in a spatiotemporal space) but also called forms. If they are forms, then why do Change and Rest need to change and rest? This is not made clear. Furthermore, in the middle of the paper, Change and Rest are named "objects of knowledge" (Gillis 5). The meaning of this is even more difficult to discern. Is knowledge ontologically before Change and Rest, for them to be objects of knowledge? The bottom line is that if Change and Rest are not in fact forms, then the reason for discussing the necessity of these forms blending is brought into question.

This same confusion is highlighted in Gillis's argument against Leigh. Leigh claims that forms neither change nor rest because change and rest are only applied in a spatiotemporal space. Leigh seems to be referring to change and rest as properties while Gillis refers to them as forms, which makes any argument to this end ineffective. However, Gillis goes on to claim that forms do change and rest but gives an example of something that occurs in a spatiotemporal space (a football play), which does not address the argument. In fact, all his examples refer to tangible or particular forms (libraries, football passes) and none refer to universal forms (justice, love, intelligence). If nontangible examples were given (if that is possible) then the point being made may have been strengthened.

However, the core issue with this idea comes down to the discussion of Cambridge changes (wherein something is considered changed because it is predicated differently). An example of this change given in the paper is a woman changing her name upon marriage – something about her is changed but she still remains the same person. Not only does Gillis claim that Cambridge changes are how forms blend, because they are able to change while still resting in their essential nature, he also claims that Cambridge changes are what allow forms to be predicated in the real world which is necessary to be real and "fully participate in Being" (Gillis 8).

This idea is fundamentally against how Plato thought of the forms. Plato describes the forms as unchanging truths residing in heavens of which the tangible world around us is a mere imitation. As humans, we strive to learn the forms but if we fail to do so, the forms still exist. The forms are independent of us and this material world. Plato would not agree with the thought that "a football play is only valuable insofar as it can actually be performed" (Gillis 8). The existence of the forms is not dependent upon what (we believe) is possible in our physical space. The forms are organized in a heavens-down model, not a world-up model.

Furthermore, the way a Cambridge change is used here attempts to place forms in a limbo between changing and not changing and seems to dodge choosing one or the other. When a woman changes her name upon marriage, either it is a fundamental change (she now is a part of a new family, she has a responsibility to someone other than herself), or it is not and nothing about her fundamentally changes. It cannot be both a change and not a change at the same time. If that woman did change fundamentally with the act of being married, then she is not the same in her essence. I say this not to argue against the existence of Cambridge changes, but to show that even if they did exist, they would not apply to this argument with the forms. Either a Cambridge change is not a real change (in which case the forms do not change, only rest), or it is a real change (in which case the forms change and do not rest).

COMMENTATOR

Second Response to Marshall Gillis: The Elimination of the Form of Rest

Eric Nash, *Texas A&M University*

In his paper, "The Blending of Change and Rest", Marshall Gilles argues that the Platonic forms of Change and Rest are capable of blending together. Further, they are able to blend in such a way that preserved their essential natures. This position has been rejected up until now in the literature because of a standard 'unstoppable force meets unmovable object' paradox — Change and Rest cannot mix together, because doing so makes them no longer 'Change' and 'Rest' respectively. Gilles claims, though, that there exists a kind of changes which an object of knowledge can undergo without its essential characteristics being altered, namely, Cambridge change. In this paper I will analyze the nature of Plato's five major forms, explain Gille's argument for blending, express my concern over the danger Gilles's argument poses for eliminating the Form of Rest altogether, and then finally offer some possible remedies to this problem.

In the *Sophist*, Plato claims that there are five major forms: Being, Sameness, Difference, Change, and Rest. They are the most important of the Forms, because all forms 'participate' in them. For any thing to exist implies that it will participate in these five *megista genê*-ville. However, Change and Rest are unique in reference to the other three. For any form X, if X exists then it logically entails that it participates in Being (because it *is* rather than is *not*), Sameness (because it is like itself), and Difference (because it is not any other form). X does not have these properties because it is a part of X's intrinsic characters, but because X, as we say, participates in the Forms from which these traits comes. For example, Sameness is different from Rest because both Forms exist, not because 'difference' is a part of Sameness's makeup. While Change and Rest share in these three Forms, no other sensible particular shares in Change and Rest permanently or simultaneously. If it were possible for any one thing to simultaneously participate in Change and Rest then we come to the previously mentioned paradox. Meanwhile, the nature of reality allows for no sensible particular to permanently stay in states of either Change or Rest. Moreover, no Forms participate in Change or Rest at all, because "Forms…are purely intelligible entities" (Leah 2012); they are changeless causes. Consider the Form of Beauty, the Form structures all beautiful sensible particulars and so causes them to possess the attribute of beauty. If this form were to change,

then it no longer is the quintessential Beauty, and all instances of beauty in the world are lost. My argument relies heavily on this understanding of the Forms' nature.

Now that we understand how Forms interact with one another, we can being to analyze Gilles's argument. Gilles claims that a type of change, Cambridge change, can affect Forms while refraining from altering their essences. Cambridge change occurs when any predicate P about object O is true at one moment, but, due to the change of some other element E, P logically passes from true to not true. Gillis provides a nice example to clear this up: I may not know the Form of Justice at this point of my life, but if I ever come to learn about it, the predicate "is known by Eric Nash" can be added to the list of the Form's properties and thereby change the Form itself. Then once I die and cease to know the Form of Justice, the predicate passes from true to not true, changing the Form of Justice once again. However, the essence of Justice has never been altered, and Justice can continue to manifest itself in the tangible world in the same way as before. Therefore, the blending of Change and Rest must be possible, because, while they are 'at rest' in their essential properties, they can still undergo a type of change — Cambridge change.

I argue, though, that this conclusion must be met with some hesitation. If Change and Rest are truly objects of knowledge, as Gilles and many others suggest, then it follows that they can indeed be know (thus opening the door for Cambridge change). However, as we observed earlier, Forms are *changeless causes* and, because of this, are able to structure things in the world after themselves. If this were not the case, then the Form ceases to exist and fails to produce instances of itself. Cambridge change is thought to offer a way sidestepping this problem, and indeed it does, but only most of the time. To Gilles's credit, this works in all cases except one: the Form of Rest. Rest, by its very nature, must always be at rest. If it were ever to not be resting, then it ceases to be the quintessential Rest. Subsequently, every instance of resting, failing to have a Form to structure them, would be destroyed. The moment the Form of Rest comes to be known by an individual it will gain the predicate "known by so-and-so", activating Cambridge change and causing it to not be at rest any longer — it is no longer Rest itself. However, Rest's existence implies several things: it participates in Being, Sameness, and Difference. Its participation in Difference does not allow for Rest to yield to its cosmic opposite, Change, at any time. With this being said, Cambridge change mandates the obliteration the Change of Rest. My analysis does not completely negate Gilles's argument, however. Rather, it requires for his argument needs to be refined in one of three possible ways.

The first option is that we commit ourselves to the elimination of the Form of Rest. This requires our devotion to a Heraclitean metaphysics of sorts. If Rest drops from existence because of its susceptibility to Change, then all things *must* be *constantly* changing. Change will take over the realm of sensible particulars making it impossible for anything to be in a state of resting. This move is not unfounded, and, in fact, I believe is quite acceptable. However, if this is not a feasible conclusion, we can add a footnote to Gilles's argument that will make the destruction of the Form of Rest impossible: the Forms can never be truly know. This allows for Cambridge change to occur in the tangible world, but it cannot reach the realm of the Forms. In this way, the Form of Rest is protected from Cambridge change. This, though, has its price. Our second resolution implies that people can never truly know other important forms, such as the Form of Good. If these two options prove to be insufficient there is one last choice, which I believe to be the strongest and the most appealing: Cambridge change is not legitimate change. If anything, including the Form, undergoes Cambridge change, then it does *not* imply that it is *not* simultaneously resting. In her paper "Restless Forms and Changeless Causes", Leigh asserts that Plato was aware of changes similar to Cambridge change, but rejects them as genuine change (Leigh 239). When we observe a thing moving from a state of rest to a state of change (i.e. experiencing true change), we see that its intrinsic properties are being transformed — not its relational properties. If I tossed my computer out the window and it shattered on the ground, it has faced real change: the screen is cracked, it is incapable of turning on, the keys are popped out of place, and so on. However, if I look at my computer and add the predicate "it is seen by me", we intuit that it has not changed in a meaningful way. With this, I believe it is best to say that Cambridge change is at best nominal change, and thus does not serve as a legitimate conduit for the Form of Change. Cambridge change, then, cannot be capable of eliminating the Form of Rest.

Though Gilles provides a strong argument for the blending of the Forms Change and Rest via Cambridge change, I believe he has brought about an unintended consequence: the end of the Form of Rest. Out of the three solutions I have offered to this problem, it appears to me that denying Cambridge change the status of genuine change is the most compelling. Since it does not alter any properties that are actually a part of a given thing, it presents itself as a very weak form of change. So weak in fact, that it does not bring about instances of the Form of Change. However, if a supporter of Cambridge change is reluctant to give up their belief in its transformative powers, I have offered two other acceptable avenues that will prevent the destruction of the Form of Rest.

Works Cited

Gilles, Marshal. *Wasting Away in Megista Genê-Villa: The Blending of Change and Rest,* TAMU

    IV-CUP, 2021.

Leigh, Fiona. *Restless Forms and Changeless Causes,* London: Aristotelian Society, 2012. pp.

    239-259.

Plato "Sophist" *The Complete Works of Plato*, Translated by Nicholas P. White, Edited by John

    M. Cooper, Hackett Publishing Company, 1997. pp 236-293

Artificial Intelligence and Therapy
Francis Gregg, *Texas A&M University*

I. Introduction

Suicide death has risen "25 percent since 1999 across most ethnic and age groups" (Routledge 2018) which points to an obvious crisis in our modern society. According to Dr. Clay Routledge, a professor of psychology at North Dakota State, it may in part be from "a desperate search, common to all lost souls, to find meaning" (Routledge 2018). One attempt to decrease suicide rates is the use of AI chatbots as replacements to human therapists. Chatbots, by design, are woefully unable to provide treatment to people who are suffering from existential depression which is the result of humans yearning to find meaning in their lives. In fact, a person who suffers from this form of depression and decides to use chatbots as a therapeutic medium may actually be pushed deeper into despair. One framework to better explain the cause and remedy to this issue is the theory and practice of Logotherapy which must be administered by a human mental health professional. My critique of chatbots as an instrument to help humans overcome lack of meaning will shine light on some of the strengths and pitfalls of AI, the novelty of humanity's yearning for meaning, and how the two can symbiotically coexist.

II. Strengths and Weaknesses of AI

AI was defined by the computer scientist John McCarty as "machines that are capable of performing tasks that we define as requiring intelligence, such as reasoning, learning, planning, and problem-solving" (Luxton 2015, 2). The specific type of AI that is used in advanced chatbots is referred to as weak AI, which essentially means the program has specific tasks it is attempting to accomplish within specific parameters. Advanced chatbots use machine learning processes through the utilization of artificial neural networks. In layman's terms, the chatbot has the ability to not only recognize patterns, but also respond to those patterns differently depending upon how often connections are made. Neural networks were designed in a way to mimic the "biological neurons" where "connections are made and strengthened with repeated use" (Luxton 2015, 3). The system receives data from the user's questions and answers, along with guidance from psychologists who

work on product development. It is important to note that the psychologists may make adjustments to the program after it is used but do not provide direct oversight while the user interfaces with the chatbot.

A technical strength of AI is its ability to take in and process massive amounts of data. AI of this kind also has incredibly powerful predictive capabilities that have been successful in predicting behavior for treatment of mental health issues such as obsessive-compulsive disorder (Luxton 2015, 4). Computation, by its nature, is also purely logical because the input of data is processed by built-in logic gates that decide the appropriate output. This means that AI far surpasses humans in answering logical questions within closed systems. A few technical weaknesses of AI are that the predictive power is limited by the amount of data that the program is given, predictions are skewed if it is only given one type of input, and the logical processes may still fall victim to the biases of the person who designs the system.

Contributing factors leading to the adoption of Chatbots

In recent years, chatbots have gained popularity as an alternative to human-to-human therapy. For example, just two years after its founding, the popular app Woebot had already raised eight million dollars as of 2019 (Jesus 2019). Three major arguments predominate as to why chatbots should be widely available for use. First is twenty-four-hour accessibility; mental health professionals need time for sleep, spending time with family, and seeing other patients. Second is cost; the average cost per one-hour therapy session ranges from $65-$250 (Good Therapy 2017) as compared to the Woebot app which costs $39 a month for unlimited use (Jesus 2019). Lastly, some people fear judgment from the therapist for seeking help for mental health issues and the app offers an alternative that does not require any face-to-face meetings. All of these are legitimate concerns that require analysis that go far beyond the scope of this paper. These factors are nonetheless important when discussing the topic of chatbots in order to better understand the psychodynamic and socioeconomic underpinnings that have brought chatbots into public discourse. The real question is, Do the capabilities of the apps, and aforementioned arguments, provide enough credence that chatbots are adequate therapeutic medium(s), and more specifically, do they address the needs of someone suffering from existential depression?

III. Existential Depression

Existential depression, or the "existential vacuum," (Frankl 1972) as Dr. Viktor Frankl referred to it as is the result of insufficient satisfaction of an individual's drive toward "the will to meaning" (Frankl 1972). The human drive for meaning is derived from being animals that are not purely driven by instincts,

having the ability to have transcendent thought, and in the face of suffering, "detach oneself from even the worst of conditions" (Frankl 1972). These truths were not purely theory to Dr. Frankl because they were pressured tested by his experience surviving the brutal torture at the concentration camps Dachau and Auschwitz during WWII. Dr. Frankl's answer to the existential vacuum was the creation of logotherapy, which by oversimplification can be referred to as "healing through meaning" (Frankl 1972). The meaning sought after may be explained through the definition of its root word *mean*, "to have in mind as a purpose" (Webster, Nd). In other words, aiming toward a higher ideal in order to transmute suffering into a means for fulfillment.

Frankl believed the experience of existential depression was exacerbated by living in a post-enlightenment world where people are "no longer told by traditions what [they] should do. Often [they do] not even know what [they] basically [wish] to do" (Frankl 1969, x). In the digital age, these problems are amplified to an even greater extent. For example, as of 2018 "77% of all Americans have a social media profile of some kind" (Mammoser 2018) which a study of young adults showed a "13 to 66 percent higher [rate] of reported depression" (Miller, 2017) with people that used social media. Through the use of algorithmic prediction of human behavior, AI has been used as a tool to specialize marketing strategies and increase materialistic tendencies. The philosophical underpinnings of materialism have led, in part, to the effects that dig individuals into deeper holes of existential despair. With each advancement in technology, the ability to feed the animalistic urges of humans increase while the tools to fulfill meaning remain, at best, stagnant.

