

THE ROYAL FRAGMENT

The Royal Fragment of Heraclitus may be carried over into English thus:

Moderation is the greatest virtue and wisdom is to speak the truth
and to act, according to nature, giving ear thereto.¹

The Royal Fragment commands all that is most necessary in pursuing and attaining wisdom, but it is above our understanding in the brevity of its universal power.² Hence, it is necessary to divide the universal thought of Heraclitus into less universal thoughts which are more proportioned to our minds.

The chief part of the Royal Fragment is the second part which says that “wisdom is to speak the truth and to act, according to nature, giving ear thereto”.

But before this main part, Heraclitus says that “moderation is the greatest virtue”. By itself, or as a statement in ethics, these words would be a paradox to the Greeks. Is not courage, for example, which defends one’s country a greater virtue? But Heraclitus is not making a statement in ethics here. His words are joined by the conjunction *and* to the second and main part of the fragment and they must be understood in reference to the second and main part.

There are three reasons why Heraclitus begins with the words “Moderation is the greatest virtue”.

The first reason is to help us understand better what is said in the second part and also avoid a misunderstanding of what is meant there.

¹Dk 112

²Commenting on the words of the *Epistle to the Romans*, Chapter 9, v. 28, Thomas explains the connection of the two things said of the word: "...primo, ponit efficaciam evangelici verbi, dicens **Verbum enim consummans et abbrevians in aequitate**. Ubi notatur duplex efficacia evangelici verbi. Prima est, quia consummans, idest perficiens...Secunda efficacia est abbreviandi, et haec convenienter primae adiungitur, quia quanto aliquod verbum est magis perfectum, tanto est altius, et per consequens magis simplex et breve." *Super Epistolam Ad Romanos Lectura*, Caput IX, Lectio V, Marietti ed., n. 803

By the paradoxical words “moderation is the greatest virtue”, Heraclitus calls our attention to a common attribute of the three key things spoken of in the second part of the fragment. Modesty is a virtue or excellence common to wisdom, truth and nature. And this disposes us to think, not only of each by itself, but also in their connection. It is not by chance that *modest* is said of all three. If wisdom is to speak the truth about or according to nature, it is not strange that there is a reason why all three share this same virtue of modesty.

Shakespeare, the best and wisest of all poets, introduces us to the modesty of these three things in the three plays which stand at the pinnacle of his work: *Hamlet*, *King Lear* and *Macbeth*. In *Hamlet*, Hamlet advises the players thus:

o'erstep not the modesty of nature; for anything so overdone is from the purpose of playing, whose end, both at first and now, was and is to hold, as 'twere, the mirror up to nature...³

Aristotle and Newton and Einstein have pointed out that the modesty of nature is the underlying principle of all natural philosophy.

But modesty is also a virtue of truth. The noble Kent says to Cordelia in *King Lear*:

All my reports go with the modest truth,
Nor more nor clipp'd but so.⁴

The man who speaks the truth neither adds to reality by saying what is not in things is, nor subtracts from reality by saying what is in things is not. Hence, truth is a mean between two falsehoods, one of which is more than the truth (saying what-is-not is) and the other less than the truth (saying what-is is not) Hence, in *Othello*, Montano says to Iago:

If partially affin'd, or leagu'd in office,
Thou dost deliver more or less than truth,
Thou art no soldier.⁵

And in *Henry IV, Part One*, Falstaff says:

³Act III, Sc. 2

⁴Act IV, Sc. 7

⁵Act II, Sc. 3

If they speak more or less than truth, they are villains and the sons of darkness.⁶

Wisdom also is characterized by modesty. In *Macbeth*, Malcolm is careful before agreeing to join Macduff in the plan to overthrow Macbeth and he explains himself with these words:

modest wisdom plucks me from overcredulous haste⁷

And in *Henry IV, Part Two*:

But all are banish'd till their conversations
Appear more wise and modest to the world.⁸

The perfection of judgment is found in wisdom and judgment requires moderation (*Measure for Measure*:

lack of temper'd judgment⁹

This reminds one of the wise words of Friar Laurence to Romeo:

Wisely and slow: they stumble that run fast¹⁰

This explains why the wisest man of the Middle Ages could be mistakenly called by his fellow students "The Dumb Ox".

Shakespeare also touches upon this connection of nature, truth and wisdom with other words besides *modest*. In *Cymbeline*, he calls nature by another word similar in meaning to modest:

brief nature¹¹

And in speaking of wisdom (called *wit* in the older sense of the word in the following passage from *Hamlet*), he says that:

⁶Act II, Sc. 4

⁷Act IV, Sc. 3

⁸Act V, Sc. 5

⁹Act V, Sc. 1

¹⁰*Romeo & Juliet*, Act II, Sc. 3

¹¹Act V, Sc. 5

brevity is the soul of wit¹²

Shortness is the soul of wisdom. The Royal Fragment is itself an excellent example of the brevity of wisdom. But the fool, or opposite of the wise man, is characterized by tediousness. Hence, for the sake of a little joke or to avoid seeming to teach, Shakespeare puts the words that "brevity is the soul of wit" in the mouth of a man who exemplifies the opposite, Polonius, whom Hamlet has in mind when he speaks of

These tedious old fools¹³

Thus we see opposites along side each other whence they are more clear. And this connection between nature and wisdom in their brevity is emphasized by Shakespeare when he touches upon nature as partaking of some wisdom in *Cymbeline*, where he says:

wise nature¹⁴

Likewise, Shakespeare not only calls nature and truth *modest*, but also *niggard* (that is, stingy). In *Timon of Athens*, we read these words:

niggard nature¹⁵

And in the *Sonnets*, we find the same adjective applied to truth:

For you in me can nothing worthy prove;
Unless you would devise some virtuous lie,
To do more for me than mine own desert,
And hang more praise upon deceased I
Than niggard truth would willingly impart¹⁶

This reminds one of Socrates' ironic remark in the *Symposium* that he thought the purpose of their talking about love was to tell the truth about it, not to praise it as highly as they could, and Aristotle's remark that precision seems to some to be illiberal or stingy¹⁷ (as Socrates' proceeding does to Hippias in *Hippias Major*).

