Faith and Science from a Friar's Perspective

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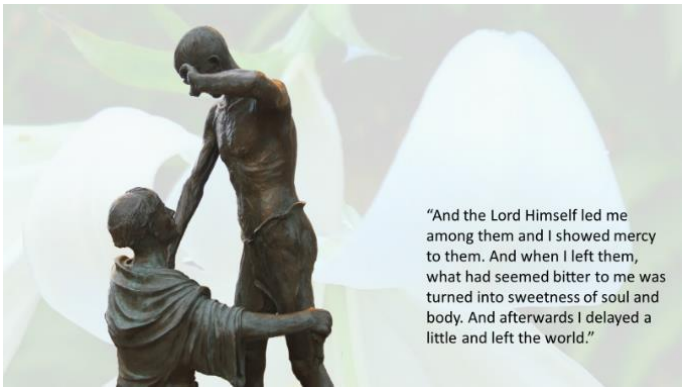
Is it still possible to speak of a worldview? To speak of everything that there is and all of God's creatures, and to claim to be able to speak of it all as if sharing from His perspective? Of course, the short answer has to be "no." Anything else would betray ignorance of the catastrophic failures of modernity and the havoc wrought by those who wanted to renew the world in their image of it. Yet, there is science, and physics in particular, and its claim to speak of all that there is—or at least all of which we can speak, all that is important. A narrative of the whole cosmos, beginning in a hot and dense singularity in the distant past and ending in a remote future of cold emptiness in which all existence has ceased, with us somewhere in the middle of it all, neither implied in the beginning nor remembered at the end. The success of science must not be denied. However, we must either rise to its challenge or yield to the disenchanted modernism of a scientistic worldview. For those like myself, people of faith who wish to engage those who do not share it, science is both a challenge and an opportunity. Science challenges us, by removing the significance of our lives from the narrative of the cosmos. But it is also an opportunity, as science reminds us that we can, in spite of it all, speak of the whole in meaningful ways. The truth, even ultimate truth, is not entirely beyond our ability to comprehend, and we have at least gotten hold of a part of it. But how does it fit into a bigger picture, one that includes the importance of our lives as human persons, in relationship with each other and with God? In this lecture, I want to draw your attention to some specifically Franciscan contributions that help us to see how the focus on the human person must remain the starting point of our understanding, including science.



My first slide depicts a very important moment in the life of St. Francis—meeting the leper. It is essential to understand this moment. Otherwise, you cannot really understand Francis and be inspired by his life.

Francis did not have a Christian worldview. Instead, his being in the world was seeing Christ. I will try to explain this in a little more detail, but I want to emphasize this right off the bat.

Maybe you object to speaking of worldviews, as if one could capture all in one of them. I agree—science, the arts, and religion each speak of the world in very different ways. However, I want to argue that there is one focal point, one center, one point of departure for all that is meaningful, and that this includes science.

I do not know how many of you share the faith of Francis and myself, the faith that sees the Word of God disclosed in the person of Christ. Irrespective of your commitment to affirming or denying this proposition, I want you to understand why the philosophical understanding of the human person must come first. Science has to remain grounded in this understanding.

This does not mean a kind of psychologism with respect to understanding science, and it does not mean questioning the self-sufficiency of science in seeking resolution of its problems. It does mean, however, that if science is not seen as building on the knowledge of the human person's original self-understanding, then it has nothing to contribute to what is of the greatest interest to us: the question of what it means to be a human person.

I consider this ordering of precedence essential for understanding the relationship between faith and science without making a mess of either or even both of them. Only when we put things in this order can we refer to science as well as faith when trying to answer the ancient philosophical question of how to live well, rather than just live. Human flourishing requires an integrated understanding of human well-being, and this requires understanding how the human person relates to the world as understood by science.

Let's return to Francis. When he reflected on his life, not long before his death, he remembered an unexpected encounter with a leper. He writes about it when he begins his testament:

"The Lord gave me, Brother Francis, thus to begin doing penance in this way: for when I was in sin, it seemed too bitter for me to see lepers. And the Lord Himself led me among them and I showed mercy to them. And when I left them, what had seemed bitter to me was turned into sweetness of soul and body. And afterwards I delayed a little and left the world."

There are different ways of seeing this encounter. The brothers of the early Franciscan movement were both working and preaching, and many of them worked in the leprosaria. This is evidence for the friars' attachment to the poor and other marginalized people. It is important, though, to take account of modern scholarship about the 13th century, which has dismissed many false assumptions about the Middle Ages.