The therapeutic process espoused by Logotherapy involves a few techniques but in the words of Dr. Frankl "what matters in therapy is not techniques but rather the human relations between doctor and patient" (Frankl 1972). Logotherapy is in some ways a humanistic approach to psychology, meaning that it recognizes that "humans, as individuals, are unique beings and should be recognized and treated as such by psychologists and psychiatrists" (Britannica2020). When in therapeutic dialogue with a patient, the mental health professional views a client as another human undergoing suffering instead of a lifeless mechanism with a malfunctioning system. In relation to other schools of psychology "approaches as distinct as Watsonian behaviorism, Pavlovian reflexology, Freudian psychoanalysis, and Adlerian psychology are not nullified by logotherapy but rather overarched by it" (Frankl 1972)). In practice, "the findings of these schools are reinterpreted and reevaluated by logotherapy and rehumanized by it"(Frankl 1972). In other words, the humanity of the mental health professional is paramount in order to empathize and understand the suffering felt by the patient which is not within the capabilities

of AI. In accordance with this a priori assumption, wouldn't this be especially true when confronting a purely human phenomenon like existential depression?

When a person seeks help from a chatbot in order to alleviate the psychological distress of existential depression the chatbot is unable to empathize. It is unable to empathize physiologically because it is not a biological being. Additionally, it is unable to empathize psychologically because the mechanical processes that allow it to problem solve do not allow it to have sentience and therefore empathy. At best, a chatbot can give a reply to psychological distress that convincingly appears to have the traits of human empathy. When confronted with existential questions, the strength of being purely logical, able to synthesize large data sets, and breakneck processing speeds are no longer adequate in fully addressing the issue at hand. The journey to discover meaning is not a purely logical phenomenon and in a lot of cases is actually illogical considering the circumstances. The sad reality is if a person is attempting to seek help to solve their existential depression the consequences of being led astray may result in suicide.

If a person seeks help from a human mental health professional there is still no guarantee the therapist will be able to prevent the patient from taking their own life. The job of the counselor is to empathize and help guide the patient to satisfy their own personal will to meaning. Dr. Frankl, when discussing therapeutic dialogue, points out that "under no circumstances do I consciously attempt to direct or persuade the patient to adopt my values since I am convinced that values are relative rather than absolute" (Frankl 1972). The answers on the path toward the will to meaning are driven by the individual's own personal value hierarchy which is thereby expressed through the individual's conscience. The therapist is able to intuitively recognize the patient's humanity and existence of a conscience through their own personal manifestation of theory of mind (ToM). ToM may be defined as "the ability to attribute mental states to ourselves and others, serving as one of the foundational elements of social interaction" (Ruhl 2020) which is developed during infancy and early childhood. This is a process that is unable to be completed by chatbots as discussed in the previous paragraph.

IV. Conclusion

If AI is incapable of assisting humans undergoing existential depression, and may in some cases even lead to the suffering in the first place, does it have any place in a human's will to meaning? Yes, but not as an empathetic and therapeutic guide, but instead, as a tool towards self-actualization. At first glance this may seem contradictory to my previous claims about the shortcomings of AI, but those assertions were critiques on the manner in which AI is currently being utilized, not that AI is inherently a weapon. This is not only a distinction for the sake of

understanding the argument I have laid out but is also the first step in reexamining how AI can be used in therapy. AI is incredibly powerful in some ways that far surpasses humans because its internal processes are designed in a completely different way than humans. The key to proper utilization of AI is understanding the properties it holds, the transcendent thoughts humans possess, and then combining them in a manner that assists the individual on their path towards meaning. By reconceptualizing the issue, the core assumption that lead to the problem is illuminated, along with the answer as to how to proceed.

You may ask, "what is the proper way to proceed?" According to Moore's law, which is "the principle that the speed and capability of computers can be expected to double every two years, as a result of increases in the number of transistors a microchip can contain," (Heritage 2011). I would say forward. Onwards toward a future that harnesses the great power of AI while respecting the novelty of humanity. That humankind should fly high on the wings of innovation, as a vehicle to look further into the abyss, to find meaning once more. Thought currently AI is used in a way that harms humans in their quest to find meaning it is within the findings of this paper that a framework for reversing such antagonistic roles is plausible.

Works Cited

FAQs, Therapy. "How Much Does Therapy Cost?" GoodTherapy.org Therapy Blog, March 21, 2019. https://www.goodtherapy.org/blog/faq/how-much-does-therapy-cost.

Frankl, Viktor Emil., Junji Nagasawa, and Yuji Takeuchi. Essay. In *The Will to Meaning*, x-34. Tokyo: Bunri, 1972.

"Humanistic Psychology." Encyclopædia Britannica. Encyclopædia Britannica, inc. Accessed November 5, 2020. https://www.britannica.com/science/humanistic-psychology.

Jesus, Ayn de. "Chatbots for Mental Health and Therapy - Comparing 5 Current Apps and Use Cases." Emerj. Emerj, December 13, 2019. https://emerj.com/ai-application-comparisons/chatbots-mental-health-therapy-comparing-5-current-apps-use-cases/.

Luxton, David D. Essay. In *Artificial Intelligence in Behavioral and Mental Health Care*, 2–4. New York, New York: Elsevier Science & Technology, 2015.

Mammoser, Gigen. "Social Media Increases Depression and Loneliness." Healthline. Healthline Media, December 10, 2018. https://www.healthline.com/health-news/social-media-use-increases-depression-and-loneliness.

"Mean." Merriam-Webster. Merriam-Webster. Accessed November 5, 2020. https://www.merriam-webster.com/dictionary/mean.

Miller, Caroline. "Does Social Media Cause Depression?" Child Mind Institute, June 11, 2020. https://childmind.org/article/is-social-media-use-causing-depression/.

"Moore's Law." Dictionary.com. Dictionary.com. Accessed November 5, 2020. https://www.dictionary.com/browse/moore-s-law?s=t.

Routledge, Clay. "Suicides Have Increased. Is This an Existential Crisis?" The New York Times. The New York Times, June 23, 2018. https://www.nytimes.com/2018/06/23/opinion/sunday/suicide-rate-existential-crisis.html.

Ruhl, Charlotte. "Theory of Mind." Theory of Mind | Simply Psychology. Accessed November 5, 2020. https://

www.simplypsychology.org/theory-of-mind.html.

First Response to Francis Gregg: The Place of Artificial Intelligence in Psychological Therapy

Aidan Peters, *St. Francis Xavier University*

I. Introduction

In his paper, Francis Gregg (2021) excellently argued that contemporary artificial intelligence (AI) are incapable of acting as logotherapists/therapists. In my response, I will argue that far more complex AI can one day serve as superior therapists/logotherapists to humans. This argument will rely primarily on two assumptions. Firstly, the human cognitive capabilities fundamental to logotherapy described by Gregg (like empathy, an ability to explore subjective meaning, theory of mind, sentience, etc.) are rooted in neurological function, and are replicable in analogous cognitive systems (i.e., AI). Secondly, AI will become increasingly complex and capable of higher-level cognitions. In sum, I agree with Gregg that current AI should only serve as tools for self-actualization, but I argue that AI will eventually be able to serve as therapists themselves.

II. Artificial Sentience

AI, which can be broadly defined as "machines that are capable of performing tasks that we define as requiring intelligence, such as reasoning, learning, planning, and problem-solving" (McCarty as seen in Gregg, 2021), has incredible potential to evolve. As noted by Gregg (2021), the neural networks serving as the basis for AI model the brain's networks composed of real neurons. In assuming a purely materialist reality, it is plausible that neurons produce all forms of cognition (including sentient ones) like empathy, theory of mind (which, for simplicity, will be considered the same thing in this paper based on their conceptual similarity), transcendental thought, etc. Firstly, sentient experiences have neuroimaging correlates, indicating that physical neural activity is at least associated with sentience. For example, Mooneyham, Mrazek, Mrazek, Mrazek, Phillips, & Schooler (2017) have observed that particular neural profiles of activity are associated with various states of conscious attention. Similarly, empathy, an essential ability required of a logotherapist (Gregg, 2021), also has various neural correlates (Borja, Abdelgabar, De Angelis, McKay, Keysers, Gazzola, 2020). Secondly, studies monitoring the sentient effects of changes to the brain support the notion that the nervous system is responsible for sentient experience; for example,

lesions to various brain regions have been observed to impair one's empathy (Grattan, Bloomer, Archambault, & Eslinger, 1994). Furthermore, suppression of particular brain regions (using transcranial direct current stimulation and repetitive transcranial magnetic stimulation, respectively) via inhibitory stimulation, suppresses one's empathy (Coll, Tremblay, & Jackson, 2017; Paracampo, Pirruccio, Costa, Borgomaneri, Avenanti, 2018).

AI neural networks, can be developed to outperform or match humans in information processing speeds (Jarrahi, 2018), and in many cognitive-based tasks like: the *Jeopardy!* game show (Jarrahi, 2018), the board game Go (Jarrahi, 2018), chess (Jarrahi, 2018), object and scene recognition (Hashimoto, Rosman, Rus, Meireles, 2018) image-related medical diagnoses (Shen, Zhang, Jiang, Chen, Song, Liu, He, Wong, Fang, Ming, 2019), etc. Given the functional similarity of artificial neural networks to the neural networks of the real brain (Gregg, 2021), and their superior ability to be refined to perform better than humans on various tasks of cognition (Jarrahi, 2018), it is likely that in some future, AI could outperform human therapists in all forms of therapy, including logotherapy.

III. Artificial Empathy

According to Gregg, 2021, AI can not serve as logotherapists on the basis that they can not understand or empathize with the human condition of a patient. However, I would argue that AI could become infinitely more like humans, because of their incredible malleability and room for development (Jarrahi, 2018), resulting in comparable sentience and cognition, providing the basis for AI to empathize with human experience. This genuine empathy could look like the empathy resulting from the culmination of one human's cognitive processes oriented to understand another human's similar but distinct experience, or the empathy one human feels for an organism of a different species. In either case, one can envision the lived experience of another despite their varying subjective experiences, much like how a well-developed AI could empathize with humans.

In their paper, Gregg (2021) argues that AI can not empathize with humans, as AI are not biological beings, making them physiologically too distinct to understand humans. In objection, I would argue that physiologically distinct entities can empathize with one another if the empathizer possesses the sufficient cognitions. For example, if a human comes across a wounded/suffering animal (e.g., a dog), they may feel empathy; even if a human watches a film, they can empathize with mechanical/technological depictions of a consciously distinct species (e.g. Marlan the clownfish from *Finding Nemo*). Furthermore, in the film *Coco*, human viewers are evoked to empathize with depictions of non-biological agents, forgotten souls. If human nervous systems composed of biological neural networks can cognitively

empathize with agents of another species, and technical/mechanical depictions of heterospecifics or non-biological entities, why then can cognitively capable AI neural networks not plausibly empathize with humans?

Gregg (2021) also argues that the mechanical processes characterizing AI make it non sentient, and therefore incapable of empathy. However, I would posit that biological sentience results from a complex of physical neural activity (i.e., various cognitions), and that overall sentience (and its component processes/cognitions) can emerge from artificial/mechanical neural networks operating on the same/similar functional principles (see section II).

Gregg, 2021 claims that AI can not serve as logotherapists for their inability to understand firsthand what it feels like to exist in the absurdity of objective meaninglessness (i.e., the existential vacuum), and thus can not accompany a patient through such a condition based on firsthand understanding. It is true that AI are created with a purpose, however, conscious AI may as well be able to experience the existential vacuum to virtually the same degree as humans. Envision an AI designed to simulate the human mind and its experience. This machine, functionally very similar to any ordinary human, would be entirely capable of experiencing the existential vacuum described by Gregg (2021) despite it having objective purpose (i.e., to simulate the human mind). If a human similarly believed that their sole purpose was to model human experience, they would possibly be riddled with the feelings of insufficient meaning, and thus experience the existential vacuum, just like how an AI model could experience this vacuum. Hence, AI are capable of experiencing the existential vacuum so long as they lack satisfactory meaning.

Gregg (2021) argues that AI can not accompany a patient through the existential vacuum in order to find subjective meaning as "When [AI are] confronted with existential questions, the strength of being purely logical, able to synthesize large data sets, and breakneck processing speeds are [not] adequate in fully addressing the issue at hand. The journey to discover meaning is not a purely logical phenomenon and in a lot of cases is actually illogical considering the circumstances". Albeit I would postulate that physical human cognitive systems explain how humans navigate meaning, due to this exploration likely being based in cognitive outputs, just like the rest of our sentient experience. Therefore, AI neural network systems equal to or superior in complexity to human neural network systems could possibly do this illogical exploration of subjective meaning just like humans. AI neural network systems, like human nervous systems, are designed to take inputs of information (Hashimoto, et al., 2018) (e.g., a patient's speech and the overall sum of meaning of the speech provided by the patient) and provide outputs (Hashimoto, et al., 2018), which in this case would be empathetic therapeutic

responses not intended to guide the patient, but instead emphasize their choice/ freedom, and the normalcy/acceptability of their condition.

In Logotherapy, it is essential that the therapist and patient have a good relationship, that the therapist views their patient as a human, and explores with them the void of objective meaning to support them to find for themself subjective meaning (Gregg, 2021). Gregg (2021) claims that AI and humans can not have a good relationship; although, how much different would this AI-human relationship be from that between two human nervous systems composed of complex systems of neural networks? Surely, AI of similar cognitive complexity to humans could establish meaningful/healthy relationships with humans so long as the AI appears sentient.

IV. AI for Mental Health Treatment

In agreeance with Gregg (2021), I would claim that current AI are incapable of effectively providing talk therapies (e.g., Logotherapy). Contemporary AI lacks a fundamental quality of talk therapists: sentience. However, non sentient AI still have use in the systematic treatment (e.g., cognitive behavioural therapy) of pattern based mental illness (eg. obsessive-compulsive disorder, as alluded to by Gregg, 2021), given their excellent pattern recognition. Similarly, the combination of excellent processing speeds and pattern recognition allow AI to diagnose conditions effectively (Shen et al., 2019). AI processing speeds and pattern recognition can also act harmoniously to psychoeducate people on the nature of their own conditions and what to do about their mental health problems, much like current chatbots. For example, a machine could recognize an individual as phobic, and explain to them the nature of their disorder, and what effective treatment would look like (e.g., systematic desensitization).

Sentience may be necessary for patients to feel improvement in talk therapies because patients need to know that they are genuinely heard by a listener rather than a tool. Because AI currently lacks sentience, they lack three necessary qualities of a logotherapist: genuine empathy, a capacity to have relationships with humans, and a firsthand understanding of what the existential vacuum feels like (Gregg, 2021). One must then ask: at what point do we know AI are sufficiently sentient? The degree of sentience and intelligence required of an adequate logotherapist would demand incredibly complex neural network systems, making understanding what is happening in these networks nearly impossible to know (The AI Black Box Problem, 2019). Therefore, I would suggest practical measures of sentience to gain confidence in the notion that these machines are sentient. Such tests could be whether a machine can have a relationship with a human which is equally meaningful to the human as a human-human relationship, whether humans feel that

the machines empathize with them and act empathetically, etc. After all, practical/ functional measures of sentience are one reason why humans can rationally assume other humans are sentient. Humans outside of the sentient observer seem sentient, and therefore they are, pragmatically speaking. If AI seems sentient by observers, then pragmatically speaking, they are. Much like how humans can view other possibly sentient beings, so too can they only have confidence that an AI is sentient based on its behaviour, and therefore one can never know with absolute certainty whether an AI or a human is or is not actually sentient. Nonetheless, whether a logotherapist is actually sentient does not matter; if a logotherapist seems sentient and can do its duty as a logotherapist, then this is sufficient.