¹²Act II, Sc. 2

¹³*Hamlet*, Act II, Sc. 2

¹⁴Act V, Sc. 5

¹⁵Act V, Sc. 4

¹⁶*Sonnet 77*, line 4-8

¹⁷*Metaphysics* II, Chapter 3

In like manner, truth is called simple or characterized by fewness. In *Measure for Measure*, Lucio says:

Fewness and truth, 'tis thus¹⁸

And Troilus describes himself in these words:

I am as true as truth's simplicity.¹⁹

It is not by chance that the Seven Wise Men of Greece (according to Plato's account)²⁰ put up at the Oracle at Delphi the famous words, "Nothing too much".

Heraclitus also begins with the words "moderation is the greatest virtue" to guard us against a misunderstanding of the chief part of the Royal Fragment. In urging us to follow nature in the chief part of the fragment, Heraclitus does not mean that in every way or sense the natural should be followed. Our natural desires are in need of moderation. This produces a tension between the first and the second parts of the Royal Fragment, a tension we can best address when we discuss the chief part of the fragment.

The second reason why Heraclitus calls our attention to the importance of moderation in the first part of the fragment is this: there is a moral virtue which is most necessary to dispose us to see the truth of the second and main part of the Royal Fragment or to remove the chief impediment on the side of our will to accepting the truth of it. This virtue is humility. This virtue has also the form of temperance or modesty. As Henry says in the play:

In peace there's nothing so becomes a man
As modest stillness and humility²¹

Humility, as Thomas explains in the *Summa Theologiae*, is one of the virtues that shares the same mode as temperance; that is, it is a virtue which moderates our desires. As temperance moderates our sensual desires, so humility moderates our desire for excellence. But humility does so especially by subjecting or placing man under God. In Thomas' words:

¹⁸Act I, Sc. 4

¹⁹*Troilus and Cressida*, Act III, Sc. 2

²⁰*Protagoras*, 343A

²¹*Henry The Fifth*, Act I, Sc. 2

Humility however, as it is a special virtue, especially regards the placing of man under God, on account of which also one places oneself under others in humility.²²

By humility then we place ourselves under God and others on account of God or in order to God. Now if nature is something of the divine art in things by which those things are moved to a determined end, then it is humility which disposes us to accept the direction of nature. But this is what nature is, as Thomas explains in his commentary on the discussion of nature and art in the second book of Aristotle's *Physics*:

In nothing other does nature seem to differ from art except because nature is a beginning within and art is an outside beginning. For if the art which makes a ship were within the wood, the ship would have been made by nature, just as now it comes to be by art. And this is manifest most of all in the art which is in that which is moved, although by happening, as in the doctor who heals himself: nature is most of all like this art.

Whence it is clear that nature is nothing other than an account of some art, namely the divine, put into things by which those things are moved to a determined end: just as if the artist who is the maker of the ship could give to the pieces of wood that from themselves they would be moved to bring in the form of a ship²³

²²*Summa Theologiae*, Secunda Secundae, Q. 161, Art. 1, Ad 5: "Humilitas autem, secundum quod est specialis virtus, praecipue respicit subiectionem hominis ad Deum, propter quem etiam aliis humiliando se subiicit."

²³*In II Physicorum*, Lectio XIV, n. 268: "In nullo enim alio natura ab arte videtur differre, nisi quia natura est principium intrinsecum, et ars est principium extrinsecum. Si enim ars factiva navis esset intrinseca ligno, facta fuisset navis a natura, sicut modo fit ab arte. Et hoc maxime manifestum est in arte quae est in eo quod movetur, licet per accidens, sicut de medico qui medicatur seipsum: huic arti enim maxime assimilatur natura.

Unde patet quod natura nihil est aliud quam ratio cuiusdam artis, scilicet divinae, indita rebus, qua ipsae res moventur ad finem determinatum: sicut si artifex factor navis posset lignis tribuere, quod ex se ipsis moverentur ad navis formam inducendam.

So if it is by humility that we are subject to God and to others on account of God, clearly humility is necessary to dispose us to listen to nature which is something of the divine art in things.

The humility of Heraclitus is well expressed in two other fragments attributed to him. The first of these is DK 83:

The wisest man, compared to God, seems to be an ape, in wisdom and beauty and in all other things.²⁴

And in DK 79:

A man is called childish (or foolish) compared to God, just as a child compared to a man.²⁵

This same humility is found in all the great Greek philosophers and is one of the main reasons why they became wise.

But it is pride that disposes many thinkers not to listen to nature or to think that they are wiser than nature.

Perhaps the most profound and best division of philosophers and thinkers is into those who think that nature is wiser than they are and those who think that they are wiser than nature, into those who follow nature and those who do not. Of course, one should not try to be more precise than is possible with this division for it is possible to follow nature in one way and not in another.

The third reason why Heraclitus begins the Royal fragment with reference to the greatness of moderation is that the moral virtues which dispose us in the most proximate way to attain or preserve wisdom all seem to have the mode of moderation.

The Greek word which has been translated here as moderation is a sign of the proximity of temperance or moderation to practical wisdom or prudence. Aristotle notes this when speaking of prudence or foresight in the sixth book of the *Nicomachean Ethics*. Thomas expands upon Aristotle's words in commenting on them:

²⁴Heraclitus, DK 83

²⁵Heraclitus, DK 79

And he says that because foresight is about good and bad things that can be done, hence it is that temperance is called in Greek *sophrosune*, as it were “saving the mind” by which also foresight is called *phronesis*. Temperance, however, insofar as it moderates the pleasures and pains of touch, saves such an estimate, that is, which is about things that can be done which are good or bad for man. And this is clear by the contrary; because the pleasant and painful which temperance moderates, do not corrupt, that is wholly, nor pervert, by inducing the contrary, just any estimate; as for example, the theoretical one that the triangle has or does not have three angles equal to two right angles. But pleasure and pain corrupt and pervert estimates about things which can be done.