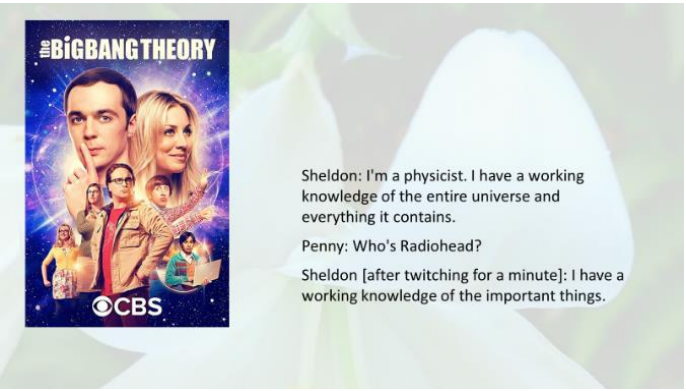
In Francis's time, leprosaria were more like monasteries than communities of the excluded. Leprosy was not yet known to be a communicable disease, and the advantages of isolation were not yet known. However, due to the disfiguring nature of leprosy, the person afflicted with the illness was seen as bearing the wounds of Christ. Through their suffering with Christ, the lepers knew themselves reconciled with God in Christ, and this made them symbols of Christ in the medieval world. Care for them was in equal measure compassionate care and religious worship, and it was very much part of the social order of those days.

For Francis, all of it came together in this moment—the encounter with Christ, showing mercy and receiving mercy, and understanding all creatures as praising God. But it was an encounter with a person,

in the recognition of a person, that his whole world made sense again.

How to make sense of the world is very much what my talk is about. When I began my own studies, late in life and after many years of studying the natural sciences, I learned about the philosophy of Thomas of Aquinas. My first encounter with it was not a happy one. It makes more sense to me now, but when I was asked to study it, at the beginning of my education as a friar, its way of thinking and looking at things was too far removed from what I had learned in the sciences. It simply did not fit. It collided with the physicalism that I had implicitly accepted in my own way of thinking. But in retrospect, this helps me today to understand what it is that we need to overcome when engaging physicalism.

I should probably clarify what I mean when I speak of science. I mean the physical sciences, or sciences that seek reducibility to physics. Sometimes, I may refer to physics or natural sciences to be more precise. My first language is German, so I am well aware that science ought to be understood more broadly, as "Wissenschaft" or the making of knowledge, wherever it can be found. But for now, since physicalism is what we are trying to engage, I will use the term science in its narrower meaning.



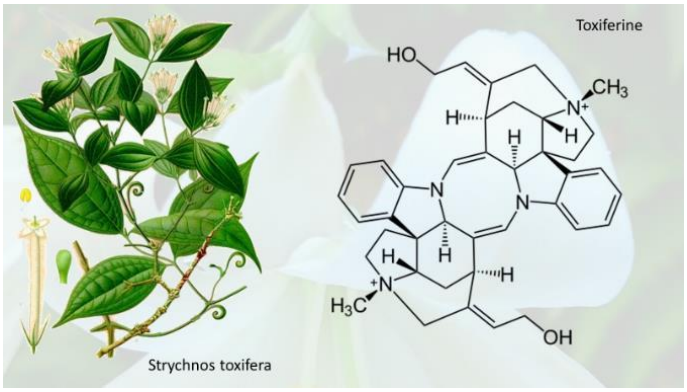
I hope that you are not scandalized to hear that I very much enjoy the Big Bang Theory—I mean the TV show, as the actual cosmological theory requires mathematical expertise beyond my training. Here is a dialogue that nicely sums up the show. Indeed, it seems to me that throughout the whole show, the running gag is physicalism's claim to speak of everything, or at least everything that is important.

Why does anybody consider physicalism a viable philosophy? At least its most naïve expressions are very easily refuted. The statement that all that is true is what is known by physics is, in itself, not a statement in physics. Permitting exclusively the addition of this statement to what is true is arbitrary. No arguments for including it, but no others are given or could be given. The statement that physicalism is true permits a discourse about whether worldviews are true or false. If one of them is true, why does it follow that there could not be 2 or 73 or infinitely many true worldviews?

There are also other and more interesting ways to critique physicalism. The one that I consider most useful is the reality of one's own existence, persisting through all kinds of changes from conception to death, while not corresponding to any entity in physics. Anyone claiming to have studied this line of reasoning before only to reject it has already lost the argument.

Here's another one: ask whether theoretical physics is merely a phenomenon within neurobiology and argue that neurobiology is actually more general and prior to theoretical physics. This, incidentally, leads to the first lovers' spat between Sheldon and Amy Farrah Fowler on The Big Bang Theory. But, of course, neurobiology presupposes the physical understanding of nature in its use of biochemistry, so it cannot come first.