Works Cited

Borja J, K., C., Abdelgabar, A., R., De Angelis, L., McKay, L., S., Keysers, C., Gazzola, V. (2020). Changes in brain activity following the voluntary control of empathy. *NeuroImage, 216.* doi:https://doi.org/10.1016/j.neuroimage.2020.116529

Coll, M., P., Tremblay, M., P., B., Jackson, P., L. (2017). The effect of tDCS over the right temporo-parietal junction on pain empathy. *Neuropsychologia, 100,* 110-119. doi:10.1016/j.neuropsychologia.2017.04.021

Grattan, L., M., Bloomer, R., H., Archambault, F., X., Eslinger, P., J. (1994). Cognitive flexibility and empathy after frontal lobe lesion. *Neuropsychiatry, Neuropsychology, & Behavioral Neurology, 7*(4), 251-259.

Hashimoto, D., A., Rosman, G., Rus, D., Meireles, O., R. (2018). Artificial intelligence in surgery: Promises and perils. *Annals of Surgery, 268*(1), 70–76. doi:10.1097/SLA.0000000000002693

Jarrahi, M., H. Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. (2018). *Business Horizons, 61*(4), 577-586. doi:https://doi.org/10.1016/j.bushor.2018.03.007

Mooneyham, B., W., Mrazek, M., D., Mrazek, A., J., Mrazek, K., L., Phillips, D., T., Schooler, J., W. (2017). States of mind: Characterizing the neural bases of focus and mind-wandering through dynamic functional connectivity. *Journal of Cognitive Neuroscience, 29* (3), 495-506. doi:10.1162/jocn_a_01066

Paracampo, R., Pirruccio, M., Costa, M., Borgomaneri, S., Avenanti, A. (2018). Visual, sensorimotor and cognitive routes to understanding others' enjoyment: An individual differences rTMS approach to empathic accuracy. *Neuropsychologia 116*(Part A) 86-98. doi:10.1016/j.neuropsychologia.2018.01.043

Shen, J., Zhang, C., J., P., Jiang, B., Chen, J., Song, J., Liu, Z., He, Z., Wong, S., Y., Fang, P., Ming, W. (2019). Artificial intelligence versus clinicians in disease diagnosis: Systematic review. *JMIR Medical Informatics, 7*(3). doi: 10.2196/10010

The ai black box problem. (2019, November 26). https://www.thinkautomation.com/bots-and-ai/the-ai-black-box-problem/

#:~:text=The%20AI%20black%20box%20In%20computing%2C%20a%20%E2%80%98black,don%E2%80%99t%20know%20how%20they%20do%20what%20they%20do.

Second Response to Francis Gregg

Spencer MacKeen, *St. Francis Xavier University*

Technology is quickly growing as a staple of our everyday lives to the point where it has become expected that some jobs, previously done solely by humans, become automated through advanced intelligence technology, otherwise known as AI. However, despite the rapid growth in the use of AI, and in its abilities, the efficacy of their use in particular jobs should be questioned and this is taken up by Francis Hunter Gregg in his article *Artificial Intelligence and Therapy* where he offers a thought provoking critique on the use of AI chatbots for therapy. Gregg's work helps bring the real question which should be at the forefront of all discussions of technology, which is not where *can* technology be used but rather where *should* technology be used? While many argue that advancements in technology can help solve many of the problems we experience in our lives, Gregg shows that if not implemented for their optimal use then technology can have the opposite effect because there are some experiences which are uniquely human. Therapy is a position where the human perspective and empathy is required, which Gregg shows. Often, those seeking help with any form of depression, but particularly existential depression, are not seeking answers to help them alleviate their problems as if they were a machine, which is all AI is capable of. Rather, they require a person with the unique understanding of the human experience to help show them the ways they can move forward with their lives and find meaning.

While AI may not be a suitable replacement for human therapists, an interesting argument would be their suitability in assisting therapists themselves as a tool at their disposal. How AI should instead be used was briefly touched on by Gregg but could have been given more depth, such as questioning whether chatbots could be used to help direct those suffering from existential depression to a professional therapist. While these chatbots may not be able to help lead those suffering from existential depression to finding their meaning, from this it cannot be inferred that they cannot help those suffering from other forms of depression which have not reached this extent. It must be considered whether all forms of depression inherently require human connection in order to provide some assistance to those who seek it. As Gregg stated, the growing use of chatbots is due to their ability for wide spread use, so if the risks of their use for those suffering from existential depression can be mitigated through their programming then these chatbots could provide a scale of mental health support that humans are incapable of, while also

insuring that those who require a humanistic approach are notified and referred to the proper professional.

Besides their use as a tool to reach as many people suffering from mental health problems as possible, chatbots and their pattern recognizing technology seem ideally suited as an aid to therapists in order to obtain as much information from their patient as possible. As Gregg argued, AI is useful, it is just that its best function may be to serve as a tool for trained therapists to use in order to gain more knowledge at a faster rate than they would be able to otherwise during a patient's first visit. Chatbots could potentially be used as a precursor to visiting a therapist, that way they would already have an idea on how they could help their patient by aiding them with a combination of this knowledge and their inherent knowledge of the human experience. As Gregg noted, possible biases in chatbot programming would have to be considered if used in this way but it is nevertheless an interesting, and more ethical, potential avenue for AI to insert itself.

Regardless of how AI is used in the future, the core element of Gregg's argument, about how we must be cautious in how we proceed with the use of AI, is vital for us to reckon with as we continue forward. AI can solve many of the problems that we face today, but in order for it to do so it must be used in the proper places instead of being considered beneficial in and of itself which it currently is thought as.

The Elimination of Metaphysics

Ken Matheson, *St. Francis Xavier University*

Introduction

In *Language, Truth and Logic*, A. J. Ayer is harshly critical of metaphysicians engaged in theorizing about a reality that transcends the limits of sense experience and particularly of metaphysical propositions, declaring that metaphysicians produce nonsense. He argues that protracted metaphysical debates have not reached consensus nor resolution and have not generated knowledge comprising 'matters of fact'. He wants to show that both the metaphysical propositions and the questions that the metaphysician investigates are literally senseless. His goal is to eliminate metaphysical debates from philosophical investigations.

In this essay, I summarize and comment on Ayer's argument with emphasis particularly on demarcation–the boundary between that which is sensible and nonsense. I briefly review Karl Popper's earlier proposal for demarcation and then review and comment on Ayer's alternate proposal, and, finally, I show that, although the demarcation models distinguish metaphysical propositions as separate from empirical propositions, the models do not necessarily support the claim that there is no value in metaphysical debate. Notwithstanding Ayer's goal, metaphysical debate continues.

The Problem

Ayer declares that "no statement which refers to a 'reality' transcending the limits of all sense-experience can possibly have any literal significance."[1] In other words, statements, such as metaphysical propositions, that are not, or cannot be, supported by empirical evidence are nonsense. He supports his declaration with a claim that longstanding metaphysical disputes are unwarranted and that they have produced no meaningful knowledge.[2] He postulates that knowledge that transcends the world of science and common sense is not possible and investigation of, and discussion about, such metaphysical knowledge is a waste of effort.

Ayer acknowledges that he is not the first to claim that metaphysics is meaningless. He cites Kant's claim that the human mind is incapable of

---

[1] A. J. Ayer, *Language, Truth and Logic*. (London: London, Gollancz, 1936), 5.

[2] Ibid, 4.

understanding anything beyond the phenomenal world.[3] Unlike Kant, Ayer does not want to confront the practice of metaphysics, noting that attacking the soundness of a metaphysical argument cannot eliminate dispute and that showing the weakness of an argument, by itself, cannot refute a metaphysical conclusion. Weakness in an argument lessens the certainty of the truthfulness of a conclusion but does not prove that the conclusion is wrong. Ayer wants to attack the nature of metaphysical propositions to show that, as a matter of logic, they are meaningless and that a transcendent metaphysic is impossible.

He asserts that a metaphysical question that is the subject of dispute is not a genuine question and that a metaphysical proposition is not literally significant. Ayer argues that a proposition or claim (metaphysical or otherwise) is literally significant (or factually significant) to a person if, and only if, the person knows what observations and empirical evidence would confirm or refute the claim.[4] For Ayer, observed evidence is anything that one could experience through sense perception. Questions, as well as propositions, are genuine only if the questioner knows what observations would lead to its answer; it is genuine only if it could be answered through observation of empirical evidence. He contends that a question such as "do substantial Forms exist" is not a genuine question because there are no experiential observations that could inform an answer. Plato postulated his theory of Forms as a possible explanation for consistencies that he observed in the world, but he never claimed to have seen, tasted, smelled, heard or touched a Form. Similarly, for the proposition "souls are eternal" it is unlikely that one could specify experiments or investigations that would yield direct evidence of the veracity of the claim. Hence, in Ayer's opinion, debate over metaphysical questions and propositions such as these produces nonsense.[5]

In order to eliminate metaphysics and thereby avoid the waste of labour on the production of nonsense, Ayer wants to make a clear demarcation between nonsense and that which is literally significant.

Demarcating the Empirical Science

Popper's Principle of Demarcation

In Karl Popper's *The Logic of Scientific Discovery*[6], published a year earlier than Ayer's *Language, Truth and Logic*, Popper describes his principle of demarcation that establishes the boundary between the empirical sciences and non-

---

[3] Ibid, 5.

[4] Ibid, 6.

[5] Ibid. 5.

[6] The work was originally published as *Logik der Forschung* in 1935.

empirical fields of inquiry such as mathematics, logic and metaphysics.[7] Popper's intent is to "define the concepts 'empirical science' and 'metaphysics'" in a way that one can clearly know whether a field of study is part of empirical science. He considers the view that a system (set of propositions) is part of empirical science if and only if it can be tested to produce experiential evidence, and he finds that it is an unsatisfactory demarcation. He argues that defining empirical science as "only those statements which are reducible to elementary (or 'atomic') statements of experience" is a demarcation based on verifiability, and the laws of nature, the foundation of empirical science, fall on the wrong side of the demarcation because the laws of nature are not practically verifiable. For example, the law of gravitation says that every particle attracts every other particle in the universe. One could make an inference based on a few observations, but certainty requires verification of attraction between all pairs of particles in the universe. As there is an infinite number of particles in the universe, verification requires an infinite number of observations–an impossibility. The laws of nature are not propositions, they are simply observations. An observation can verify a proposition, but an observation by itself is not verifiable, it is simply an instance of a sense perception. For the laws of nature, one can only say that, in the absence of contradictory evidence, they are probably true. Consequently, demarcation on the basis of verifiability, excludes the laws of nature from empirical science. Popper also points out that much of the practice of empirical science begins with a theorem for which there may be no empirical evidence and, as such, would be excluded by the demarcation based on lack of verifiability.[8] Although theorems are essential to empirical science, demarcation on the basis of verifiability excludes them from the science.

Popper proposes a demarcation based on falsifiability rather than verifiability. He asserts that a proposition is within the scope of empirical science if it is falsifiable. A claim of falsifiability asserts that testing for falseness of the proposition could yield empirical evidence. If one can specify what evidence would demonstrate that a claim is false, then the claim is falsifiable, and one could, theoretically, design an experiment to gather such evidence. Demarcation by falsifiability admits all empirical propositions and also the laws of nature. Consider, for example, Newton's first law of motion–an object does not change its motion unless a force acts on it. The law is an elementary statement of experience, consistently observed but unprovable because, once again, one would have to observe an infinite number of occurrences of a body in motion to prove that the proposition is true in every case. However, if we observed an object changing its

7 Karl Popper, *The Logic of Scientific Discovery (2nd ed.)*. (Routledge, 2002), 11.

8 Ibid, 18.

motion without a force acting on it, that evidence would refute the law, and consequently, the law is a falsifiable proposition. It is theoretically possible that someone could design an experiment to show that an object changes its motion with no external force acting on it, and demarcation by falsifiability admits the law to empirical science.

By contrast, one cannot falsify a proposition if one cannot conceive of evidence that would refute the claim and such a proposition must, therefore, be excluded from empirical science. For example, the proposition "souls are eternal" is not falsifiable. It is impossible for one to imagine a testing scenario that would yield evidence, by sense perception, that demonstrates death or annihilation of a soul.

Popper's claim is that falsifiability of propositions demarcates the full scope of empirical science.

Ayer's Principle of Demarcation

Ayer seems to reject Popper's demarcation by falsifiability because it requires conclusive falsification, and instead, he proposes demarcation by verifiability. Ayer's argument against falsifiability does not seem to be in opposition to the purpose for which Popper uses falsification, rather, Ayer argues that, just as it is impossible to conclusively verify a proposition, so too, it is impossible to conclusively refute a proposition. He argues that empirical evidence is always gathered under specific conditions and that any change in conditions could affect the observations and thereby amend our belief in the truthfulness or falsehood of a claim. He asserts that "we cannot hold that the genuineness of a proposition depends on the possibility of its definite confutation."[9] Repeated, consistent supporting evidence improves confidence in the veracity of a claim, however, Ayer argues that claims of truthfulness or falsehood are only claims of probability and not conclusiveness, because, under different conditions, one could make contrary observations. In challenging demarcation on the basis of falsifiability, Ayer seems to be disputing an interpretation of Popper's demarcation principle that Popper did not assert. While it may be true that conclusive confutation is not possible, for example, when one can imagine refuting evidence but cannot conceive of an experiment that might produce the evidence, Popper introduces falsifiability because it admits the possibility of empirical evidence. In my reading of *The Logic of Scientific Discovery*, I do not find that Popper suggests or implies that a proposition is falsifiable if, and only if, it could be conclusively refuted. Whether or not a proposition can be conclusively refuted is not part of Popper's principle of demarcation. Ayer's dismissal of demarcation by falsifiability, solely on the basis of the impossibility of conclusive confutation, may be unwarranted.

---

[9] Ayer, *Language, Truth and Logic*, 8.

Ayer proposes that significant (genuine)[10] propositions are demarcated by verifiability. To set his parameters for what can be verified, Ayer specifies two types of genuine propositions: 'a priori' and 'matters of fact'. A priori propositions are either tautologies (statements that cannot be false) or conventions or definitions about the meaning of certain symbols or words. For example, the statement "velocity is the rate at which an object moves and is expressed as distance [travelled] in a unit of time" is a convention or definition of "velocity", and it is literally significant because there is no doubt of its veracity. While a priori propositions cannot pass Ayer's test of supporting empirical evidence, he nevertheless considers them to be literally significant because it is not possible for empirical evidence to refute the assertions.