And then he shows how such corruption comes about. It is clear that the beginnings of things which can be done are ends for the sake of which are things which can be done; for as is had in the second book of the Physics, ends are in things which can be done what principles are in demonstrations. When however there is a strong pleasure or pain, it appears to man that that is best through which he attains pleasure and escapes pain; and thus the judgment of reason being corrupted, the true end which is the beginning of foresight about things which can be done does not appear to man, nor does he desire it, nor does it seem to him that it is necessary to choose and act on account of the true end, but rather on account of the pleasant.

Any badness, that is vicious habit, corrupts a beginning, insofar as it corrupts the right estimate about the end. Temperance, however, most of all prevents this corruption.²⁶

²⁶In *VI Ethicorum*, Lectio IV, nn. 1169-1170: "Et dicit quod quia prudentia est circa bona vel mala agibilia, inde est quod temperantia vocatur in graeco *sophrosyne*, quasi salvans mentem, a qua etiam prudentia dicitur *phronesis*. Temperantia autem, in quantum moderatur delectationes et tristitias tactus, salvat talem existimationem, quae scilicet est circa agibilia quae sunt hominis bona vel mala. Et hoc patet per contrarium; quia delectabile et triste quod moderatur temperantia, non corrumpit, scilicet totaliter, neque pervertit contrarium inducendo quamcumque existimationem, puta speculativam, scilicet quod triangulus habeat vel non habeat tres angulos aequales duobus rectis. Sed delectatio et tristitia corrumpit et pervertit existimationes quae sunt circa operabilia.

Qualiter autem fiat talis corruptio, ostendit consequenter. Manifestum est enim quod principia operabilium sunt fines, cuius gratia fiunt operabilia: quae ita se

Because of this close connection, Socrates can argue in the *Protagoras* that wisdom and temperance are the same more easily than that courage or justice is (practical) wisdom.

In the *Physics*, Aristotle makes the same point but includes scientific knowing:

The soul becomes knowing and prudent when it grows quiet and settles down.²⁷

Commenting thereon, Thomas notes:

The practice of the moral virtues, by which these passions are refrained, is very useful for acquiring knowledge.²⁸

But among the moral virtues that have the form of moderation in the *Secunda Secundae* of the *Summa Theologiae*, there are two or three that have a special connection with becoming wise in speaking the truth. One is studiousness which moderates our natural desire to know and another is humility which moderates our natural desire to excel. A third is mildness which moderates anger. A brief consideration of each of these in comparison to the wisdom which speaks the truth is called for here.

Since the wise man most of all knows, it would seem at first sight that he least of all needs to moderate his desire to know. However, this is a great

habent in operabilibus, sicut principia in demonstrationibus, ut habetur in secundo Physicorum. Quando autem est vehemens delectatio vel tristitia, apparet homini quod illud sit optimum, per quod consequitur delectationem et fugit tristitiam: et ita corrupto iudicio rationis non apparet homini verus finis qui est principium prudentiae circa operabilia existentis, nec appetit ipsum, neque etiam videtur sibi quod oporteat omnia eligere et operari propter verum finem, sed magis propter delectabile.

Quaelibet enim malitia, idest habitus vitiosus, corrumpit principium, in quantum corrumpit rectam existimationem de fine. Hanc autem corruptionem maxime prohibet temperantia."

²⁷247b 11-12 In Moerbeke's Latin: "in quietari enim et residere anima sciens fit et prudens"

²⁸In *VII Physicorum*, Lectio VI, n. 925: "exercitium virtutum moralium, per quas huiusmodi passiones refraenantur, multum valet ad scientiam acquirendam."

mistake. There are many things a man must know before he is able to undertake the investigation of wisdom. And if one's desire to know is not moderated and ordered, one will never get through these so as to be ready for undertaking the investigation of wisdom. Even to know the things which it is necessary to know before trying to acquire wisdom is the work of a lifetime so that if one is distracted much to the study of things which are not necessary (not to mention more frivolous things), he may never get through the necessary preliminaries to wisdom. Most thinkers in our time don't even know the liberal arts.

Humility is necessary for similar and additional reasons. No one can discover by himself all the things which it is necessary to know before one begins the investigation of wisdom. If one does not have the humility to place oneself under the direction of better and more advanced minds to learn from them, one will never get through even in a minimal way all that comes before wisdom in the order of learning. Humility also excludes pride which is the chief cause on the side of our will of mistakes and of persevering in mistakes in the pursuit of truth. For pride makes us attempt tasks beyond our strength whence we fall into mistakes. And it also makes us deaf to the words of those wiser than ourselves, words that could prevent or call us back from those errors we are so apt to fall into. Humility is also necessary for prudence, one of whose integral parts is docility whereby we learn from the advice of others.

Mildness is also required in the pursuit of truth, especially in conversation with others. How easily we are moved to anger when someone does not see a point we are trying to make and how difficult it is to be calm enough to see the element of truth that may be in the position of those who are opposing us.

We must now consider the second and main part of the Royal Fragment: "wisdom is to speak the truth and to act according to nature, giving ear thereto."

Heraclitus distinguishes between two wisdoms. *Wisdom* names the highest or greatest perfection of reason. But a thing is perfect when it has achieved its end or purpose. But the end of reason is twofold: to know the truth and to direct us in our acts. Hence, there is one wisdom by which we know and speak truth and another wisdom by which we are directed in our acts. The first wisdom is the wisdom which the philosopher, or lover of wisdom, most of all seeks. And the second wisdom is the one we all need in our lives.