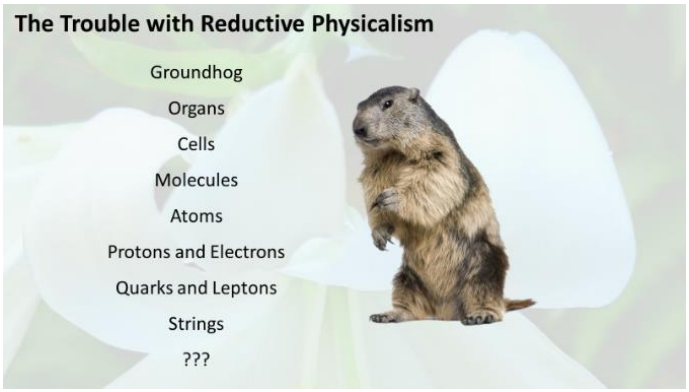
It is too easy to see that the naïve physicalism of the popular science literature is false. So, the problem must be elsewhere. The real question is why physicalism is attractive at all, and what it is that makes it an adversary that must be engaged. We have to understand this before we can make some progress in persuading people to question their attraction to physicalism.



Yet, the power of the reductionism that characterizes physicalist thought needs to be acknowledged. The picture here shows a plant, and the plant produces a powerful poison that can be used to make poisonous arrows—very useful when hunting without the benefit of firearms. Next to it is the structure of the poison. You can see a very well-defined arrangement of individual atoms. Each in its place, in accordance to the rules of chemistry, with no ambiguity whatsoever.

This is science. But how real is this depiction of the poison in the plant? Is it more or less real, or equally real as the plant and its properties and uses, known to hunters long before the poison's chemistry was analyzed?

A chemist would argue in favour of realism: one can synthesize this poison from simple and readily available components and show that the synthetic poison is just as effective as the one naturally obtained. A chemist would argue that the naturally obtained and artificially made poison are the same, and that it makes no difference how it was obtained. He would argue in this way even if the total synthesis had not been accomplished. In this view, the chemical structure speaks best about what is really real in this poison, and all else is just commentary on this reality.



This leads to a problem, and here it is. I picked a groundhog as my example, mostly because there were so many of them in a place where I spent a very enjoyable time during my novitiate: St. Bonaventure University. You can see the problem. There's the groundhog. It can be seen as nothing but the complicated consequence of the complicated arrangements of parts.

For me, as a chemist turned biochemist turned cell biologist, the middle parts are the ones that I know best. I can see how one can move upwards or downwards and see how the simple becomes the complex or the complex simple.

Chemists know how the laws about atoms determine the properties of molecules, and biochemists know how molecules build subcellular structures, and cell biologists know how subcellular structures form and govern the functioning of cells. The layers are not independent, each with its own properties and laws, but different layers of complexity of the same combination of parts.

Does this not mean that the groundhog is nothing more than the sum of its parts? This is not so easy to refute. The trouble is that what happens at one level is determined by what happens at the level below. Cell biology seeks conclusions by way of biochemistry, biochemistry by way of chemistry, chemistry by way of physics.

The hierarchical nature of these explanations and the explanatory success of this reductionism is really the problem.

Thomism did not help me at all to respond to this challenge. I do see that the forms of Thomistic Aristotelian philosophy can be applied to describe reality at various levels, such as chemistry,

biochemistry, and cell biology. Thomism can say that they all exist, each at its proper level, before they are taken up in a higher level, like building blocks in a complex assembly.

But what is accomplished by simply rearticulating the results of physical science in Thomistic language? Try to make the claim that the whole, such as the groundhog, has new emergent properties in addition to what is known on the basis of its simpler components. But, if this were true, how could it work? Reductionism is too successful.

Complex organismal behaviour, such as how a bacterium searches for food, is readily explained at the molecular level. Why should this be different for the groundhog's behaviour? There is simply no room for newness to emerge within the structure of the physical world. The most we can do is to give names as shorthand expressions for the complex combinations of parts and their properties that we observe.

The problem in responding to physicalism is the explanatory success of reductionism. It fails to have the defects that one would expect if there were also top-down causality, or the whole governing the parts. I see a stark choice while looking at this groundhog, and I cannot see how to avoid it: either accept reductionism. Or deny that physics is a true description of the specific and individual being before us.

I am arguing for the latter: deny that physics is a true description of the being before me. This, however, needs to be done with the greatest subtlety, as it is just about impossible to deny that physics gives us true knowledge of the world. We cannot dismiss it, and we cannot treat it as some kind of optional or lesser truth. Indeed, I find that the power of physics to convince everyone who studies it is powerful evidence against any kind of relativism. At the same time, the power of physics to explain observable phenomena by referring to a world far removed from human existence, such as galaxies far away or times long before human existence, is a powerful argument against idealism. The world of physics is clearly not just an idea in our mind, as it goes far beyond its confines.