For Ayer, 'matters of fact' are propositions that make a claim about the state of affairs in the material world and, he postulates, that empirical evidence can verify the probability of, but not the certainty of, the truth of such claims. He holds that propositions that are generalizations, induced from observations, are only probable and never certain. For example, the proposition that "all birds fly" is based on observations of birds in flight and it is held to be true until one observation of an emu that has no capability of flight. The proposition, prior to the observation of the emu, is literally significant because it is based on observation, but it is only probable because it is subject to refutation by subsequent observations, and more importantly because one can never conduct an infinite number of observations.

While studying in Vienna, Ayer had some contact with the Vienna Circle[11] and met some philosophers who demanded conclusive verifiability as the standard for literal significance. Ayer, however, adopts a less stringent standard that he terms "verifiable in the weak sense."[12] He requires only that "some possible sense-experience should be relevant to the determination of its truth or falsehood."[13] In other words, he concedes literal significance of a proposition if one can imagine a scenario that could provide verification, even if no evaluator has completed, nor could complete, all possible verification tests. For verification in the weak sense, it is enough to imagine a verification scenario and to precisely and clearly specify the empirical evidence that the scenario would produce. It is not necessary that the testing scenario has occurred and has produced the empirical evidence. For example, the proposition "the earth's core is molten lava" has literal significance because a scientific model supports the hypothesis, and, if one built a probe that

---

[10] Ayer seems to treat "significant proposition" and "genuine proposition" as synonymous.

[11] The Vienna Circle was a group of early twentieth-century philosophers who sought to reconceptualize empiricism.

[12] Ayer, *Language, Truth and Logic*, 7.

[13] Ibid, 2.

could withstand the extreme temperatures of the core, it could provide confirming or refuting evidence. That one can imagine a testing scenario is sufficient for Ayer to consider the proposition "validated in principle" and to deem literal significance.

Ayer declares his principle of demarcation as follows:

> If a putative proposition fails to satisfy this principle [that some possible sense-experience should be relevant to the determination of its truth or falsehood], and is not a tautology, then I hold that it is metaphysical, and that, being metaphysical, it is neither true nor false but literally senseless.[14]

By this principle, tautologies, because they are never false, and propositions that are verifiable comprise the totality of statements that have literal significance, and all other propositions do not have literal significance. Based on this principle, Ayer's test for literal significance of a proposition is as follows:

> Could some experiential proposition(s) be deduced from it in conjunction with certain other premises without being deducible from those other premises alone?[15]

In other words, if, based on a proposition and the rest of our scientific knowledge, one can imagine some actual or possible observation that could not have come from the rest of the scientific knowledge without this proposition, then the proposition has literal significance. If the proposition is not essential to actual or possible observation, then the proposition has no literal significance.

Did Ayer Eliminate Metaphysics?

In a manner of speaking, Ayer eliminated metaphysics by the stroke of his pen. His principle of demarcation declares that all propositions that lack literal significance are metaphysical, thereby eliminating them from empirical science. He claimed at the outset he was going to show, as a matter of logic, that a transcendent metaphysic is impossible, however, what he has shown is that a metaphysical proposition is not verifiable and is not really a proposition.

Ayer claims that metaphysical propositions are not genuine propositions, but that statement seems to be self-contradictory and uncharitable. He asserts that "a metaphysical sentence [is] a sentence which purports to express a genuine proposition, but does, in fact, express neither a tautology nor an empirical

---

[14] Ibid, 2.

[15] Ibid, 9.

hypothesis."[16] By genuine proposition, Ayer means that one has provided, or could provide empirical evidence to support the proposition. If one were to modify his assertion by replacing "genuine" with "empirically supportable" then it reads: "metaphysical hypotheses are sentences that purport to express an empirically supportable proposition", and that seems like an internal contradiction. If a statement is a metaphysical proposition, then by Ayer's definition, it could not legitimately purport to be an empirical hypothesis. Further, the assertion seems to be an uncharitable characterization of metaphysical hypotheses. In his *Meditations*, when Descartes said "God necessarily exists" (see Meditation III), he expressed a genuine belief, but it is unlikely that he thought he was expressing an empirically supportable proposition.

Although, on the surface, Ayer's demarcation principle appears to eliminate metaphysics from empirical science, if we examine it carefully, we find that it says nothing at all. To simplify the statement, we could restate the phrase "fails to satisfy this principle [that some possible sense-experience should be relevant to the determination of its truth or falsehood]" as "is not empirically supportable". He does not define metaphysics, other than to say that metaphysics comprises all propositions that are not empirically supportable, and therefore we could replace "metaphysical" with "not empirically supportable". Making that substitution, his principle reads, "If a putative proposition is not empirically supportable, and is not a tautology, then I hold that it is not empirically supportable, and that, being not empirically supportable, it is neither true nor false but literally senseless". Ayer attributes senselessness to metaphysical propositions, and, in common language, "senseless" has a pejorative connotation. However, in the context of the principle of demarcation, "senseless" can only mean that a proposition cannot be verified by sense-perception, or, to restate it, "senseless" can only mean that a proposition is not empirically supportable. If we make that additional substitution, then the demarcation principle may be restated as: "If a putative proposition is not empirically supportable, and is not a tautology, then I hold that it is not empirically supportable, and that, being not empirically supportable, it is neither true nor false but literally is not empirically supportable". The demarcation principle does not eliminate metaphysics, in fact, it says nothing at all. It is literally senseless or a tautology.

Both Popper's and Ayer's principles of demarcation allow that empirical propositions are within the scope of empirical science and that non-empirical propositions are not. Ayer labels non-empirical propositions as metaphysical, but that demarcation, by itself, proves nothing about the value or lack of value in

---

[16] Ibid, 12.

metaphysical statements. The demarcation merely shows that metaphysical propositions are not empirically corroborated.

Works Cited

Ayer, A. J. *Language, Truth and Logic*. London: London, Gollancz, 1936.

Popper, Karl Raimund. *The Logic of Scientific Discovery (2nd ed.)*. Routledge, 2002.

COMMENTATOR

First Response to Ken Matheson

Daniel Lightsey, *Texas A&M University*

Ken Matheson's "The Elimination of Metaphysics" analyzes the ideas of A.J. Ayer and Karl Popper that are discussed in their respective books *Language, Truth and Logic* and *Logik der Forschung* (*The Logic of Scientific Discovery*). Matheson focuses on Ayer's work specifically, and scrutinizes Ayer's demarcation criterion for what makes a statement meaningful/sensible and what makes a statement meaningless/senseless.

Ayer's demarcation criterion for what makes a statement meaningful is whether or not that statement can be supported by empirical evidence, actual or hypothetical, that is available to us via sense experience. As Matheson notes, Ayer comes from the positivist tradition that was very prevalent in the early 19th century among philosophers, and his demarcation criterion for a meaningful statement is alike to the verification principle developed by the Vienna Circle (Uebel). What is particularly interesting about these criteria, which Matheson makes explicit in his paper, is that they are statements about meaningfulness, not simply truth or falsehood. The positivist says statements such as "God exists", "murder is wrong", and "beauty is valuable" are *meaningless*. It is one thing to claim the statements above are wrong, but it is entirely another thing to assert that one cannot meaningfully discuss such statements.

Now, *prima facie*, this demarcation criterion is absurd and self-contradictory as Matheson goes on to show in the final pages of his paper, and as he says, Ayer's criterion really says "nothing at all". I am fond of what the philosopher Del Ratzsch has to say about positivism's finest quality, "[Positivism's] one redeeming quality seems to be that it also destroys itself" (Ratzsch 38).

Positivism seems to arise from a firm commitment to the sciences due to there extraordinary predictions and results. But even here, positivism shoots its self in the foot. No one has had a sense-experience of an electron—they are theoretical entities—but it is accepted throughout the scientific community that electrons, and other point-like particles, exist. No doubt there are other examples in the sciences of postulated entities that have never been experienced (e.g. genes). One would have to be an anti-realist when it comes to much of contemporary science by adopting Ayer's demarcation criterion for meaning, and thus science loses its luster.

The questions that arise from this paper are many, but specifically two come to mind. First, how did such an idea become so prevalent and wide-spread? Of course, this is perhaps more of a sociological question than a philosophical question, but I see no reason philosophy could not shed light on this question as well. Another, more prevalent question to Matheson's paper, is whether or not metaphysical statements could be corroborated with the empirical evidence. Matheson's paper ends with stating that Ayer's criterion for demarcation "merely shows that metaphysical propositions are not empirically corroborated". But why think that? It seems to me things such as metaphysical casual principles (causes precede their effects) are corroborated by the sciences. It could even further be true that scientific evidence for the nature of time could corroborate a specific metaphysical theory of time (say, the A-theory of time). Even metaphysical propositions about a mind or soul, could be corroborated with some empirical evidence making one theory more likely than another. It's hard to imagine any one theory being *verified* by some empirical evidence, but corroboration is a completely different matter. Perhaps—in contrast with Ayer—one can corroborate metaphysical propositions with empirical evidence.

Works Cited

Ratzsch, Del. *Philosophy of Science: The Natural Sciences in Christian Perspective*. Illinois: InterVarsityPress,

   1986.

Uebel, Thomas. "Vienna Circle." *The Stanford Encyclopedia of Philosophy*. Summer 2020 Edition, Edward N.

   Zalta (ed.). URL: https://plato.stanford.edu/entries/vienna-circle/.

COMMENTATOR

Second Response to Ken Matheson

Simon Holmes, *Texas A&M University*

I enjoyed the way you created a dialogue regarding Ayer's views on metaphysics and his argument for why they created nonsense statements. It was especially interesting to read the ending where you did to Ayer what he did to metaphysics, in that you called his argument nonsense. Something I do wonder is what would Ayer say to the idea of synthetic a priori statements?

As we know, "a priori" statements are those statements that are true from "merely understanding or thinking about that proposition"[1] which are different from *a posteriori* because those types of statements require experience. An example of an *a priori* statement could be "all bachelors are unmarried men". We know this to be true based on the definition of the constituent terms. The fact that we can know the truth based on the constituent terms is also the indicator for it to be an analytic judgement, a further delineation for the types of judgements and statements that Immanuel Kant notes in his *Critiques on Pure Reason*. Synthetic judgements are those whose truth "depends also upon the facts about the world that the sentence represents."[2] So, what Kant and subsequently Ayer will pull from are the following four types of categories relating to judgments/propositions: analytic *a priori*, synthetic *a priori*, analytic *a posteriori* and synthetic *a posteriori*. Analytic *a posteriori* statements are counter intuitive because as we now understand, analytic judgements are those whose truth can be determined from the definitions of the constituent terms, whereas *a posteriori* statements require looking out into the world. This category is a contradictory and inherently irrelevant because if something is analytic then we would not need to look outside of the statement itself. The analytic *a priori* and synthetic *a posteriori* statements are ones that are fairly common place as we noted the analytic *a priori* statement earlier regarding the bachelor definition. Synthetic *a posteriori* statements could be those such as "all bachelors in the United states are taxed at a different rate from married men". We would need to look outside of the statement itself to determine the truth to that judgment and combine our knowledge of the various facts about the world in

---

[1] Russell, Bruce, "*A Priori* Justification and Knowledge", *The Stanford Encyclopedia of Philosophy* (Summer 2020 Edition), Edward N. Zalta (ed.).

[2] Rey, Georges, "The Analytic/Synthetic Distinction", *The Stanford Encyclopedia of Philosophy* (Winter 2020 Edition), Edward N. Zalta (ed.).

regards to the different terms of that proposition, thus making it a synthetic *a posteriori* statement. Now for the new category that Kant introduced, and Ayer could have considered, I am curious how Ayer would have worked with the idea of synthetic *a priori* statements or those whose "necessary truths would not be a contradiction to deny [such as] '7+5=12' (Kant, *Critique on Pure Reason*, 193). Synthetic *a priori* statements are those statements that conform to our modes of experience because we can only know appearances and if these are necessarily true statement, then they must appear in such a way that we can perceive them.

So, when you write that Ayer comments about *a priori* statement's role in passing an empirical test on the end of page 7 and 8, how would Ayer reconcile the idea of synthetic *a priori* statements in terms of literal significance? What I mean by this is that the idea that 7+5=12 is something we learn by combining our facts of the world, making it synthetic. We inherently know each of the constituent terms based on some innate intuition, meaning we know what 7 or 5 or 12 is without having to experience it. We know its truth based on its definition and by combining those we get 7+5=12. So, how do you believe Ayer would respond to the idea of synthetic *a priori* propositions in terms of literal significance if they seemingly refuted his idea of the literal significance of a metaphysical idea as something like 7+5=12 plays a foundational role in the rest of our world experience? Also why did he not consider this previously in his original writings if Kant established this idea hundreds of years before Ayer wrote?

On Our Birthright: An Exploration of Hegel's Two Agencies

Diego Lavado, *Texas A&M University*

Introduction

Hegel's philosophy of history causes controversy because it can be understood as a direct call for passiveness in our actions. Since the higher purpose of the Spirit in world history is the achievement of universal freedom, all of our actions should be seen working towards that ideal. Thus, freedom emerges as the realization of the passiveness in our actions led by the imminent goal of the modern state. This idea of passiveness is far away from the actual call Hegel tries to make in his philosophy of history. It is true that Hegel understands history not as the selfish caprice of one's will but as Reason's substantial characteristic to show itself in reality. However, even though Hegel knows there is Reason in history, he understands that nothing can be achieved without passion.

Passion is what decides determinant moments in world history that rule the course of our lives. According to Hegel, these moments are carried by two kinds of agencies: one of the individual with passion and the other from the self-conscious individual that asserts his freedom through self-governance. In these two agencies, world history achieves its rationality in the actions of men and women that, through passion and self-governance, claim their birthright of freedom in a necessary process of struggle. For this reason, this essay will explore Hegel's two kinds of agencies as a call for action to pursue our birthright in the necessary struggle individuals will face in world history.

First Agency: On the Universal Objective and the Individual Will

Hegel sees the first kind of agency as the freedom of the individual with self-governance in an activity. This activity of the individual will is understood in its purpose that puts a universal objective[1] into action. Thus, the idea of achieving something is innate to every human if we will accomplish anything. As an example of the process of putting one's will into action for a universal objective, Hegel explains how to build a house. He illustrates how the different elements (rocks,

---

[1] Hegel understands a universal objective as the "realization of the universal Idea in an immediate actuality and the elevation of the singular [agency] into universal truth"(Hegel and Rauch 28). This universal truth is found in the achievement of freedom of self-governance after the agent thinks about the determinations of his actions that are not merely private.

wood, iron, fire, water, and air) serve, in synergy, for the higher purpose to build a house. In this sense, Hegel asserts that every element for building a house, once the house is finished, is excluded from its end goal since the house serves to protect anyone from the elements used to build it. The idea of building a house serves to understand how "human passions satisfy themselves; they fulfill their goals according to their natural determination and they bring forth the edifice of human society, in which they have provided for law and order as forces against themselves (i.e., restraining those passions)"(Hegel and Rauch 30). Thus, for Hegel, the universal objective of our activity belongs to something greater than simply our will and, in the course of world history, this is essential to achieve greater goods for humanity as a whole.