But Heraclitus adds that both wisdoms are according to nature, giving ear thereto. This is what Thomas calls a *praedicatio per causam*, as when we say that understanding or sensing is an undergoing, that is, sensing and understanding are a result of the senses or reason being acted upon in some way (other than the way matter is acted upon). Heraclitus is saying that both the wisdom by which we know and speak truth and the wisdom or foresight by which we are directed in our acts are a result of following the nature to which we have humbly listened. This is a very profound and universal thought which must be divided so that we can begin to understand and judge it.

We should first consider the wisdom by which we know and speak truth, and then the wisdom by which we act wisely in our lives.

We become wise in knowing truth by listening to nature and following nature. Many today think of nature as something outside of us to be conquered. But nature in all its meanings is something within that of which it is the nature. This is why Heraclitus in another fragment says:

Nature loves to hide²⁹

What is within is hidden. And the nature of things is made known to us only by what they do or undergo due to a cause within them. We know the nature of a tree is different from that of a stone because under the very same outward circumstances of sun, rain and soil, the one grows and the other does not. But not every cause within should be called nature. Only that which is first in a thing can be called its nature. We sometimes speak of acquired habits as similar to nature, but we call them a “second nature.” Nature is first in a thing.

When Heraclitus says that we become wise in knowing and speaking the truth by listening to and following nature, he has in mind first of all the nature which is within us, not the nature of the dog or tree or stone (although he does not exclude following them in some way).

The nature within us gives rise to three things which have been and can be recognized as natural in us. And these three things are the beginnings, the necessary beginnings, of that wisdom which speaks truth. One of these is wonder which is the natural desire in all of us to know for its own sake. Another

²⁹Heraclitus, DK 123

is the natural road in our knowledge, the road from the senses into reason. And the third is the statement about contradiction, which Aristotle notes is the natural beginning of all statements in which we speak the truth.

The universal and powerful truth of Heraclitus' statement that we become wise by following nature must be judged by us after dividing it into these three less universal statements which are more proportioned to our ability to judge than the universal statement of Heraclitus. Do we become wise by following wonder, by following the natural road in our knowledge, and by following the statement about contradiction?

WONDER

That all men have a natural desire to know for its own sake, apart from any practical goal, is shown by their common delight in the use of their senses apart from the purpose of making or doing and even in opposition to what we are doing, as the one driving looks away from the road at the beautiful mountain or lake. Men also have a common natural desire to know how stories turn out, even though they have no intention of doing or making something with how the story turns out. This natural desire can be called wonder.

In the *Theaetetus*, Socrates tells us that wonder is the beginning of philosophy. Theodorus, the teacher of Theaetetus, has told Socrates, in introducing Theaetetus to him, that Theaetetus is something of a philosopher. Later in the conversation between Theaetetus and Socrates, Theaetetus is struck with wonder and this is the occasion for Socrates to comment on the connection between wonder and philosophy. Theaetetus says:

By the gods, Socrates, how greatly I wonder what these things are, and sometimes when looking at them, I am really dizzy.

And then Socrates speaks these words:

Theodorus seems to guess not badly about your nature, my friend. For this wonder is very much the undergoing of a philosopher. There is no other beginning of philosophy than this. And the one saying that Iris is the offspring of Thaumias did not

make a bad genealogy. But do you begin to see why these things are so?³⁰

And then the subject of the conversation continues. But what is remarkable from our point of view is that immediately after saying that there is no other beginning of philosophy than wonder, Socrates says something without even explaining what it means, let alone why it is true. He says, “And the one saying that Iris is the offspring of Thaumias did not make a bad genealogy.” It is as if Socrates or Plato wanted to see if we were philosophers and would wonder what this statement means; and when we know what it means, why it is true.

It is Hesiod who said that Iris is the daughter of Thaumias.³¹ If one knows a little Greek, one sees that *thaumas* is like the Greek word for wonder, *thauma*. Thaumias is then wonder personified. But why does Socrates say that it is a good genealogy to say that Iris is the offspring of wonder. Who is Iris? In the *Iliad*, Iris is both the name of the messenger of the gods and the rainbow personified. Shakespeare in the vision conjured up by Prospero for his daughter Miranda and Ferdinand (and note in passing the connection between Miranda and wonder in Latin and in the play) has Iris appear and identify herself in these words:

.....the queen o'th'sky
Whose watery arch and messenger am I³²

And Ceres in the same vision touches upon these two significations of Iris when she addresses her in these words:

Hail, many coloured messenger³³

But it is not hard to see why Iris has this double signification in mythology. It is not by chance that Iris is both the messenger of the gods and the rainbow personified. For the messenger of the gods unites man with god and the rainbow unites heaven, the place of god, with earth, the place of man.

The meaning then of the words that Iris is the offspring of wonder is that wonder unites man and God. It is not difficult to see why this is true. For

³⁰ *Theaetetus*, 155C-D

³¹ *Theogony* 780

³² *Tempest*, Act IV, Sc. 1

³³ *Tempest*, Act IV, Sc. 1, line 76

wonder, when it is intense, leads one to ask why and seek the cause. As Democritus said:

I would rather discover one cause than be master of the kingdom of the Persians.³⁴

And if the cause has a cause, wonder would lead us to seek the cause of the cause. And wonder would never be satisfied until we arrive at the first cause. And if the first cause is God, the profound meaning of Plato's saying is that wonder unites us with the first cause which is God; unites us, that is, on the side of our reason. And the wisdom which speaks the truth is most of all the wisdom that knows the first cause. For as Aristotle shows in the second book of the *Metaphysics*, the cause is more true than the effect.

No one then could ever become wise without following this natural desire which is called wonder. We can see then in a less universal statement something of the truth of the Royal Fragment. We become wise by listening to the natural desire which is wonder and following that wonder to where it leads.