So, I am in a difficult spot. But maybe you can see that I left myself some wiggle room here by distinguishing between the being before me and the world as the physical universe. I hope that this distinction will become clearer as I continue.

Rejecting reductionism should come easily, as there is something clearly missing from the reductionist picture. It is really just about impossible to deny that in the groundhog as a whole, something new has emerged. It is alive. But what does it mean that the groundhog is alive?

It apparently means a whole lot to the groundhogs, as they quickly withdrew into their burrows when I came too close. Yet, for the observer of the groundhog in its molecular details, life means nothing much, really. It is just a system of biochemical reaction cycles that remains far from equilibrium, for a while, until something goes wrong and it all breaks down. Then the groundhog is no more, maybe because it is eaten up by bugs and worms and microorganisms, and its parts become part of something else.

Life is an evident problem for those who want to affirm the truth of the physical sciences but think that they can be supplemented in some way to avoid the stark reductionist conclusions. It is an evident reality, but it corresponds to nothing new in the physical description of reality. We cannot go back to vitalism and try to claim that somewhere in there, some new and yet-to-be-discovered force awaits our discovery next to the forces that we already know. Such theories are gone for good. We need to look for another way.

Before we get there, here is the other part of the problem. Look at the strange way in which I isolated the groundhog in the earlier picture. In this picture, much less is abstracted. Actual animals in real life are always part of some ecological system.

Then there is something else that you cannot see. The groundhog or any other kind of complex animal is host to a legion of microorganisms without which it could not live. You and I, if we think of ourselves as being what is encoded in human DNA, are a minority in our own bodies. There are more bacteria in us than cells with human DNA. We, or any animal, are ecosystems. We are not just living within an ecosystem. To be what we are meant to be, we must be ecosystems within ecosystems.

There are many ways in which science is holistic. When speaking of living beings in biology, there is really only one incontestable unified whole: life as a whole on this planet. One unorthodox but very interesting way in which this thought is taken very seriously is the Gaia hypothesis. According to Lynn Margulis, it works very well to explain the evolutionary development of life. It works especially well in explaining the importance of cooperativity in the transition from simpler to more complex forms of life.

In physics are several all-embracing holisms in which the parts are entirely lost in the total. Quantum mechanics is the most radical in this respect, and this is not always appreciated. Quantum mechanics rules out speaking of individual electrons in an atom or a molecule, as chemists like to do. There is one wave function for the whole, rather than individual wave functions for individual parts. There are different kinds of particles and different kinds of assemblies of them, but there is no meaningful way to speak of individuality for one specific representative of a particle.

Even this is not entirely new, really, as even in classical physics, the future of the whole is governed by all its parts. The forces of classical mechanics have infinite reach, so no part can really be seen as being independent of the rest.

These holisms lead to the question, why is there a multiplicity of somethings rather than just everything? I find this a very important question. I think that asking it leads us to see how we can keep together a multiplicity of different ways of looking at the world, without needing to bring them into competition with each other.

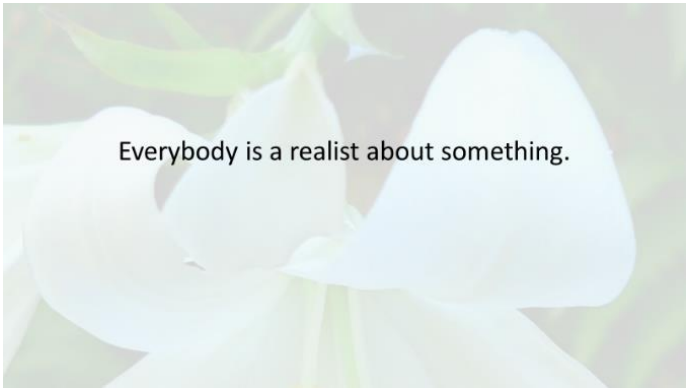
The somethings are certainly not to be found at the bottom of the physical description of the world. The search for fundamentality might continue *ad infinitum*. Even if there are truly fundamental particles to be found at the bottom, then they would have lost any individual identity once they can only be understood in terms of quantum mechanics. Science gives us an “everything” of sorts and the laws that govern it. But it really does not give us a good basis for seeing the somethings that surround us as individual beings. In the scientific description, they have lost all of their individual existence and are merely assemblies of parts and parts of assemblies.