However, Hegel's first agency should not mislead someone to think that any activity deemed as "private will" serves a universal objective that is beneficial for the individual itself. For this reason, Hegel recognizes, in another example, how someone's private will puts a universal objective into action with detrimental consequences. He explains how a man tries to set another man's house on fire for revenge. The arsonist sees the realization of his private will in the immediate action of burning the house of his enemy; however,

> The ignited portion of the beam is connected to its other parts, and these to the woodwork of the entire house, this house to other houses nearby— and so a widespread conflagration ensues, which affects many more people than the one against whom the act of vengeance was directed, consuming their goods and property, and even costing many of them their lives (Hegel and Rauch 30,31).

The result of the private will of the man went beyond anything he could have forecast and his purposes of vengeance put into action an objective that had negative consequences.

For Hegel, the private will always carries a universal objective that exceeds our immediate desires. This is the reason why individual actions truly matter. They should be considered not as our selfish caprice, but as our determination to attain something by carefully considering the universal objective of our actions. Thus, to become self-conscious and to represent the collective human effort, we need to recognize that our actions belong to something greater: the higher purpose of universal freedom. Hence, in recognizing the universal objective of our actions in freedom, our desire for freedom is represented in the self-governance of one's actions to live in a society recognizing everyone as free. The truly free individual,

therefore, is the one that lives in the state as a citizen of laws. The will that is negligent to consider laws is not found in the state, therefore, the will is not free.

Second Agency: The World-Historic Individual and Passion

When the free will of the individual explained in the first agency is contextualized in its historical implications, the second kind of agency emerges. This agency is of the world-historic individuals and their passion to attain a historical change. Hence, when their will is contextualized in its historical implications it "involves a universal concept, but one of a different sort from that which serves as the basis for the continued existence of a people or a state"(Hegel and Rauch 32). For Hegel, the universal objective for continued existence is turned into a historical action. These historical actions are carried by heroes who "are those whose own particular aims contain the substantial will that is the will of the World Spirit"(Hegel and Rauch 32) which is the higher purpose of universal freedom. Thus, by advancing the higher purpose of universal freedom, the universal objective in the actions of the world-historic individuals become the wisest deeds in their time.

Just as in the first agency, the world-historic individual is not aware of the universal objective of his actions beyond his private will. However, the particularity in the actions of the world-historic individual is that his actions are driven through passion. Thus, the passion of the world-historic individual, who we might associate with the word hero, commits himself to an action that is determinant to the epoch whenever there is a necessity for deeds. Therefore, the passion of the world-historic individual, manifested in actions that change the course of world history, serves for the concrete realization of the universal objective, which is beyond his private will. However, even though nothing meaningful can be achieved without the passion of these individuals, history should not be understood as the representation of their subjective will or their caprice. Even when the universal objective of their actions is determinant to advance the higher purpose of universal freedom, history is not made solely for them or created by them. It is the Reason in history that allows the passions of individuals to work for and advance the higher purpose of universal freedom at the same time.

As an example of a world-historic individual, Hegel thinks about many righteous individuals in world history. One of them is Caesar who:

[F]ought to retain his position, honor, and security— and since his opponents held power over the provinces, Caesar's victory over these men amounted to the conquest of the entire Roman empire. Thus, although he left the form of the state-structure unchanged, Caesar became the sole ruler of the state. The

accomplishing of his originally negative aim— i.e., the autocratic control of Rome— was at the same time an essential determination in the history of Rome and of the world. It was not only the achievement of his personal victory; it was also an instinct that fulfilled what the time intrinsically demanded (Hegel and Rauch 32).

Hegel's second agency is precisely what he explains in the life of Caesar. On one hand, Caesar saw an imminent necessity for action (to take power) within his time and decided to act according to his passion. By doing so, he built up the foundation for what would be the future of the Roman Empire and any influence that would come after it. This is an example of the influence of the world-historic individual and his achievements through passion.

Passion then should be understood as the substance that makes changes happen in history. This passion is carried by the world-historic individual and is not exclusive to the type of individual from a certain race, gender, social class, or age. From this perspective, anyone who converges both agencies can become a world-historic individual by asserting his freedom of self- governance and passion to attain his private will.

A Call For Action: On Freedom As Our Birthright and the Historical Struggle

The universal objective of the private will is realized in the action of the individual that becomes self-conscious and has self-governance. Then, there is the world-historic individual whose passion to exert his will makes historical changes. Once both agencies are not excluded from each other, the imminent call for action is plausible in any individual who desires and recognizes freedom as their birthright and only universal objective of their actions. Hence, as a part of the project of desiring and recognizing freedom, the self-conscious individual realizes he lives in times of contradiction where passion is needed for a categorical change in history. In the historical contradiction, then, the synthesis between passion and the universal objective of actions is accomplished. Then, in the self-conscious individual arises self-determination to attain one's private wills according to the higher purpose of the Spirit in world history, universal freedom. It is in this synthesis only, and the historical contradiction, where anyone can become a world-historic individual by recognizing their birthright according to the universal objective of actions that are driven through passion and make substantial changes in history.

Worldwide, the kinds of contradictions that make world-historic individuals emerge are present and are visible in the detrimental reality we experience daily. Our answer to these contradictions should be our actions to claim our birthright by passion and self-governance to attain the higher purpose of universal freedom. This

freedom, exerted through actions, turns into a world where men and women are treated equally without social and economic disparities. A world in which a race is not the base for systemic subjugation or incarceration. A world in which inequality is not something few people try to justify logically to advance their private will. A world in which economic interests are not more relevant than the safety of the environment. Thus, our birthright is to fight for the freedom that is found in the universal objective of our actions, only then, anyone can make a change in the way we experience our epoch and advance a historical effort to make this world a better place.

The process of claiming our birthright, however, is not a peaceful one. Hegel understands that "world history is not the place for happiness. Periods of happiness are empty pages in history, for they are the periods of harmony, times when the antithesis is missing"(Hegel and Rauch 29). It is in the contradiction of our birthright where the world-historic individual emerges as the righteous individual who takes action and exerts his will with passion. The historical moments where contradiction exists are necessary for a historical change and those moments are the ones who carry more suffering and struggle for the world-historic individual to claim his birthright. However, as detrimental as these moments are, Hegel asserts a way in which Reason and passions converge in the process of struggle and allow for the advancement of freedom in world history. He calls this process the Cunning of Reason:

> [T]hat it allows the passions to work for it, while what it brings into existence suffers loss and injury. This is the phenomenal world, part of which is negative, part positive. Compared to the universal, the particular is for the most part too slight in importance: individuals are surrendered and sacrificed. The Idea pays the ransom of existence and transience— not out of its own pocket, but with the passions of individuals (Hegel and Rauch 35).

Thus, through the Cunning of Reason, the passions of world-historic individuals work for the higher purpose of the Spirit in world history while at the same time, experiencing a necessary struggle in pursuing their birthright. This necessary struggle is what makes a historical change meaningful for the course of world history. Unfortunately, the struggle in contradiction and the answer of the world-historic individual might not lead to immediate happiness. As it is explained in the Cunning of Reason, the passion of the world-historic individual in the struggle of contradiction is a necessary sacrifice for the historical change it aspires to make. World history is not the place for happiness and the meaningfulness of our actions

in changing our existence are found in the contradiction that will bring struggle to anyone who wants to take action.

In the necessary struggle to pursue our birthright through passion and self-governance, the world-historic individual acts in the necessary challenge to attain a meaningful historical change. Thus, the call for action Hegel makes is the one that will emerge in contradiction to our birthright and the ways that we are supposed to respond to the challenges these contradictions will bring to our existence.

Conclusion

Under both agencies, Hegel asserts two necessary concepts for his call to action. The first agency sets the universal objective of our actions by recognizing the higher purpose beyond our immediate desires, which is freedom. This makes the individual self-conscious and exert his freedom of self- governance. The second agency puts the passion of the world-historic individual to work for the higher purpose of universal freedom in times of contradiction. Thus, the passion of the world- historic individual is the substance for a historical change whenever there is an antithesis to our birthright. The synthesis of both agencies, and the necessary contradiction in our times, make it possible to realize our birthright and to claim, with passion and self-governance our freedom.

As it stands today, the contradictions found in our society are clear and it is time for us to take action. According to both agencies, anyone with the passion to attain their purposes with self- governance can become a world-historic individual. The hero of our times of contradiction is not exclusive to a race, gender, economic class, or any sort of category that stratifies humans. The hero, or heroes, of our times, are going to be the people that will carry the righteous universal objective of world history through their actions.

Works Cited

Hegel, Georg Wilhelm Friedrich, and Leo Rauch. *Introduction To The Philosophy Of History*.

  Hackett Pub. Co, 1988, pp. 28-32,35.

First Response to Diego Lavado

Emily Matthews, *St. Francis Xavier University*

Diego Lavado, in his paper "On Our Birthright: An Exploration of Hegel's Two Agencies," explores Hegel's explanation of human will and reason. Hegel synthesizes will and reason through human passion. Lavado claims that, "even though Hegel knows there is Reason in history, he understands that nothing can be achieved without passion."[1] Lavado also attributes human freedom as a "birthright." Understanding Hegel is a puzzle, and from this paper, it is not clear where the pieces of the puzzle fit. Lavado identifies two agencies in Hegel, and describes them as a call to action for our birthright. I will focus on the first agency – "universal objective". It is not clear what universal objective is, and where it fits in the broader puzzle of human freedom and our birthright.

Lavado explains universal objective, the first agency, as the realization of a universal idea, or truth. He says in a footnote that, "this universal truth is found in the achievement of freedom of self-governance after the agent thinks about the determinations of his actions that are not merely private."[2] Universal objective seems to be related to private will, for Lavado. Our actions have goals. For example, I may choose to drink coffee because I want more energy. This is a result of my private will. It remains unclear how the pieces of universal objective and private will fit together. Does the result of my private will contribute to the universal objective? However, it seems that human beings are not always aware of the universal objective. This would not give us freedom, but be a limitation. Acting for an end that we are not aware of does not mean we are free, it is implies the opposite – the end is already determined. Choosing the end you wish to act on is essential for individual will. I can choose if I want to have more energy or not, this choice determines the action of drinking coffee.

If human beings have no control over the universal objective, implying it is determined, then we lack autonomy. This raises further questions for me; Where does the universal objective come from? How did come about, and how do we know about it? How can we be sure it is universal if we can act without *knowing* it (i.e. private freedom)? We must be sometimes aware of the universal objective if we

---

[1] Lavado, Diego "On Our Birthright: An Exploration of Hegel's Two Agencies," *Aletheia Undergraduate Journal of Philosophy*. 2021.

[2] Lavado, Diego, 2021

can talk about it, so I am unsure if that means we can choose not to be aware of the universal objective. A traditional way of understanding human beings and freedom is that every rational being will strive for happiness. However, we do not pursue the objective of happiness without being aware of it. We are not going to choose something unless we know it will lead to happiness.

Overall, it is unclear what link universal objective has to freedom. This is especially the case if we not are always aware of the universal objective. Universal objective seems to limit our freedom, not prove it. The pieces of the puzzle do not clearly fit together, and need further explanation. I am left with more questions about universal objective, private will, and our freedom/birthright than answers.

COMMENTATOR

Second Response to Diego Lavado

Jordan Morgan, *St. Francis Xavier University*

In his paper, Diego Lovado investigates Hegel's two agencies and shows that their synthesis, with the context of the necessary contradiction in our times, allows us to realize our birthright, namely, [the exercise] of freedom through our passion and self-governance. I wish to express some concern about one of these agencies, namely, the passions.

My main concern pertains to how Hegel and Lovado define the "passions," and just how significant the passions are to Hegel's worldview. There appears to be an apparent oversight in the paper. How can Hegel seriously claim "that nothing can be achieved without passion"?[1] Moreover, are the passions an agent themselves, or is it simply part of the agent?

It is particularly unclear what exactly Hegel means when he refers to the passions? Are the passions merely basic emotions like anger, sadness or happiness? Or does his notion of the passions have more profound and complex characteristics? I ask this since there is a significant emphasis on the passions as agents or part of one of the two agencies. As Lovado mentions in the paper, Hegel believes "that nothing can be achieved without passion." This appears to be a rather extreme position. Indeed, one might claim that the passions are opposed to reason and obstacles to right reason; in fact, many might argue that one can achieve as much without passions as an individual with them. Moreover, one might achieve more extraordinary things without passions; by relying solely on their reason.

Furthermore, it appears as though there is a sort of causal efficacy or power attributed to the passions by Hegel (or the author). Consider the author's remarks that passion "decides determinant moments in world history that rule the course of our lives"[2] and that it "should be understood as the substance that makes changes happen in history."[3] Passions seem to be agents themselves. They (apparently) "decide" and "make changes happen." This is clearly homuncular. Passions do not strictly speaking do anything. People decide and make changes happen in history. And people have passions. Sometimes they act according to their passions, and

---

[1] Lovado, Introduction.

[2] Lovado.

[3] Lovado.

sometimes they do not. But, to talk as if passions are doing the acting makes a mess of human agency.

I believe that the lack of adequate attention to the passions themselves introduces confusion and ambiguity in what is otherwise an exciting and novel contribution to our understanding of Hegel. Ultimately, this is a call for further elaboration and clarification of "passion" in Lovado's essay "On Our Birthright: An Exploration of Hegel's Two Agencies."

4D Forms as a Solution to the Problem of Forms and Particulars

Joe MacMaster, *St. Francis Xavier University*

Introduction

Arguably Plato's most significant contribution to the world of philosophy is his theory of the forms. These forms are mysterious things which can only be grasped by the intellect as opposed to any sense perception (*Timaeus*, 28a). Though mysterious, and the basis of much questioning and philosophical discussion, the forms pervade every aspect of our existence. In *Phaedo* Socrates teaches that after death the philosopher's soul goes on to the world of the forms (63e-64a). In the *Republic* Plato uses the Divided Line analogy to explain how the forms are both beyond, and more real than this world (509d-511c). In *Timaeus* we are introduced to the Receptacle of all Becoming (48e - 49a). In this paper I will argue that for the theory of forms to work, the forms themselves must be four-dimensional objects that intersect our three-dimensional world.

My initial reasoning for why this must be the case was to solve the problem presented in *Parmenides* that if forms can be expressed in different unconnected locations at once, then a form is separate from itself, or that a form is not One. Forms being either separate from themselves, or not One, is contrary to the theory of the forms that Plato seems to posit throughout his works. The 4D form model allows for a form to exist independently, undivided from itself, while also being able to intersect all points of the 3D world without compromising its nature. This theory faces several challenges. A) It is unclear whether this argument works just as an analogy or if it actually how the forms relate to particulars. If it is just a helpful analogy, where exactly does it break down, and what exactly does it explain? B) If the forms actually are 4D objects, what's to say that two different 4D objects couldn't appear exactly the same to us as they intersected the 3D world. It seems like the forms must be extremely different from the things we see in the material world for this to be the case either by analogy or literally.