When speaking of the double character of modern science, the great physicist Max Born, in his Waynflete Lectures at Oxford, says that science can be regarded as a "practical collective endeavour for the improvement of human conditions" and "as a pursuit of mental desire, the hunger for knowledge and understanding, a sister of...philosophy" and ends up with the memorable words that in science "nothing great can be accomplished without the elementary curiosity of the philosopher."³⁵ If this is true and Max Born should know (not only because of his great accomplishment for which he received the Nobel Prize, but also because he worked with Einstein and Bohr and Heisenberg and others who also made great discoveries), if nothing great can be accomplished in science without wonder, how much more so in that wisdom which is purely for its own sake.

When Thomas Aquinas is commenting on Aristotle's observation in the beginning of the *Metaphysics* that all men have a natural desire to know for its own sake, he adds another point well worth noting in the present context:

Aristotle proposes this so that he might show that to seek knowledge not useful for something else, such as is this

³⁴Democritus, DK 118)

³⁵published as *Natural Philosophy of Cause and Chance*, Dover, p. 128

knowledge, is not vain, since a natural desire is not able to be vain.³⁶

This is important so that we do not despair in achieving such knowledge. Nature is modest and does nothing in vain. Nature does not give us superfluous desires. Natural desires are for the possible. Heraclitus was right to emphasize the modesty of nature.

Einstein broke with Ernst Mach at the point where Einstein insisted on pursuing his desire to know why. And as Einstein said in another place:

whoever...can no longer wonder, no longer marvel, is as good as dead, and his eyes are dimmed.³⁷

How could Einstein have made his wonderful discoveries without wonder? And how could anyone become wise if, to use Einstein's words, his eyes were dimmed by lack of wonder?

THE NATURAL ROAD

We become wise, if we do, by following the natural road in human knowledge. The reason for this is first that the natural road is the road to wisdom. And even within wisdom, we must follow this road although not to the same extent that we do in natural philosophy. Before we can begin to understand either of these reasons, we must first understand what is the natural road in human knowledge.

Since man is by nature an animal with reason, the natural road in human knowledge is the road from the senses into reason. If wisdom is the highest or the greatest perfection of reason, the road from the senses into reason is moving in this direction. But this is more clear if we consider more fully this road, as Aristotle does in the beginning of his *Metaphysics*. What comes first along this road is sensation and after sensation comes memory of what has been sensed. And after we have sensed many times the same thing or same kind of thing and remember many of these sensations of the same, we start to

³⁶*In I Metaphysicorum* , Lectio I, n. 4: "hoc autem proponit Aristoteles ut ostendat, quod quaerere scientiam non propter aliud utilem, qualis est haec scientia, non est vanum, cum naturale desiderium vanum esse non possit."

³⁷*The World As I See It*, 1931

gather many memories of the same into one experience of the same. And after we have experience of many similar individuals, we separate out what they have in common. And this taking of what is common, the universal, is the beginning of art or science.

Now if we compare the animal that has sensation with the stone that has no sensation or awareness of its surroundings, the animal seems to be wise. But if we compare an animal that has memory with an animal that has only sensation (like those animals that are affixed to the floor of the ocean and almost seem to be plants), the animal that has memory seems wiser. My mother would say to the salesman, "I wasn't born yesterday," meaning of course that I am smarter than you think. But if we had no memory, we would be no wiser than the baby born today. When I was a boy, my cat smelled something cooking on the stove and tried to jump up there. He got singed a bit. And, you know, he never tried that trick again. He was a wiser cat from that day forward. But the man of one memory does not seem to be wise like the man of experience. We think wisdom comes with age because experience comes with age or time. And the man of art or science seems to be wiser than the man of mere experience for the man of mere experience knows only that something is so; but the man perfected in art or science knows why it is so. And everyone thinks that the man who knows why is wiser than the man who only knows that it is so. The man who knows why is more able to direct and teach others. And it belongs to the wise to teach and to direct others.

Even in this cursory way, we can see that the natural road is moving in the direction of wisdom. Hence not to follow the natural road is to miss out on the road to wisdom.

But not only is the natural road the road to wisdom, but it is also, to some extent, the road within wisdom. When the wise man studies substances, the basic things in the world, he must begin with sensible and material substances and only after studying what substance is in them, can he ascend to a study of the immaterial substances. And in studying ability and act in wisdom, we begin from ability and act as they are found in motion and only later do we ascend to the universal consideration of act and ability that enables us to see these in immaterial things and to arrive at the first cause (God) as pure act through the order of act and ability. And in general we begin from sensible effects in the long investigation of causes.

And insofar as wisdom is a reasoned-out knowledge, it must follow the common road of reasoned-out knowledge which is studied in logic. But even here we depend upon the natural road. The natural road explains why we think the way we do. For example, we give examples of a thing before we define because the senses know examples while only reason can work out a definition. And we use induction before syllogism because induction begins with singulars and through them we rise to the universal statements from which syllogism begins. Induction comes first because it begins with singulars that can be known by the senses. And we sense before we understand. As the great Boethius said, a thing is singular when sensed and universal when understood.

From the above, we can begin to see that there is no way to become wise without following the natural road or a road based on the natural road.

We become wise then by following the natural road in human knowledge as well as wonder, the natural desire to know why.

STATEMENT ABOUT CONTRADICTION

Let us turn now to the third natural thing which we must follow in order to be wise about truth, the statement about contradiction. Parmenides was perhaps the first to see the importance of the statement about contradiction. In DK 6, he says:

I hold you back...from that road along which wander two-headed mortals, knowing nothing...for whom to be and not to be are thought to be the same.