Let us return to this picture again. There is the debris of broken wood on the ground. There are grasses and various plants with leaves. I quite doubt that you’d be able to tell me how many plants there are, or how many pieces of wood, and just think of the kind of questions one could ask about the number of entities that constitute “the ground.” The ground, clearly, is its own kind of everything—the kind of everything that I do not care to distinguish into its individual constituents, as I know very well that this is pointless. The plants, I could organize, but not count. I could count species, but not the number of exemplars of each species, as this gets pretty hard to do in plants.

Yet, we will all agree: there are four groundhogs in this picture. There are four of them (if there’s another one, it is hidden, and we won’t worry about it). And, they are all groundhogs. One sits apart, for reasons known to it alone. Maybe it needed to feel its individuality, needed to feel that it was itself, rather

than just one of four. The groundhog's psyche need not concern us. The question goes to the very depths of what we can understand of reality. There are four of them, maybe five if one is hidden, but certainly not three. And we can tell that they are groundhogs, not butterflies.

This much is clear. But it poses a very substantial problem. How can we be so sure of these simple insights about individuals and their nature? How do we know that there are individual beings of a certain kind, rather than just a whole with transient groundhog-shaped patterns emerging here or there for a little while?

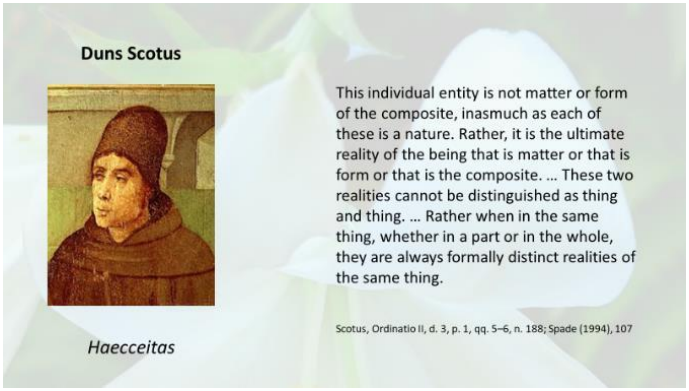


This goes to the question of what is real, and why do we say so. At this point, you may start wondering whether there are only figments of the imagination. But you will find that everybody is a realist about something. But when it comes to science, which tends to express knowledge that we should all agree on, how do we know that any of its entities are as real as the groundhogs in the previous picture?

There would be a few scientists who doubt realism in the things they observe, even if only indirectly. This becomes a challenge, though, when you think of the universe in the first second after the Big Bang. Or when you think of the world of dinosaurs or any other period on earth, long before human beings. Or subatomic particles.

In spite of their distance from human experience, the explanatory power of scientific theories is so strong that it seems absurd to question the reality of the events and entities that they imply. But, this is not so simple. The realist interpretation of science has its own presuppositions.

When we ask, "What is this thing?" then we have already made an assumption about reality: there seems to be some individual thing, and we want to know whether it is and what it is. Maybe it is a figment of our imagination; we want to rule this out. It seems obvious, but it needs to be pointed out: there is already knowledge of reality before we even think about it, and certainly before we do science.



To understand this better, it helps to go far back in time, long before modern science. I want to draw your attention to a Franciscan scholar of the Middle Ages: Duns Scotus. Born around 1266 in Scotland, he entered the Franciscan Order at a young age and became one of the Franciscans' most respected scholars. He taught in Paris but then moved to Cologne, where he died in 1308.

The medieval scholars did not worry about individuality in the way that I presented it here. The holism of the physical sciences that blurs the borders between distinct beings was unknown to them. The existence of distinct individual beings was an evident fact. What they struggled with is the question of how universals were present in individuals.

For example, in what way is the universal "groundhog" present in an individual groundhog? Are these universals real, or are they concepts of our understanding, or just words that we apply to a bundle of properties that define groups of individuals?

The medieval scholastics found it quite a logical challenge to assert realism for universals. Duns Scotus was dissatisfied with existing answers to the question of individuation, such as the solution provided by Thomas Aquinas that signate matter, or

matter considered under determinate dimensions, was the principle of individuation. I cannot go into the details of Scotus's rejection of this and other proposals, except by saying that Scotus considered it impossible that something that is changeable in the individual could be the reason for an individual's existence as an individual.

Scotus's response is to introduce the "individual entity," or what is later called "haecceitas," or "thisness." His case for this principle is complicated, and later Franciscans, such as William of Ockham, dispensed with these complications, which began a development ending in nominalism. Nominalism is the thought that the natures common to different individuals of the same kind are only names that we apply to express our understanding of what these individuals share.

But Scotus argues that the reality of an individual being is both its "thisness" and its nature. Both together form matter into the being that this individual is. So "thisness" is not a set of properties characteristic of this individual, or a variation of the shared nature. It is something that is ultimately inaccessible to specific knowledge, as it is in the individual only, not shared with any other individual. All we know of it is that it is there, as there is this individual being.