In this paper I will argue that the 4D form theory in not just an analogy, but that the forms are in fact 4D objects. I will break this argument into four parts: (1) The necessity of forms as having more than three dimensions. (2) Why this theory must work literally and not just as an analogy. (3) How the forms retain their essence while intersecting this world. (4) Our understanding of the forms is limited

to our understanding of their effects, and so they may be radically different, higher order actualizations of what we see them as. This view does not arise explicitly from Plato's beliefs, but based on that nature of the forms that we get from Plato I believe this is the most adequate explanation to solve the problem of forms and particulars. After making these arguments I will address several other problems and considerations that may arise throughout the argument.

1. Why the forms cannot be limited to the third dimension

In *Parmenides*, Socrates is asked how the forms relate to particulars. Parmenides himself raises the problem that if an object possesses a certain form, it needs to be clarified whether or not it possesses only a part of the form, or the whole form (131a). If it possesses the whole form, then it seems that the forms are not one, because a certain form can be found in many different places. If the full form of *X* was found in many different places, then there must not be just one of *X*. Plato's works in general lean more towards the idea that particulars partake of only a part of a form, and not that each particular possesses an entire form or many entire forms, which defeats the idea that they are one-over-many. The problem of how a form can be found throughout many separate places in space at one time and yet still remain one and be undivided from itself still remains. This is where I believe the 4D form theory becomes necessary.

If a form exists entirely within the third dimension, and is bound by 3D laws, then seeing a form appear in multiple places at once would mean it is separate from itself. A form cannot be separate from itself, since oneness and indivisibility are properties that each from has (*Parmenides*, 129b, 131a-b). Therefore, the forms must not be bound to the laws of 3D objects, and do not only exist in this dimension. The forms cannot be of a lower dimension, since that would make their expression in 3D objects impossible, so they must exist in a higher dimension. The problem that exists with discussing objects of a higher dimension in space is that they are physically impossible for us to visualise or grasp. We can only understand how objects of a higher spatial dimension relate to objects in our own dimension. This is done by observing how objects within our own 3D world would interact with objects in a 2D or 1D world.

2. 4D forms are literal, not analogical

Something that must be clarified with this idea is whether or not it is to be interpreted literally or as an analogy. I think it must be taken literally, since if it is just an analogy, the forms must only exist within our dimension, or within conceptual space. I do not think conceptual space serves as a complete model here, since the existence of objects in conceptual space depends on human thought.

Since the forms need to have existed prior to, and independent of human thought, I believe they must have existed outside of conceptual space. We are left with no choice but to accept that the forms reside in a higher spatial dimension. A problem here is that we cannot mentally grasp or visualize a 4D object. What we know about these objects and how they relate to our 3D world is based entirely on how 3D objects would relate to a 2D world, and how 2D objects relate to a 1D world. It is worth noting that this 4th dimension is not referring to time, but another spatial dimension that is completely invisible to us. We are used to using an x, y, and z axis to describe 3D space. A 4D space would have a w, x, y, and z axis, as well as time. Just as the z axis would be invisible to any sentient being in a 2D world, the w axis is completely invisible to us, but it would be the axis that 4D objects would move along.

In a previous paper I used the analogy of a tuning fork intersecting a 2D world to illustrate how 4D forms would intersect our world. To recap, if we came upon a 2D world with sentient beings in it, and inserted a tuning fork into that world, the beings there would see two separate circles appearing out of nowhere. Since they cannot detect what is outside of their 2D world, they would be unable to see the rest of the tuning fork, and so the two prongs of the tuning fork would appear as separate, but virtually identical objects. This analogy seems to illustrate how the forms literally relate to our world.

Take the idea of an empty 2D world and assume that there is some creator who has to make a world in this empty plane of existence. This creator is a 3D being, and so the materials available to them are also 3D. These materials can intersect the 2D world, and so the creator builds a world from these 3D objects along the 2D plane. Even though what gives existence to everything within that world now is truly a 3D object, whatever exists and has sentience within that 2D world is only seeing a "slice" of those 3D objects, completely void of depth. The 3D objects are analogous to the forms, and those sentient beings are analogous to us. This is a highly simplified analogy to how a 4D form network would weave the reality of what we see in our world. But just as Plato believes that it is the forms that are more real than us, those 3D objects are more real than what they are perceived as by the 2D beings.

The next problem that arises from this is that if forms are intersecting our world and we are perceiving them, how can we tell them apart? Going back to the 2D world analogy, I could insert a tuning fork, a radio antenna, and a stainless-steel knitting needle (all of equal diameter and external appearance) into that world. Each of them would appear as identical objects to whatever beings were looking at them, despite the fact that they are all entirely different objects with different functions.

How do we know that the same does not happen with the forms within our world? To answer that we must examine the nature and essence of the forms.

3. *Forms must always retain their essence, which is pure.*

To remove the essence of an object is to remove the object entirely. In the scope of the forms, a physical object may not be limited to just one essence, if it is the forms that give a physical object its essence. The issue of purity gets complicated in the discussion of how forms partake of other forms. Despite that, I believe it is safe to say that the forms as objects are of radically different substance and character that mere 3D physical objects. Plato concedes that the things in the physical world do not necessarily have one forms associated with them. In *Parmenides* we see Socrates questioned as to whether there is a form of hair, mud, or dirt (130c). If physical objects get their nature from one form, then there must be a form for every physical object. But in that passage, we see that not every physical object has its own form, and so we know that an object may partake of several different forms to become what it is. This composite action of the forms seen within the particular realities of this world brings me back to the previous problem mentioned. How can we be sure that two distinct forms would not appear as the same thing when intersecting our world? To answer that I will bring to light the essence of the forms.

If forms are not changed essentially when objects partake of them, then they retain their unique essence within this world. A form's essence is not changed into something different when an earthly object partakes of it (excluding Cambridge Changes, which do not alter the nature of an object). By this I mean that a from does not become a different form because something partakes of it. Just as a tuning fork that is intersecting a 2D world does not become not-a-tuning-fork, form X does not become $\neg X$ when it intersects this world. Therefore, a form retains its essence in this (the 3D) world.

The key difference between a form and a tuning fork is that forms don't have parts in the same way a tuning fork (or any physical object) does. I can't speak about the handle, or the left and right prongs of a form. Now it may be the case that the 4D form has some sort of 4D "net" shape, which would allow it to intersect our universe all over the place. But the form itself is of identical substance and essence at one end of the earth where it intersects as it is at the other end of the earth and every other point on its body. Because of this pure unchanging essence throughout the form, and the self-perpetuation of forms, each form would be unique in the way it intersects our world. One thing that the aforementioned tuning fork, radio antenna, and knitting needle share is a material. They're all made of shiny stainless steel, and in reality, are themselves composites of different parts and materials with

different functions. If each form is something unique, without duplicates, then forms will not have identical extrinsic appearances, and thus we will not find two identical things coming from different forms.

The nature of the forms must be such that at any point that they intersect our world they give off the same appearance to us. For example, wherever the form of the Circle intersects, or whenever an object partakes of the Circle, we see that object as circular. Likewise, the form of Two or Three will always yield something we perceive as two or three. But as we know, what we see in the physical world is always an imperfect version of the higher form associated with it (*Republic,* 509d-510a). This leaves us to resolve how something perfect can come across as imperfect, but also how something so grand, complex, and able to intersect our world at every given point can convey something as simple as a square. I think the resolution lies in recognizing that there is a degree or equivocation between a property *x* and the form *X*. We know that the form gives rise to the property, but just how similar is the form to the particular?

4. The nature of the forms may be radically different than our perceptions.

Since we can only grasp the effects of 4D objects and not their essence, we can never understand the pure essence of these forms. They are a mystery to us so long as we are bound by human flesh in this world. We can only hypothesize as to what the forms in the higher realm look like. This does not necessarily mean we can know nothing about the nature and behavior of the forms. Going back to the tuning fork example, what would be seen in that 2D reality when the tuning fork was inserted is radically different than the nature of the entire object. There is the fact that matter as we know it is fundamentally three dimensional. If something 3D is inserted into a 2D world, only two dimensions are perceptible. There is height and width, but absolutely zero depth. While the essence of the entire object is not altered, what is being perceived in that 2D world is something fundamentally different than what the object really is.

Recall the Divided Line, and the Allegory of the Cave, where Plato implies that intelligible things are imperfect copies of something higher. I think that makes perfect sense in light of this theory. Again, the difference between our physical objects and those in the world of the forms is that the forms are of a pure essence and are self-perpetuating. It is probably the case that if we could mentally grasp the form of *X* to its full extent, it would be something radically different than the *x* that we are used to. The four-dimensional element of the forms is not analogical, however our interpretations of them probably are. What we call "good" may be an analogy to what the form the Good is. In such a way that of we could comprehend the form of the Good fully we would be comprehending something we never

understood existed. If we could experience the form of the Good with all aspects of our being, we may realize that what we call "good" barely compares to how good the Good is.

I frequently describe the forms in the four-dimension using three dimensional terms. The use of these terms like describing a "form net" arise due to a lack of appropriate language. As beings limited to three dimensions, our way of describing things does not extend beyond three dimensions. The best way to describe the shape of the forms may be a sort of "hyper-net" in which all of the forms can reach all parts of our universe. V. Harte's paper on Plato's Metaphysics cautions us to avoid viewing Plato as preaching two separate realities (Harte, 14). In this model of the forms, a single reality is still retained. It is not as though the fourth dimension where the forms reside is some alternate reality, but rather an extension of our universe inaccessible to us in this life. We are still left with several problems and considerations, which are discussed in the next section.

Additional problems and considerations

After establishing my thoughts on the limitations of 3D forms, the literal aspect of this, the retention of essence in this dimension, and the likelihood of forms appearing as radically different to us in contrast to their 4D nature, I see several problems still unanswered. (I) Until now the examples of the forms given, and the general forms in question have been physical, abstract things. Forms like those of certain shapes, numbers, and material properties. These types of forms make sense using a physical, or "hyper-physical" model of forms to explain, but the model may seem to omit forms that have no physical or abstract properties. The forms of Justice, Piety, The Good, The Beautiful, Being, and all others like this seem difficult to reconcile with a model that uses 3D physical objects as an analogy. (II) Are the forms limited to only the fourth dimension, could there perhaps be forms that possess five or more dimensions? (III) Why do the forms intersect the world where they do? Platonic writing often speaks of things partaking of the forms, but if you remove all of the forms that the object partakes of, what are you left with? (IV) If physical objects are a series of form copies, then they do not actually have the form, but are just modeled after the form. This seems contradictory to the previous partaking notion we see in Plato's earlier works.

I. The Problem of Non-Physical Forms

The model for the forms that I have proposed suggests that the forms are 4D objects that penetrate our 3D world weaving the intelligible aspects of reality. This works well for the forms that give rise to physical properties, but not all forms do. In *Euthyphro* the dialogue works around determining the true meaning of Piety. In

Republic the dialogue opens up with a discussion on the true meaning of Justice. If the discussions were on "what is a Triangle", or "what are Odd and Even" the discussion may have been shorter. I believe that is quite difficult to fully describe the majority of forms though. Even something as simple as Two seems impossible to explain without the use of other numbers, which themselves are forms. Despite this, we still have a functional understanding of Two, and other simple positive integers. The same is the case with forms like Justice, Beauty, and Piety. We can't simply define their full and true essence, but without a functional understanding and ability to recognize these things, we would not even be trying to understand them. If we didn't understand a single about the forms in question, we would not be able to discuss them, or recognize them. But we discuss these forms because they are patterns or relations that we recognize and understand, albeit an imperfect understanding perhaps.

The forms like Justice, Piety, Beauty, and even Tallness, have no intrinsic physical properties themselves. What they are seems to be relations. Justice deals with the interactions and how people behave towards one another. Piety is a relation has with those of higher honour, such as a father or a god. Beauty seems even harder to explain, but it is one of those things that we can immediately recognize when confronted with it. Tallness is the most obvious as being a relation, what is tall in relation to one thing is short in relation to another (with two exceptions, presumably the single tallest, and single shortest thing in the world). If these forms are forms of relations, then the forms themselves must be that of pure relation. Not just Relation itself, but of the particular relation that the form in question is. The relations that Justice and Piety are must be present and expressed to the fullest extent at one extreme of their form as they are in another extreme. Where we see Justice or Piety expressed, the form of either must be present, having intersected our world in the locations of their expression in some way.

II. Dimensional Extent of the Forms

So far, I have not addressed the extent of how high the extent of the forms may go in terms of dimensions. If the forms exist in four dimensions, could they also exist in five dimensions? Due to our limitation to only knowing three dimensions, it seems difficult to know for certain, but I do have a thought on this. There are some forms which transcend the others. The form of the Good, Being, One, and any other form that seems to be the cause of other forms, must permeate throughout the world of the forms in such a way that those forms can partake of them. It would make sense that forms like this may occupy five dimensions and interact with the 4D forms in a similar way to how the 4D forms interact with us. If there is any form from which all other forms proceed, this form would occupy the

highest number of dimensions. As to how high this dimension is, I see no reason for it to be any higher than necessary. We occupy three dimensions, we are not limited to two, and do not have four. This does not seem to be out of any obvious necessity and is a simple mode of existence considering the number of dimensions we occupy could be far greater and complex. Because of this, based on purely inductive reasoning, I suspect the forms must also occupy the simplest realm that they can.

III. Why the Forms Intersect Where They Do

For any given object, an array of forms can be identified in it, or it could be said that it partakes in an array of forms. Even the four platonic elements, fire, air, earth, and water have several forms attributed to them in their pure state. As I write this, I am employing the use of a table. My table, and any given table must partake in a series of forms in order to give it it's properties. Maybe there is a form of table itself, but without other more fundamental forms a table could not come to be. A table requires rigidity or hardness, and a degree of tallness in order to raise it off the ground. It will have some sort of colour, and will employ certain shapes (in my case, a square). If this table were to cease partaking in certain forms, what would become of it? If it stopped partaking in the form of the Solid it would collapse, if it stopped partaking in the form of the Square what shape would we be left with? If these forms and their properties were entirely removed, would we be left with anything at all? Additionally, it seems that it was human craftsmen that instilled these forms into the table to some degree. If a carpenter carves a square shape into some amorphous piece of rough wood, does the carpenter then have some bearing on the form of the Square? It appears as though we can move the forms in some way, such that they manifest themselves to a degree within our world, by our doing.

In the *Timaeus* we are introduced to re Receptacle of Becoming (48e-49a). From this, we see Plato's idea that the elements are qualities, not substances. When we speak of fire, we ought
unchanging stability, whereas "such" implies a quality temporally (49d-50a). Perhaps what we are left with after we strip away all of the properties or forms from an object is the Receptacle. The Receptacle must be what allows physical objects to partake of one form, and then another. If you mold a clay brick into a sphere, you are changing the form that the clay partakes of, and it is the Receptacle that allows this change, and for the objects to partake of any forms in the first place.