Calling those who deny (in words, at least) the statement about contradiction “two-headed mortals” is to point out how this is against nature. Only a two-headed monster, something unnatural, could think that something both is and is not. And two heads in this sense is not better than one! And when discussing the statement about contradiction in the *Metaphysics*, Aristotle notes that it is by nature the beginning of all axioms:

For it is by nature the beginning of all the other axioms.³⁸

³⁸*Metaphysics*, Book IV, 1005b 33-34

But how does one become wise to know and speak truth by following the statement about contradiction?

We should first recall that truth is almost defined by the statement about contradiction. For reason is true when it says that what is in things is and what is not in things is not; just as it is false when it says that what-is is not or what-is-not is.

But the role of the statement about contradiction in coming to know truth is much more than in understanding what truth is. The great fragment on the mind (DK 12) of Anaxagoras merited the praise of Aristotle who said that Anaxagoras seemed like a sober man among drunk men when he said that a mind is the cause of the order in natural things. (Note that Aristotle's proportion here is based on the connection between moderation and wisdom for sobriety is a form of moderation.) But there is an apparent contradiction in this great fragment of Anaxagoras. Anaxagoras says in one place that the mind is self-ruling. And indeed the existence of the art of logic is a sign that the mind is able to rule itself; for logic is the art by which reason is directed in its own act. But in the same fragment, Anaxagoras argues that the greater mind must be separated from matter because it rules over matter and the ruler must be separated from the ruled. We can see the truth of the statement that the ruler must be separated from the ruled in the army where a distinction is made between those who command and those who obey. But how can this true statement that the ruler must be distinct from the ruled be reconciled with the statement that the mind is self-ruling since the mind is not separated from itself.

Socrates touches upon the solution to this when he examined others. He found that people had mixed up what they know with what they do not know. It is necessary to separate what you know from what you do not know. For the mind should be ruled in what it does not know by what it does know. But if these two are mixed-up, as Socrates found in most people he examined, then it is impossible for their mind to be self-ruling. The key then to the mind in some way ruling itself is to separate what one knows from what one does not know. (Eventually we also separate the more known from the less known.)

But how did Socrates help us to separate what we know from what we do not know? He used the statement about contradiction. He asked questions and put together your answers. And when we were mistaken and thought we knew something we didn't know, our answers eventually contradicted each

other. Thus it is by the statement about contradiction that Socrates showed that men had mixed up what they don't know with what they do know.

In his great Dialogue, the *Parmenides*, Plato has represented Socrates as a young man, learning his method of examining others from Parmenides and his pupil Zeno. Whether this is historical or not, whether Parmenides and Zeno did or did not come to Athens and converse with the young Socrates, is not, I think, the important point. What is important to see is that the Socratic method of examining what people say to see if they know what they think they know, that method is in fact based on the statement about contradiction. The statement about contradiction enables the mind or reason to separate what it knows from what it does not know. And hence it is the statement about contradiction which alone makes possible the mind ruling itself and directing itself in coming to a knowledge of truth.

But the role of the statement about contradiction does not stop here, as if that was not enough. In knowing, two things are involved. One is to find or discover what you do not know and the other is to judge whether it is true or not.

Now as regards the first of these, discovery of the unknown, it is remarkable that the greatest minds in philosophy and in science and in theology have all pointed to the role of the statement of contradiction in discovery. Most, if not all, great discoveries in philosophy, science and theology of what was to begin with unknown to us is by seeing what seems to be a contradiction in the things we are studying, or a contradiction between things we think and what we see in the thing.

In all his philosophical works, Aristotle uses dialectic as a way of discovery. But dialectic is reasoning from probable opinions even to contradictory conclusions. Before devoting the whole of Book Three of the *Metaphysics* to a dialectical discussion of the main questions of wisdom, Aristotle give a number of reasons why it is necessary to do this:

To doubt well before is necessary for those wishing to discover. For the discovery afterwards is an untying of the difficulties before...those investigating without having first considered the difficulties are like those who do not know where they ought to

go; and, in addition, do not know if the thing sought has been found or not...³⁹

One of the scientists who worked with Bohr said:

Difficulties were for him [Bohr] merely the external appearance of new knowledge, and in an apparently hopeless contradiction he conceived the germ of wider and more comprehensive order and harmony.⁴⁰

And Einstein said in his book *The Evolution of Physics* that:

The relativity theory arose from necessity, from serious and deep contradictions in the old theory from which there seemed no escape. The strength of the new theory lies in the consistency and simplicity with which it solves all these difficulties using only a few very convincing assumptions.⁴¹

And later in the same book, Einstein says this in general about all the essential ideas in science:

Science forces us to create new ideas, new theories. Their aim is to break down the wall of contradictions which frequently blocks the way of scientific progress. All the essential ideas in science were born in a dramatic conflict between reality and our attempts at understanding.⁴²

Einstein's first metaphor of a wall of contradictions is different from Aristotle's one of a knot produced in the mind by contradictory arguments, but the idea is the same. Both prevent the mind from going forward and the breaking down of the wall or the untying of the knot is how the mind goes forward or discovers the unknown. Einstein's second metaphor of a dramatic conflict is close to Aristotle's metaphor if we recall the latter's statement in the *Poetics* that a good plot in a drama should consist of two parts: tying the knot and untying the knot. Einstein's use of the word born in the statement that "All the essential ideas in science were born in a dramatic conflict" also points to the natural basis of all discovery. (The word nature is derived from the Latin word for

³⁹Bk. III, Ch. 1, 995a 27 seq

⁴⁰*Niels Bohr, His Life and Works as seen by his friends and colleagues*, Ed. S. Rozental, Wiley & Sons, N.Y., p. 234

⁴¹p. 192

⁴²p. 264

birth.) The statement about contradiction, which only a two-headed monster could reject, is the natural beginning of all or most great discoveries.