Yet, at the same time, this individual can be understood on the basis of the common nature that is really the individual before us. This common nature is understandable to us, as it is shared by all beings of this kind. It guides our response to each individual. But its unity is found fully only in our understanding of its abstraction from these individuals.

This makes a lot of sense to me. The Thomistic understanding of signate matter is very appealing to those who see mathematical physics at the bottom of reality. This is problematic, though, as mathematical physics does not provide an answer to the individuation of beings. It presupposes it and then moves it ever further to the bottom, which leads to the reductionism that questions the reality of our being. But what if we consider mathematical physics only as an abstraction from individual beings, finding its unity in describing reality as a whole, but understood only under one aspect?

What I want to understand is how we can make a distinction between reality understood by way of physics and reality as we know it by way of living it. Here seems to be a way to do so.

Duns Scotus speaks of formally distinct realities in the same thing. What he means is the reality of the "thisness," and the reality of the common nature in the same thing. The formal distinction is an expression of Scotus's argument that there must be distinctions that are not separable like two components, yet real and not just distinctions introduced by our understanding.

This is the argument that Ockham will later reject, as he sees that it can lead to logically contradictory results. Yet, what Scotus expresses takes the intuitive understanding of reality seriously. He argues that there must be unities in nature that are less than numerical unity, that are not quite one thing. For example, when two distinct beings are not the same yet similar, then they share something in reality that gives them their similarity. Differences are not all the same, and neither is all unity the same. By using the formal distinction and avoiding an all-or-nothing approach to unity, Scotus can argue for the reality and unity of the shared nature, such as the human nature shared by all of us, while also affirming the reality of its presence in each and every human being.

This should not at all be seen as some kind of philosophical mysticism. It is an attempt to use human reason to capture as accurately as possible something that is, ultimately, larger than what human reason can capture. Scotus takes us as far as one can go, using the tools of classical philosophy at his disposal.

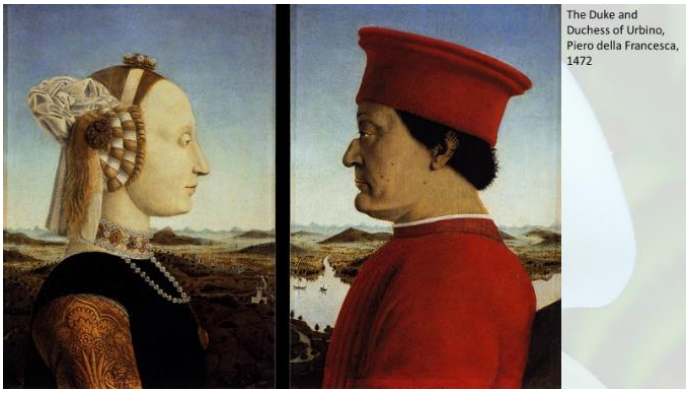
Scotus's thinking of the formal distinction between *haecceitas* and the nature of an individual being helps me to see how physics can be quite real, but that its full unity and logical consistency is found in its abstraction from real beings, rather than in them. Therefore, it is one true way of speaking of everything, or speaking of the world in a very realistic way. However, it does not exclude that there is more that can be truthfully said about an individual before me. If I say that the groundhog is alive, then the absence of this concept from the physical sciences is of no importance.

So what else is there to be learned by looking at individuals, other than to abstract our knowledge of physics from them? Our understanding of the world begins with individual beings and the distinction between them. We see the individuality of being most clearly in animals, and we can mostly see it in plants, where the distinction between individual plants can become quite difficult.

It may seem pretty obvious in trees, but considerably more complicated in grasses, mosses, and ferns. You may think that you can at least count cells, but even this gets ambiguous when you work with plasmodial slime molds, as I did for a short while at the start of my scientific career. It becomes an almost useless standard in inanimate matter, such as the ground or dead wood littered all over it. You can see how the individuality of being comes as a matter of degree, and the degree by which it is there has something to do with being a living being.

However, all our understanding is expressed in making these very clear distinctions between kinds of beings and the number of beings belonging to this kind. You really cannot do science without it. We can see it in science, but only because it is already there when we begin to do science: when we ask, "What is this?" and point, for example, to one of the groundhogs. We can ask "what is this?" and point to a rock and determine the crystal structure of its minerals, where each individual atom has its place in a lattice. Then we can point at the atom and ask, "What is this?" and the process continues.

Where does "this" come from? If science presupposes it, then science can hardly be expected to provide the answer to this question.