IV. Forms as Opposed to Form Copies

In the *Timaeus* we see the idea that the Divine Craftsman creates a perfect image or model of things in order to base physical creation off of (30c). If physical objects are just copies of the forms, and the forms just a model to base everything else off of, then how can particulars be said to partake of the forms? If I sketch an image of an apple, my sketch could be called a copy of the apple, which is the model. Even though my sketch is an imperfect representation of what the apple is, I can say that it was modelled after the apple. Despite that, I would not say that it partakes of the apple, since its existence is independent of the apple. Though the forms cannot be destroyed or changed as the apple could, the copies in both cases do not actually have any physical share in the model themselves. This is where I believe the 4D theory can preserve the idea of particulars actual partaking, and not just being modelled after the form as an image. If everything, including those things like justice and piety are just counterfeits of the true version, then the forms aren't so much the cause of our being so much as the Divine Craftsman is, though he just uses the forms as the model to base his creation off of.

Closing

In review, I have discussed why the forms cannot be limited to three dimensions, why the 4D form model must be literal and not analogical, how forms remain unchanged objects when objects partake of them, and how our understanding of forms is derived from understanding their effects. In conclusion, I believe the best explanation for how the forms relate to particulars is through the 4D model. Though nowhere in Plato's works did he suggest this explicitly, the way they are described in much of his work, in combination with the problems raised for the forms in the Parmenides, leads me to believe that he may have been open to the idea had it been presented to him.

Plato characterized the forms as being intelligible, but not perceptible. That is, we can come to know them only through philosophical understanding, but not through any sort of sense perception. We cannot gaze upon a form, or hear, or smell, or touch a form in its pure state (*Republic* 78c10–79a5). I think this coincides with the idea of a 4D form. By their nature, they are simply impossible for us to sense. Our sight is limited to 3D light, as well as the objects we touch, and the sound waves we hear. Our senses are at a disability to perceiving this type of object, but the mind is not as limited. Through sense perception we come to learn about things, and through philosophy we can develop our understanding beyond what we physically perceive. Such is the case with this model, which may serve as a solution to a very old problem.

Works Cited

Cooper, J.M., ed. (1997). *Plato: Complete Works,* (Indianapolis: Hackett Publishing Company) .

Harte, Verity (2008) *Plato's Metaphysics*, The Oxford Handbook of Plato, 1 edition.

COMMENTATOR

First Response to Joe MacMaster

Kate Girvin, *Texas A&M University*

Because matter is constantly changing, forms exist in their own realm as eternal models to humans. To understand physical world particulars in terms of a four dimensional realm, humans use relational claims bound by the third dimension to describe finite objects. In *Forms in the Fourth Dimension*, MacMaster analyses Plato's theory of the forms and argues that forms transcend the third dimension. The author believes that forms are found within the fourth dimension, or spacetime.

In response to MacMaster's argumentation, when attributing nature to forms such as beauty, nature is oftentimes viewed anthropocentrically. Anthropocentrism is the belief that the world is viewed in terms of human values and experiences. Because human beings exist within the third dimension, if there are mathematical theories unanswerable in the third dimension in regards to the fourth dimension, humans would likely not be able to create or describe a form for ourselves, because we are bound by our three dimensionality.

If forms exist in a fourth dimension, humans cannot and have not attained full knowledge of them yet. However, this leaves the opportunity for a non-human being to understand this dimension and contribute to the conception of a form. Perhaps forms are best described not by humans, but by beings who are able to transcend the physicality of the third dimension. This being could also have a better understanding of the third dimension as well as the subsequent dimensions and provide a broader perspective to physical world particulars.

One form that may be difficult to define considering our own biases as humans, and consequent anthropocentrism, is the form humanness. Using Plato's logic of the forms, could humanness qualify as a form? Humans are physical beings, bound by our mortality, that manifest in different shapes, take on different features. Though distinct in many ways, there are still similarities to be found using relational claims and vocabulary accessible in the third dimension. Further, does the form humanness take morality into account? While I understand that MacMasters must define morality and immorality for himself or apply Plato's view of such to humanness, is an immoral agent less human?

Humans are naturally social creatures, and rely on sense perception to understand the world around them. Adding on to the topic of humanness, what implications, if any, does socialization have on creating the form humanness? Do

these societal structures and surrounding institutions influence the ability to assert humanness as a form? How does this play into the idea of cultural relativism?

Further, one major institution that influences many humans is that of religious beliefs. When reading MacMasters' paper, it seems as though Plato and the author are asserting that the forms are found in a higher realm that humans will rarely be able to reach. This could easily be mistaken or tie into Christian ideals. How does dualism and this convention of spirituality existing outside of a material realm tie into definitions of virtue or the soul as described by Christian philosopher Thomas Aquinas?

COMMENTATOR

Second Response to Joe MacMaster: How Does One Conceptualize Outside of Conceptual Space?

Eris-Jake Donohue, *Texas A&M University*

For my response I want to focus on this particular passage from the presentation:

> Something that must be clarified with this idea [of 4D forms] is whether or not it is to be interpreted literally or as an analogy. I think it must be taken literally, since if it is just an analogy, the forms must only exist within our dimension, or within conceptual space. I do not think conceptual space serves as a complete model here, since the existence of objects in conceptual space depends on human thought. Since the forms need to have existed prior to, and independent of human thought, I believe they must have existed outside of conceptual space. We are left with no choice but to accept that the forms reside in a higher spatial dimension.

This raises my central question: How does one conceptualize a concept outside of conceptual space? Now, I know this passage is referring to 'conceptual space' in the sense of the conceptualizing of space itself, and therefore the 3D objects of the forms within said space. Or it could be referring to the 'conceptual space' of cognitive scientist Peter Gärdenfors, although with Gärdenfors' account pertaining to much more than space in the 3D sense, I can't make this attribution with any absolute certainty.[1] In any case, what I am interested in is the signified double entendre of 'conceptual space' here (which, even if its author is unaware of it or didn't intend it, signifies all the same): that being, 'conceptual space' not as the conceptualizing of space but the *space of conceptualizing*; in other words, the dimension wherein the forms *as a concept* is conceptualized. For indeed, the concept of the forms does not exist prior to or independent of human thought. Rather, it is a product of thought (philosophical thought specifically). In their joint text *What Is Philosophy?*, French poststructuralists Gilles Deleuze and Félix Guattari articulate that "philosophy is the art of forming, inventing, and fabricating concepts" (2). They specifically target Plato's forms as one such philosophical

---

[1] See Peter Gärdenfors, "Conceptual Spaces as a Framework for Knowledge Representation."

fabrication (although they refer to them as 'Ideas', but in Platonism these terms are synonymous). I will now give their account:

> "[Philosophers] must no longer accept concepts as a gift, nor merely purify and polish them, but first make and create them, present them and make them convincing. Hitherto one has generally trusted one's concepts as if they were a wonderful dowry from some sort of wonderland," but trust must be replaced by distrust, and philosophers must distrust most those concepts they did not create themselves (Plato was fully aware of this, even though he taught the opposite). Plato said that Ideas must be contemplated, but first of all he had to create the concept of Idea (5-6).[2]

So, connecting this back to the content of the presentation, that the forms themselves are a created concept means there is no interpreting them as either literally four dimensional or outside the dimension we are doing the interpreting. Forms only exist within our own conceptual space. I can exemplify this through another passage from the presentation: "I frequently describe the forms in the four-dimension using three dimensional terms. The use of these terms like describing a 'form net' arise due to a lack of appropriate language." But I would contest that this postulated deficiency is in fact entirely appropriate. If the language used here to conceptualize the forms was inappropriate, this article would not be included here and I would not be responding to it; it would be based upon a *mis*conceptualization. Accordingly, it is only through measures of conceptualization that we can even speak, write, or theorize about the forms at all, even if this leads to attempts at masking their fabricative conceptualizing (such as what Plato does with them from the outset). In conclusion, I would say that it is not the case that we are left with no choice but to accept that the forms reside in a higher spatial dimension. Rather, the forms reside right here—in this world and on this plane—within the very unfolding of philosophical thought itself.

---

[2] The part of the passage in quotation marks is D&G quoting from Friedrich Nietzsche's *The Will to Power*.

Works Cited

Deleuze, Gilles and Félix Guattari, *What Is Philosophy?*. Translated by Hugh Tomilson *&*

    Graham Burchell. New York: Columbia Press, 1994.

Gärdenfors, Peter. "Conceptual Spaces as a Framework for Knowledge Representation." *Mind*

    and Matter 2, no. 2, (2004): 9-27.

Efficient Causation in Aristotle's Reproductive Casual Framework

Holden Hill, *Texas A&M University*

In our contemporary view of Aristotle's biology, specifically in his theory of reproduction, the recent literature charges Aristotle's theory with sexism, arguing that his theory of reproduction is based on underlying gender bias against females. In Aristotle's *Generation of Animals*, several contemporary philosophers argue that Aristotle's theory of reproduction is teleologically ordered towards the production of the male, and that female animals are the result of a failed teleological process, and are therefore deficient in this regard. Therefore, with no bases in which to assert that female animals are the deficient sex, Aristotle's theory is informed by an underlying sexist slant against females. In this paper, I aim to show that the criticisms of Aristotle's theory of reproduction are generated from a traditional misinterpretation of Aristotle's causal framework. Aristotle may have (and probably did) hold sexist attitudes, but the charges against his theory of reproduction that we have seen come out of the recent literature are inaccurate to his actual reproductive framework.

Aristotle's causal framework is made up of his famous four causes: 1) The material cause; the matter a substance is made up of. 2) The formal cause; the characteristics and properties that define a substance. 3) The efficient cause; the antecedent condition which contributed in the generation of the substance. And 4) The final cause; The telos or purpose of the substance. In *Generation of Animals*, Aristotle draws specific attention to the role of efficient causation through external forces in his theory of reproduction, and this role of efficient causation is left out of the recent literature which advances these sexist criticisms. I will show that the reason this role of efficient causation is excluded from our current understanding of Aristotle's theory of reproduction is due to this traditional misinterpretation, and the criticisms that we see today are generated out of a fundamental misunderstanding of Aristotle's causal framework. After recognizing the role of external forces in his theory of reproduction, we will see that there is still much more to be understood about efficient causation in Aristotle's reproductive theory which exonerates his framework from sexist charges.

Section 1: The Standard View

To begin, we must first understand the standard view of Aristotle's theory of reproduction. The standard view is summarized by the contemporary philosopher Gad Freudenthal:

> [A]ccording to Aristotle, the offspring receives its form from the male parent: the male semen, by virtue of the vital heat it has received during concoction in the sire's body, informs the matter supplied by the female (the menses). The ideal-type case is that in which the male semen informs the female matter into its like: the offspring is then a male closely resembling the male parent. The condition for this to happen is that the semen carry sufficient vital heat as to enable it to master thoroughly the (relatively cold) female matter (cf. GA 4. 3, 767b21ff; 768aff): the greatest vital heat thus generates in the matter the most perfect form, that of the sire.[1]

The semen, a hot and airy residue, contains a high level of vital heat, or intrinsic temperature, as opposed to the menses in a female animal which is a wet and relatively cold menstrual fluid. Semen also contains a formal principle not contained within the menses:

> The semen of the male differs in that it contains a principle within itself of such a kind as to set up movements also in the embryo and to concoct thoroughly the ultimate nourishment (GA IV, 1, 766b12-14) … By 'principle' I do not mean a material principle out of which comes into being an offspring resembling the parent, but I mean the first moving cause, whether it have power to act as such in the thing itself or in something else. (GA IV, 1, 765b11-14)

After copulation occurs, the two fluids mix yielding a generative substance in which the embryo develops from. The menses in this process provides the matter for the semen to shape through formal and efficient causation resulting in the formation of a fetus. Throughout the process of formation, a male will be produced only if the level of the semen's vital heat is sufficiently hot enough to resist the excessive coldness of the menstrual fluid. If it is sufficiently hot to resist, the generative residue successfully concocts in the menstrual fluid, resulting in the male form in the likeness of the father. If the semen is not, it is unable to, as Freudenthal put it, 'master' the female's menstrual fluid in the womb, the generative residue

---

[1] G. Freudenthal, Aristotle's Theory of Material Substance. Heat and Pneuma, Form and Soul (Oxford: Clarendon Press, 2002), p. 24.

unable to successfully concoct, thus resulting in the production of a female. Aristotle illustrates this all in a passage from GA IV, 3:

> If the generative residue in the menstrual fluids is properly concocted, the movement imparted by the male will make the form of the embryo in the likeness of itself. (Whether we say that it is the semen or this movement that makes each of the parts grow makes no difference; nor again whether we say that it makes them grow or forms them from the beginning, for the formula of the movement is the same in either case.) Thus if this movement prevail, it will make the embryo male and not female, like the father and not like the mother; if it prevail not, the embryo is deficient in that faculty in which it has not prevailed. (GA IV, 3, 767b15-24)

This is the standard view of Aristotle's theory of reproduction in which our contemporary commentators operate within. Completely unaltered by means of sufficient vital heat of the embryo in the womb, a male will be born in the father's likeness. In this way, Aristotle seems to identify a system in which, if the process of concocting the generative substance in the womb is successful, a male will always be produced. Montgomery Furth, one such commentator charging Aristotle with sexism, argues this process of reproduction is teleologically ordered towards producing a male in the like of the father.[2] Similarly, Freudenthal deems the production of the male as the ideal-type case in which the process of reproduction is naturally ordered towards.

Karen Nielsen, the main philosopher I will be referencing, argues in her paper, *The Private Parts of Animals: Aristotle on the Teleology of Sexual Difference*,[3] that Aristotle construes the female as deficient relative to the male as the result of coming about from an incomplete and failed teleological process. The criticisms then from Nielsen, Furth, Freudenthal, and others all build off of the notion that Aristotle's theory is teleologically ordered towards producing males in the father's likeness. These account all base their criticisms off of this standard view of Aristotle's reproductive process.

---

[2] Montgomery Furth, Substance, Form and Psyche: an Aristotelian Metaphysics (Cambridge: Cambridge University Press, 1988), p. 140.

[3] Nielsen, Karen M. "The Private Parts of Animals: Aristotle on the Teleology of Sexual Difference." Phronesis 53, no. 4/5 (2008): pp. 373-405.

Section 1.1: Degrees of Perfection

Drawing off of the previous work of Charlotte Witt,[4] Nielsen goes further and coins this teleological theory as the "Degrees of Perfection" model. In this model, the form of human can be held to greater and lesser degrees depending on the success of the generative process. To make this work, Nielsen also endorses a view from Witt that, in order to remain members of the same species, male and female members must have identical forms (Nielsen 378). Thus, males hold the human form to a greater degree than females. While female animals still hold the capacities that are essential to being a part of a species, they hold the species' form to a lesser degree of perfection. So in this model, a deficient amount of vital heat in the process of reproduction correlates to the formation of the female, a deficient form to a lesser degree of perfection. Overall, Nielsen advances this Degree of Perfection model on top of what is already considered the standard view. Under this model, the charge of sexism against Aristotle seems compelling.