In theology, we find the same role of the statement about contradiction. Theology developed in the Patristic period as an untying of the apparent contradictions between different passages in Sacred Scripture (even Christ led the Pharisees into an apparent contradiction from two passages in the Old Testament bearing upon Christ) or between what reason naturally knows and what is revealed. The solution of these apparent contradictions is the way a deeper understanding of the mysteries of our faith was obtained. And in the perfection of theology in the middle ages, as in the works of Thomas Aquinas, such as the *Disputed Questions* and the abbreviation of this in the *Summa Theologiae* where every article begins with bringing out some contradiction, theology as a whole unfolds before us as a resolution of these contradictions.

And the perfection of knowing truth, which is to judge with certitude that something is true, also reveals that the statement about contradiction is fundamental.

Some statements are judged to be true through other statements; some statements are known through other statements. But not every statement is known through other statements. Otherwise, no statement could be known - not even that statement.

The statements that are known through other statements are judged to be true by statements known through themselves. Examples of statements known through themselves are *a whole is larger than one of its parts* and *no odd number is even*.

But statements known through themselves all rest upon the statement about contradiction. If you know what an odd number is and what an even number is, it is obvious that no odd number is even. For something cannot both be divisible into two equal parts and not divisible into two equal parts - for that is a contradiction. To say that a whole is no greater than one of its parts is to deny that it has any other part. And this amounts to saying that a whole that has parts does not have parts which is again a contradiction.

Thus all statements known through other statements rest upon statements known through themselves. And all statements known through themselves rest upon the statement about contradiction. In that way, all

judgment with certitude of statements rests at last upon the statement about contradiction.

The wisdom then that speaks truth is a result of listening to the natural beginning of all the axioms, the statement about contradiction. For without this statement, we would hardly know what truth is; and we could not separate the truths we know from those we do not know or from our mistakes; and further without the statement about contradiction we could not discover the great statements that are unknown to us; and finally we could not judge with certitude statements to be true without the statement about contradiction.

No one then can become wise in regard to truth who does not follow nature. No one can become wise who does not follow the natural desire to know why and the natural road from the senses into reason and the natural beginning of axioms, which is the statement about contradiction. Heraclitus has spoken most truly when he said that wisdom is to speak the truth according to nature, giving ear thereto.

We can now turn to the wisdom by which we act well in this life.

Before we can see the truth of the last part of the Royal Fragment, that to act wisely is to act in accord with nature, we must consider another statement. This other statement is this: we act wisely only when reasons rules our desires and hence our acts, and rules them in accord with the purpose of man and also the purposes of his parts. We can see the truth of this latter statement by recalling what everyone knows in some way about wisdom. Everyone knows that wisdom pertains to man's reason (Hence the modern biologist calls man *homo sapiens*, the wise ape, instead of the more ancient description as the rational animal.), and that man is called wise, not because of the ignorance of his reason, but because of some knowledge in it. Everyone knows, however imperfectly, that wisdom is some knowledge of reason. Hence, a man could not act wisely unless his desires and, hence, his acts, were ruled by reason since wisdom pertains to reason. And as far as the second part of the statement ("rules them in accord with the purpose of man and the purpose of his parts"), no one can know how to use a pen or a knife if he does not know the purpose of these tools. Likewise, if one did not know the purpose of man or the purposes of his parts, one wouldn't know what to do with oneself or with one's parts. And since wisdom is knowledge, one could not act wisely or knowingly, without knowing the purpose of man and the purpose of his parts.

How could one act wisely if one didn't know what to do with oneself or with one's parts?

Having seen that one can act wisely only if reason rules one's desires and acts and only if reason rules them in accord with the purpose of man and his parts, we can now see the truth of the last part of the fragment. For reason is by nature the ruler of the desires and other parts of man and the purpose of man and also the purposes of his parts are by nature. Let us consider the reason for each of these statements.

Anaxagoras, in his great fragment on the mind (DK 17) has taught us that mind or reason is self-ruling. A sign that reason is self-ruling is the art of logic. If reason could not in some way rule itself, there would be no art of logic whereby reason directs its own acts. But we could add that reason alone is self-ruling for no other part of man knows order as such and no other part of man knows itself or even asks what it is. Hunger, for example, does not know what hunger is or the difference between hunger and thirst. And anger doesn't know that it is a desire for revenge or the circumstances in which it is suitable to be angry. Anger doesn't know how much or how little anger is suitable. But if one cannot rule oneself, one is not fit to rule others. A coward, for example, is not fit to lead other men into battle. Hence, if reason alone is self-ruling, reason alone is fit to rule others. Reason is thus the natural ruler of the desires and other parts of man.

Likewise, the purpose of man and of his parts is by nature. A thing's own act is its purpose and it is by nature that man and each of his parts has its own act.

Thus, since it is impossible for man to act wisely if reason does not direct his desires and acts in accord with the purpose of man and the purposes of his parts; and it is by nature that reason is the ruler in man, and the purpose of man and his parts is by nature; it is clearly impossible to act wisely without being in accord with nature.

But someone could object to the statement that wisdom is to act in accord with nature, giving ear thereto. Man has many natural desires and men often go astray in seeking to satisfy these natural desires. Aristotle warns us against our natural desire for sense-pleasure at the end of the second book of the *Nicomachean Ethics*. And it is not hard to see how men are often led astray by this natural desire. And Heraclitus himself in the first part of the *Royal*

Fragment insists on the importance of moderation. We cannot simply follow our natural desires wherever they may lead and expect to be wise and good. But out of this apparent contradiction (which Heraclitus himself has called to our attention by his masterful joining of the first and second parts of the Royal Fragment together), we can come to understand more clearly the truth of the chief part of the Royal fragment. This contradiction should be considered before we try to resolve it. If the wisdom by which we act well in this life is a result of listening to nature and following it, why are the natural desires in need of being moderated by reason?