The Duke and Duchess of Urbino, Piero della Francesca, 1472

I discovered the significance of this question as I studied the work of the German philosopher Robert Spaemann, to whom I am very much indebted. The picture here is meant to exemplify the paradigmatic example of our relationship to reality. Self-conscious subjects know themselves to be objects of another person's knowledge. We discover both the other as an object of our subjectivity and also ourselves as the object of another's subjectivity. This understanding persuades us to become metaphysical realists. We cannot doubt our own existence any more than we can doubt our being perceived as the object of another's subjectivity.

With this, it begins. Our whole encounter with reality and our understanding of it is mediated in this way. Nothing just imprints itself on our mind like data on a hard drive. We acquire language and learn to articulate thoughts through interaction with others. We come to understand ourselves in the way we are understood by others.

In this process, we discover ourselves as real beings in the world, but we also recognize ourselves as being distinct from other beings in the world. We are aware of it. It can be a feeling of loneliness, the knowledge of never being able to fully be known by others. We cannot even properly know ourselves, as we are dependent on others for this. But it is not just loneliness, but also a feeling of relationship through the knowledge of being among beings. Some of them are persons, but there is also all else.

When we call someone a person, we express that we understand the difference between someone and something, the difference between a unique being and some vague pattern in the everything that may or may not be something. Someone is not just a

transient pattern in something else, but an individual being.

When we call someone a person, we express that we have recognized the individual being before us as one that has its own being in the same way as we have our own.

One modern philosopher who was also inspired by the work of Duns Scotus was Martin Heidegger. His understanding of "Dasein," which is German for being there or existence or being with a capital "B," begins with the awe and wonder and also the fear and trembling at the fact of knowing that we are, that we exist, and that we are given a life to live, to conduct, rather than just endure. It expresses not what we are, but that we are, and it emphasizes the wonderous fact that we exist rather than not exist. It is what the pronoun "I" points to when I say that I am, that I have a life to live.

Heidegger's Dasein is closely related to what it means to be of persons, and it is in no small part inspired by the philosophy of Duns Scotus and his understanding of *haecceitas* or "thisness." It refers to the fact of our individual existence, our knowledge of it, and our recognition of it in other human beings. It is not a property, not something separable from the rest. It is each and every one of us, each human being, understood as a being in the world that is its own and not possessed by anybody but itself.

This recognition of being leads to ethical obligations. The being of persons is a call to be recognized by other persons, and this is an ethical demand. One ought to respond.

You may recognize this symbol of the anti-slavery movement. In spite of this image's powerful impact at that time, it is now immediately recognized as troubling in a very different way. It depicts the slave as if begging for freedom, rather than demanding what is rightfully his and taking it by his own strength. Nobody likes to see themselves as a powerless supplicant.

But beyond its importance during the abolition of slavery in the British Empire, it remains a powerful depiction of the ethical demand that we encounter whenever we encounter anybody and recognize in him or her a human being and, therefore, a person. The slave is not just a slave, but like everyone who is not begging but asking the obvious question for which there can only be one answer. Of course, he is a person just like every other person. Of course, the chains he wears are evidence of a crime committed against him. He is not asking for anything. He is making a very powerful point.

It is striking that Francis, in the image with which my talk began, is depicted in a way very similar to this man. Just as Francis shows mercy, the man here shows mercy to us by pointing out our crime to us, offering us in freedom to restore right relationships with each other.

We recognize our own personhood in the encounter with the other. We further recognize that it is human beings that are the beings who are persons. Being a person has nothing to do with any property or any social convention. Instead, calling someone a person is a consequence of having understood ontology. Human being is the being in the world that calls us to be recognized as persons. Their existence is a demand, an expression of rights. At the minimum, these are not to be enslaved, not to be abused, not to be killed.

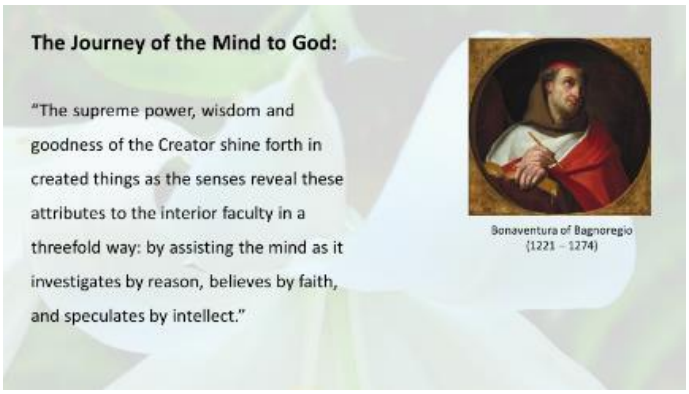
Ontology, the knowledge of being, is inseparable from ethics, or the knowledge of what to do with it all.