Section 2: The Thomistic Influence

But where exactly does the standard view that all of these commentators build off of come from? Christopher Byrne is another contemporary philosopher that draws attention to this traditional standard view specifically. In his book, *Aristotle's Science of Matter and Motion*[5], he traces it back to the 13th century philosopher St. Thomas Aquinas. Byrne outlines this Thomistic account:

1) All entities are hylomorphic; combinations of form and matter
2) In generation, a formal cause is combined with a material cause
3) The formal cause brings about the change in the material cause
4) If the efficient cause bringing about the change is not powerful enough to master the material substance, the result is a defective substance, one in which the formal cause has not completely actualized
5) The defective actualization of the formal cause causes the substance to be abnormal and vulnerable to external influences. It is the female's material deficiency that allows external causes to alter the process
6) Because of 5, other external substances can act on them in ways that prevent them from exercising their distinctive capacities
7) In either case, only the material cause is responsible for irregular or abnormal behaviors

---

4 Charlotte Witt, "Form, Normativity, and Gender in Aristotle. A Feminist Perspective",in C. A. Freeland (ed), Feminist Interpretations of Aristotle (University Park, PA: Th e Pennsylvania State University Press, 1998), pp. 118-137.

5 Christopher Byrne, "Aristotle's Science of Matter and Motion", Toronto; Buffalo; London: University of Toronto Press, 2018.

8) The regular, unimpeded behavior of a natural substance is due to its formal cause

The Thomistic account says that during any process in which form and matter combine, the formal cause brings about the change in the material cause. If the efficient cause is not powerful enough to master the material substance, this results in a defective substance in which the formal cause never completely actualizes. This causes the substance to be abnormal and vulnerable to external influences, and this prevents them from exercising their distinctive capacities. We then come to two conclusions; that the material cause is responsible for only irregular or abnormal behaviors, and that the regular, unimpeded behavior of a natural substance is due to its formal cause. This is the Thomistic tradition of Aristotle's framework.

But does the standard view of Aristotle's theory of reproduction fit within this Thomistic framework? Yes, it does perfectly. During the process of reproduction, the formal cause combines with the material cause; the semen with the menstrual fluid. If the efficient cause is not powerful enough to master the material cause, in this case by a lack of vital heat, the result is a defective substance, one in which the formal cause has not completely actualized. The heat plays the role of the external substance that acts on the embryo in a way that prevents it from completely actualizing, i.e., obtaining the male form. Thus, it's the efficient cause that's responsible for the creation of a deficient form, the female.

We can see that Nielsen's portrayal fits this Thomistic framework perfectly, and this is actually no surprise. Nielsen makes specific reference to Aquinas in her defense, agreeing with him "as far as the broad strokes are concerned" (Nielsen 374). We can also see that this framework generates the criticisms of sexism by defining the process as teleologically ordered towards the production of males. The Thomistic framework does so by assigning a specific preventative role to efficient causation which determines the actualization of a form; a lack of some efficient cause results in a defective substance in which the intended form, the telos of a teleological process, never fully actualizes. Is this Thomistic account of causation actually supported in the text though? In the Thomistic framework, efficient cause as we saw only plays a preventative role in generation, prohibiting the actualization of forms. But when we look into the text, Aristotle's treatment of efficient causation in his causal framework of reproduction creates a few problems with this standard view.

Section 3: The Role of External Efficient Causation

One simple passage out of Aristotle's Physics is completely left out of our traditional understanding of Aristotle's theory of reproduction: "Man is begotten by

man and by the sun as well (Phys II, 2, 194b13-15)." Aristotle is suggesting here that the sun plays a role in the reproductive process in some way, but how? Remember, it's the vital heat throughout the process of reproduction that changes whether or not the semen can 'master' the menstrual fluid. We're not shown in the standard account how the environment factors into the changing material cause however. It seems as though Aristotle is suggesting that the sun shares some agency in the reproductive process. Similarly, he mentions heat again, this time related to the moon, in *Generation of Animals*:

> Also the fact that menstruation occurs in the course of nature rather when the month is waning is due to the same causes. For this time of the month is colder and moister because of the waning and failure of the moon; as the sun makes winter and summer in the year as a whole, so does the moon in the month. This is not due to the turning of the moon, but it grows warmer as the light increases and colder as it wanes (GA IV, 2, 767a1-7).

The phases of the moon and the changing of the seasons causes the sun's impact on the external temperatures to vary, and this has an effect on the vital heat present throughout the reproductive process. As a result, males are produced more frequently in the warmer parts of the year while females are produced more in colder weather. Not only does the sun vary the temperature present in the material cause, but Aristotle also acknowledges that the food an organism eats varies the temperature too. Even something as particular as the direction the wind is blowing during copulation has an effect on the material cause:

> The shepherds also say that it not only makes a difference in the production of males and females if copulation takes place during northern or southerly winds, but even if the animals while copulating look towards the south or north; so small a thing will sometimes turn the scale and cause cold or heat, and these again influence generation (GA IV, 2, 767a8-12).

The standard Thomistic account does not draw any attention to these external efficient causes. As we saw before in the standard view, the efficient cause only seems to play a preventative role, prohibiting the formal cause from fully actualizing. But when we look into the text, Aristotle allows the efficient cause to be more than preventative. External efficient causes play a regulatory role which shifts the material cause, resulting in the formation of either a male or female.

How does this account of external efficient causation oppose the standard view and its criticism of sexism we've seen of Aristotle's biology? The standard

Thomistic account posits the male as the telos of reproduction, and anything else is thus a defective, unactualized form. This gives rise to Nielsen's Degrees of Perfection model in which there exists only one form of a species, the animal in the form of a male, and anything else is a defective, unactualized version of that one form. However, Aristotle never indicates a hierarchy of form. The Thomistic framework, not just as applied to the process of reproduction but as a whole, denies Aristotle his framework of opposites which is fundamental to his philosophy. Instead of having a form of male and a form of female, the Thomistic framework only has one form held to greater and lesser degrees of actualization. This opposes what Aristotle says in *Generation of Animals*:

> For when the first principle does not bear sway and cannot concoct the nourishment through lack of heat nor bring it into its proper form, but is defeated in this respect, then must the material change into its opposite. Now the female is opposite to the male … (GA IV, 1, 766a17-21).

Aristotle here clearly identifies the female form as existing opposite to the male form. Aristotle's framework of opposites is fundamental to his idea of ratio and proportion, and this shows up again in his theory of reproduction:

> However, [the forms of male and female] also need a certain correspondence with one another; for all things that come into being as products of art or of nature exist in virtue of a certain ratio. Now if the hot preponderates too much it dries up the liquid; if it is very deficient it does not solidify it; for the product we need the due mean between the extremes. (GA IV, 2, 767a15-20).

Aristotle never suggests that the male form is the teleological end of the reproductive process. At most he indicates that the process begins with male not because it is the final goal of some teleological process, but because the male form is included in the male's material contribution via the previously mentioned formal principle contained in the semen. It is this contribution that initiates the process. In terms of this process, the male form is prior to the female's in a temporal sense, because the male contributes what is actual - the formal principle - while the female only contributes potential. These characterizations would not then be a result of sexist attitudes, but a description of his reproductive causal process.

   In conclusion, the standard view has got it wrong. Contemporary scholars are analyzing Aristotle's causal framework from a Thomistic lens, and it is this Thomistic misinterpretation that generates the sexist criticisms that we see coming out in the recent literature. When we move away from the Thomistic tradition and

look into the text, we see that Aristotle offers a robust account of his causal framework that utilizes efficient causation within his fundamental framework of opposites, allowing for external causes to cause a shift in the material cause. Matter and form being correlatives (a shift in the material cause results in a shift in form as well) thus show that efficient causation plays more than merely a preventative role in reproduction, and avoids the mistake that the Thomistic interpretation makes in reducing final causation to the formal cause.

We can now understand external factors like the sun and food as external efficient causes playing more than just a preventative role, and instead varying the ratio of female and male elements during the reproductive process. These efficient causes then have the ability to shift the material cause towards or away from both the male or female form resulting in something regulated by temperature and not aimed specifically at the production of the male. This new framework that allows for external efficient causation moves us away from the old framework in which generates the charges of Aristotle's underlying sexism in his theory of reproduction.

First Response to Holden Hill

Natashia Gushue, *St. Francis Xavier University*

The article entitled "Efficient Causation in Aristotle's Reproductive Causal Framework" by Holden Hill investigates claims of sexism against Aristotle's theory of reproduction. Hill argues that Aristotle's theory of reproduction is not sexist because of efficient causation within Aristotle's framework of opposites and by considering the impact external causes have on shifting material causes. However, I believe even with these considerations, Aristotle's theory of reproduction is still sexist. The sexism comes from Aristotle's use of language, that opposites are only inherently equal in proportion, not value, and it is built on sexist assumptions.

Hill argues against the Thomistic account of Aristotle's theory of reproduction. He cites Generation of Animals as evidence against the claims of sexism derived from the Thomistic approach. Aristotle writes, "For when the first principle does not bear sway and cannot concoct the nourishment through lack of heat nor bring it into proper form but is defeated in this respect…. Now the female is opposite of male" (GA IV, 1, 766a17-21). The language Aristotle uses is sexist. He states "proper form" regarding male implying that female is improper. Proper as has the connotation of being better than that which is improper. Hill uses this passage to demonstrate that Aristotle regarded male and female as opposites.

Aristotle's framework of opposites is founded on his idea of ratio and proportion. Opposites are inherently equal in proportion but not necessarily in value. Take, for instance, these two examples, day and night, and good and evil. Day and night are both equal in proportion and equal in value. However, good and evil are opposites that are equal in proportion but not equal in value. Good is undoubtedly better than evil. The notion of opposites only necessarily being proportionally equal but not necessarily equal in value in conjunction with Aristotle's language usage; it is reasonable to conclude that Aristotle viewed male and female as equal in proportion but not equal in value. Thus, viewing males as better than females even though males and females are opposites.

Furthermore, Aristotle's theory of reproduction is based on a sexist assumption. Hill asserts that Aristotle indicates that the reproductive process beings with males not because of a teleological process but because the male form is prior to the female form in a temporal sense. Modern biology suggests that the reproductive process starts more female, which is why men have nipples, not male. Aristotle had no way

of knowing which sex is prior in an embryo. He assumed that an embryo must start male even though it takes both a man and woman to create a child. There is nothing inherent in watching the causal process that would insinuate that an embryo must start male; he assumed that conclusion.

In Hill's paper, he argues that Aristotle's theory of reproduction is not sexist. Yet, although I do not believe Aristotle's theory of reproduction is sexist in the way the Thomistic view suggests, it is evident that it is nonetheless sexist. I am not suggesting throwing the baby out with the bathwater. We can acknowledge that Aristotle's theory is sexist and still consider if there is anything worthwhile in the theory. Just because a theory is sexist does not mean the theory is wholly wrong. There might be something to gain through its study. However, studying the theory without acknowledging or blatantly denying sexism does not improve critical analysis or assist anyone in deciphering the truth.

COMMENTATOR

Second Response to Holden Hill

Ken Matheson, *St. Francis Xavier University*

In his essay, *Efficient Causation in Aristotle's Reproductive Causal Framework*, Holden Hill makes a sound argument in support of his thesis that contemporary criticisms of Aristotle's theory of reproduction arise from a misinterpretation of Aristotle's causal framework. Hill points to Thomas Aquinas' account of Aristotle's theory and argues that it is Aquinas and not Aristotle who is the source of the notion that the male offspring is the telos (ultimate object or aim) of reproduction, and anything else is thus a defective, unactualized form. Although I find Hill's argument sound, I think it could be more persuasive in two areas. First, if Aristotle was not postulating the male embryo as the telos of reproduction, what was Aristotle trying to explain, and second, a clearer explanation of the difference between Aquinas' account and Aristotle's.

Let us consider whether a theory of male offspring as the telos of reproduction is consistent with the rest of Aristotle's thoughts on reproduction. In his *On the Soul*. Aristotle claims that reproduction is the most natural act, the goal of which is continuation of the species. All living things seek immortality to participate in the eternal and the divine, but, as all living things have a finite lifespan, eternity is only possible if the living thing creates something like itself to continue its existence.[1] Aristotle was a biologist who based his science on observations of the natural world, and he, therefore, would know that sexual reproduction requires the collaboration of a female and male member of the species. If he were to postulate that male offspring is the telos of reproduction, then actualization of that ultimate objective would yield a species with only male members, eliminating the possibility of continuation of the species. Claiming that the goal of reproduction is continuation of the species while also claiming that male offspring is the telos of reproduction is a contradiction, and, in my opinion, it is unlikely that Aristotle intended to claim the latter.

After reading Hill's account of the Thomistic tradition, I am left with two questions:

1. When Byrne, outlining the Thomistic account, says,

---

[1] Aristotle. "On the Soul" in *The Basic Works of Aristotle*. Edited by Richard Peter McKeon. (New York: New York : Random House, 1941), II.4.415a25-415b8

The defective actualization of the formal cause causes the substance to be abnormal and vulnerable to external influences. It is the female's material deficiency that allows external causes to alter the process.

is Aquinas (or Byrne) claiming that all females are defective actualizations of the formal cause, or is he saying that conditions, that we commonly call congenital defects, are the defective actualizations? If it is the former, then Aquinas must have missed (although that seems unlikely) Aristotle's observation that male and female are opposites and sometimes the generative process actualizes one and sometimes the other. If, on the other hand, Aquinas is referring to congenital defects, then perhaps the followers of Aquinas misunderstood him, and the followers are the sources of the postulation that the male embryo is the telos of reproduction.

2. If the following quotation is, as Hill seems to suggest, the source of the notion that all females are deficient actualizations, then I suggest that the quote may be misinterpreted.

   If the generative residue in the menstrual fluids is properly concocted, the movement imparted by the male will make the form of the embryo in the likeness of itself…Thus if this movement prevail, it will make the embryo male and not female, like the father and not like the mother; if it prevail not, the embryo is deficient in that faculty in which it has not prevailed. (GA IV, 3, 767b15-24)

In other words, if the movement imparted by the male does not prevail, then the embryo is deficient in the faculty to impart movement, the faculty to produce sperm. Aristotle knew about sperm but did not know that the females of species that reproduce sexually produce ova. He seems to theorize that sperm, by its nature, causes a male embryo, however, he observes that females are born in equal numbers as males. Consequently, there must be some explanation for why the concoction process generates the opposite form from the nature of the sperm. Aristotle postulates that environmental conditions and nutrition are contributing factors, and the cited passage may merely be an expression of another condition that contributes to generation of the opposite form. In my opinion, the cited passage does not, by itself, suggest that Aristotle considered females to be defective, unactualized forms.

Works Cited

Aristotle. *The Basic Works of Aristotle*. Edited by Richard Peter McKeon. New York: New York : Random

House, 1941

ἀλήθεια