In the second book of the *Nicomachean Ethics*, at the end, Aristotle is teaching us general rules about how we may acquire the moral virtues. The second rule is about what different individuals are naturally inclined to and the third rule is about what men in general are inclined to. Thomas observes about the second rule:

Men strongly tend towards those things to which they are naturally inclined. And therefore about this, a man easily goes beyond the mean. And because of this, it is necessary to drag ourselves, so far as we are able, in the contrary direction...And it should be considered here that this way of acquiring the virtues is most efficacious; that a man strives for the contrary of that to which he is inclined by nature or by custom.⁴³

And in explaining the third rule, Thomas speaks thus:

And this rule is taken from our part, not according to that which is private to each one, as has been said about the second rule, but according to that which is common to all. For all are naturally inclined to pleasures. Et therefore he says in general that those seeking virtue ought most of all to be on guard against pleasures.⁴⁴

⁴³*In II Ethicorum*, Lectio XI, Marietti ed., nn. 375-376: "Homines autem vehementer tendunt ad ea ad quae naturaliter inclinantur. Et ideo de facili circa hoc homo transcendit medium. et propter hoc oportet quod in contrarium nos attrahamus quantum possumus...Et est hic considerandum quod haec via acquirendi virtutes est efficacissima; ut, sciicet homo nitatur ad contrarium eius ad quod inclinatur vel ex natura vel consuetudine..."

⁴⁴ibid., n. 377: "Et hoc documentum sumitur ex parte nostri: non quidem secundum id quod est proprium unicuique, ut dictum est de secundo documento; sed secundum id quod est commune omnibus. Omnes enim

How can Heraclitus be right in saying that we become wise in our acts by following nature when it seems that our natural inclination as human beings to pleasure and our individual natural inclinations carry us easily into various vices; and we must bend against these natural inclinations to become virtuous?

This objection seems to contain the element of truth in the position of those thinkers, like Kant, who think that good acts have nothing to do with following nature. To be good, it seems, we must follow reason in opposition to our natural inclinations. And sometimes even Thomas would seem to speak in this way. In the *Summa Contra Gentiles*, in discussing how the heavenly bodies can influence the choices of many to the bad (although not determining them), Thomas seems to contrast those who follow their natural impulses or inclinations and the wise who resist by reason these occasions of acting badly:

But there are many who follow their natural impulses and few, namely the wise, who do not follow the occasions of acting badly and the natural impulses...

The impression of the stars reach their effect in most...not always however in this one or that one, who perhaps resists natural inclination by reason.⁴⁵

The above two objections proceed, respectively, from ignorance of what nature is and from ignorance of the distinction between nature and reason. Like all important objections, they proceed from a part of the truth. And it is here that we reach the turning point in thinking about how we should act. And nowhere do we have more need to understand the chief part of the Royal Fragment of that moderation which is the greatest virtue disposing us to see the whole truth. Humility is necessary here in two ways. Pride can make us think that the part of the truth we have seen is the whole truth and pride can prevent us from

naturaliter inclinatur ad delectationes. Et ideo dicit quod universaliter maxime debent tendentes in virtutem cavere sibi a delectationibus."

⁴⁵Liber III, Caput LXXXV: "Sed plures sunt qui impetus naturales sequuntur, pauciores, scilicet soli sapientes, qui occasiones male agendi et naturales impetus non sequuntur..."

impressio stellarum in pluribus sortitur effectum...non autem semper in hoc vel in illo, qui forte per rationem naturali inclinationi resistit..."

learning the whole truth with the help of those wiser than we are. Empedocles, one of the greatest philosophers between Heraclitus and Socrates, has spoken well of pride in respect to this first impediment. He says of most thinkers:

And having seen only a small part...and believing only that which each one meets as he is driven every way, they boast of having found the whole.⁴⁶

Boasting is one of the forms of pride, as Gregory the Great notes, and it is this form that disposes men to think that they have found the whole when they have only seen a part. But it is also pride which prevents us from learning from those who have thought more fully about what nature is and about the distinction between nature and reason. But let us turn to those who have thought more fully about what nature is and about the distinction between nature and reason.

In the second book of the *Physics* and also in the fifth book of the *Metaphysics*, Aristotle distinguished the senses of the word *nature*. And for the present difficulty, it is important to recognize that the cause of change or operation within a thing can be its matter or its form, in the genus of substance. And because a thing is natural by its matter only in ability, but through its form it is natural in act, form is more nature than matter. Thomas points out an important consequence of this in the *De Malo*:

Since form is more nature than matter, that is more natural which is natural according to form than that which is natural according to matter.⁴⁷

Hence, if man is a reasonable animal; and the genus animal is taken from what is more material and the difference reasonable from what is more formal; it is clear that if our animal nature inclines us to something pleasant to the senses, but opposed to reason in some way; we are more following nature when we follow reason than when we follow our animal nature in opposition to reason. Likewise, since our common nature is to our individual nature as form is to matter (for matter is the principle of individuation in material things), we are also following

⁴⁶DK 2

⁴⁷Q. 5, Art. 5, corpus: "Cumque forma sit magis natura quam materia, naturalius est quod est naturale secundum formam quam quod est naturale secundum materiam."

nature when we oppose what Shakespeare calls a vicious mole in our private nature than if we were to follow that vicious mole.

Kant and many others have misunderstood the distinction between nature and reason. Nature is distinguished from reason in the way that an isosceles triangle is distinguished from the equilateral triangle or the animal from man. The former are distinguished from the latter only, as Thomas says, *cum praecisione sumpta*. The isosceles triangle which is distinguished from the equilateral triangle is one which has *only* two sides equal. It is a serious mistake to make an absolute distinction between the isosceles triangle and the equilateral triangle as if the latter did not have two of its sides equal. Likewise, reason is also a nature, but not only a nature. It is one of the most serious mistakes that can be made to think that reason is not a nature because it is not just a nature. One might just as well say that man is not an animal, because he is not just an animal.

Once we have seen that form is more nature than matter and how the distinction between nature and reason is to be understood, the truth of the chief part of the Royal Fragment stands forth for all to see.

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