When I begin with the recognition of persons as the first and most important ethical demand, then the rest follows from it by way of comparing the kind of being that I am considering. I do not want to suggest that I can draw clear lines between persons and other animals, or animals and life in general, or even life and non-living matter. But you know that there are the differences of which I speak here.

The being of persons comes with special rights and obligations out of the recognition that a person possesses its being in a way that lower animals do not. My groundhog from the earlier examples is alive, but no groundhog has ever known it. The groundhog does not possess itself; its being is not the kind that can reflect on itself. But there is more to the groundhog than just a transient pattern that some atoms are forming. An animal is real as a living being, and with this come ethical demands, such as not to force upon it a life that goes against its nature.

This, incidentally, is one of the few examples where I really changed my mind fundamentally as I studied philosophy. Ten years ago, speaking of animal rights made no sense to me. Now, it does. Abusing animals and treating them as mere resources, such as in some kinds of industrial-scale animal husbandry, is unethical. It is of a much lesser degree unethical than the abuse of human persons as disposable resources, but it is unethical just the same.

You can see how this thinking about beings continues, and how it forms a gradient of decreasing obligation as we go to inanimate matter. I have tried to put words there, and you can see how this only provides guidance for discussion on what to do, rather than clear rules by which decisions can be made. Ethical acting is very much an art, and it requires a lot of practice to do it well, and it is not as clearly and unambiguously explained as science. However, I want you to see that ethical obligation and scientific understanding do not oppose each other, even as they are quite clearly independent of each other. Ethical obligations come with the understanding of what it means for something to be. Scientific understanding helps us to respond to these ethical obligations.

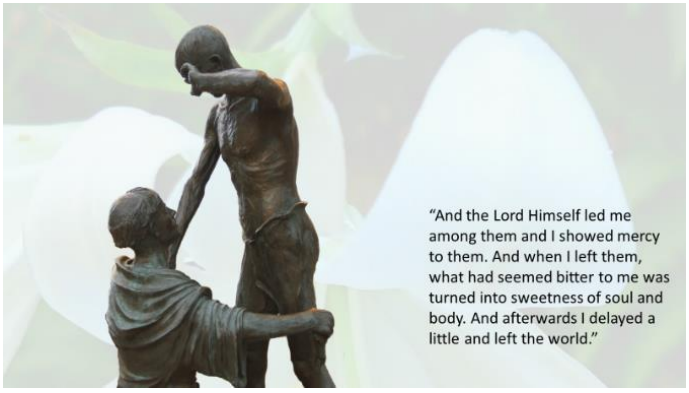


As I am getting close to the end, just a few words about another medieval Franciscan: Bonaventure of Bagnoregio. He was the Franciscan counterpart to the Dominican Thomas Aquinas, but on account of his exceptional skills in administration and diplomacy, his academic career was cut short.

He became minister general of the Franciscans and was given the task of making a proper religious order out of the messy Franciscan fraternity. And when this was done, the pope wanted him to reconcile the Orthodox churches of the East with Rome. That he was given this assignment tells you what kind of accomplishment it had been to establish order among the Franciscans. He almost succeeded at this second task, but the reconciliation that he negotiated fell apart, and he died before he could put it back together again.

The passage here is from "The Journey of the Mind to God." He wrote it while on retreat, and this little booklet has become a classic in spirituality. It is the best introduction into the contemplative dimension of the Franciscan spirituality, and our desire to be drawn into the mystery of God by the contemplation, or speculation in the language of Bonaventure, of

created beings. Reflection on the being of things has an upward movement, corresponding to the increasing degrees of being as we go from inanimate to living to personal beings. This leads to Christ, and through him, to God.



And this vision takes me back to Francis, and the image with which I started. Not a worldview, but a way of seeing in the world. Not a reduction to one way of seeing everything, as if from the divine perspective that sees all and knows. It is a different kind of reduction, a leading back to an origin, by finding the one centre of all the ways of looking at the world and finding meaning in it. Francis found Christ. If you cannot find Him in such a moment, then I pray that you can find persons in the world.

The view of Francis is a view that takes very seriously that we can only look at the world from the inside, as participants. Any worldview that attempts to speak of the whole as if looked at from the outside can only be an abstraction of what comes first: the view from the inside, within a world of personal being in which we discover each other.

You will have noticed that I have not spoken about the mind and its freedom, or purposeful acting in nature and the pursuit of goals and reaching ends. Maybe you now share my sense that it is futile to try and bring it all together in one all-encompassing worldview. Those who talk of everything end up saying nothing. There are many ways of looking at the world, such as the sciences or the arts or religion, but there is one centre, one way to access any of them: the human being, recognized as a person in the world.