INTRODUCTORY NOTE TO THE BEGINNING FRAGMENTS

We should think about the wise words of the first philosophers. For they contain the seeds of wisdom. And the importance of a seed should be judged, not by its size, but by that to which it gives rise. Moreover, the one who considers something from its beginning is apt to get the best understanding of it. If, then, we consider carefully the fragments we have from the first philosophers, we shall better understand philosophy.

The "Seven Wise Men of Greece" lived in the latter half of the seventh and the first part of the sixth centuries B.C. Four of the seven were universally agreed upon: Thales of Miletus, Pittacus of Mytilene, Bias of Priene, and Solon of Athens. Thales of Miletus is generally regarded as the *first* philosopher. Pittacus of Mytilene is quoted in the *Protagoras* as having said that *it is difficult to be good.* And Bias of Priene said that *few men are good while most are bad*. Solon of Athens is so famous a lawgiver that even today we call a legislator by antonomasia a *Solon*. The earliest list, given by Plato in the *Protagoras,*[1] adds Cleobulus of Lindus, Myson of Chen and Chilon of Sparta.

Tradition or legend says that the Seven Wise Men put up at the Oracle of Delphi (which men came to consult from all over Greece) the following words for all to see:

Know Thyself

Nothing too much

Is there a reason why these two exhortations should be joined? We need to consider first the first exhortation and then consider why the second may be joined to it.

A fragment of Heraclitus of Ephesus (c. 500 B. C.) points to a connection of the two:

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[1] 343A

All men are able to know themselves and be moderate.[2]

And there is the description of the wise duke in Shakespeare's *Measure for Measure:*

> One that, above all other strifes, contended especially to know himself...a gentleman of all temperance.[3]

After a discourse on *Know Thyself*, we shall consider *Nothing Too Much*, both in itself and in connection with *Know Thyself*.

What has been called *The Royal Fragment* of Heraclitus can be considered next for it is continuous with the two exhortations of the Seven Wise Men. I say *continuous* because the first part of The Royal Fragment says that *Moderation is the greatest virtue* and this emphasizes the matter of the second exhortation *Nothing too much.*

The second and chief part of The Royal Fragment states that *wisdom is to speak the truth, and to act, in accord with nature, giving ear thereto.*

Hence, after a consideration of the two exhortations of the Seven Wise Men, we should consider The Royal Fragment which states the necessity of following nature in order to be wise in our thinking and doing.

Since the natural is *common* to all, a discourse on The Royal Fragment is reasonably followed next by the fragments of Heraclitus speaking of the necessity of following what is common.

After these, we should give and consider the fragments about the beginnings of philosophy in desire (in the will mainly, but perhaps also in the emotions). And then we need to consider the fragments on the beginnings of philosophy in our reason or in general in our knowing powers. These are the fragments on the roads and on the first statement.

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[2] Heraclitus, DK 116

[3] Act II, Sc. 2

KNOW THYSELF

According to legend, the Seven Wise Men of Greece met at the oracle at Delphi and put up these two words: *Know Thyself.* It is difficult to know oneself in part from the heart and in part from the mind. The heart makes it difficult to know oneself from excessive self-love or the disordered desire of one's own excellence. And on the side of the mind, the difficulty arises because what is most of all yourself cannot be sensed or imagined, and because you are too close to yourself, and because you lack a measure whereby to know yourself. (The perfect, says Plato, is the measure of the imperfect).

Since these words are a very wise exhortation, but said with the brevity of wisdom, it is necessary to unfold their wisdom for us dimwits. We can begin to unfold their wisdom by asking to whom these words are addressed. They are addressed to someone who is able to know himself, but does not know himself (or does not know himself well), and who should know himself.

They are addressed then to man, not to a beast or to a separated substance, like an angel or God. For the beast is not able to know himself,[1] and a separated substance knows first and most of all itself. But man is able to know himself, but does not know himself (or know himself well), and yet has great need to know himself (as we shall see).

But we could also say that these words are more addressed to the soul of man than to his body. For the body cannot know what a body is. And although the soul knows more the body than itself, it is also able to know itself. And this is very important, as we shall see.

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[1] George MacDonald, *The Princess & Curdie,* Puffin books, p. 70: "Now listen. Since it is always what they *do*, whether in their minds or their bodies, that makes men go down to be less than men, that is, beasts, the change always comes first in their hands - and first of all in the inside hands, to which the outside ones are but as the gloves. They do not know it, of course: for a beast does not know he the is a beast, and the nearer a man gets to being a beast the less he knows it."

Finally, we could say that these words are addressed especially to the reason of our soul. For this is the only part of man or of our soul that is able to know itself even though it rarely does so or hardly does so well. And the importance of this will be seen better later.

Thus, in this exhortation, we are urged to pursue a knowledge of man that is *a knowledge of man* in both senses, and a knowledge of the soul that is *a knowledge of the soul* in both senses, and a knowledge of reason that is *a knowledge of reason* in both senses (just as wisdom is the knowledge of God in both senses of *the knowledge of God* as Aristotle explains in his Proemium to Wisdom).

Socrates in the *Charmides* stretches the meaning of the exhortation of the Seven Wise Men, giving something like what is in the exhortation. Instead of a knowledge where the knower and the known are the same, he considers pursuing a knowledge which is of itself. Logic is in one way a knowledge of itself. In geometry, we define square and circle and many other things. But in logic, we define definition itself. This is in a way, but not simply, a definition and knowledge of itself. A say not simply because the definition of definition tells us in general what a definition is, whether it be of square or definition or anything else. It is not a definition of the definition of definition in particular. And in logic we make a statement about statement: a statement is speech signifying the true or the false. Again, this is a statement about statement in general. And in the *Analytics,* Aristotle seeks a reasoned out knowledge of reasoned out knowledge (in general). In the *Phaedo*, Socrates urges his friends to pursue an art about arguments, and this is logic. A knowledge of itself in this sense is before the rest of philosophy.

Having seen to whom the exhortatation of the seven wise men is addressed, the unfolding of its wisdom naturally falls into three parts.

There are many reasons why man should know himself.

It is worthwhile for man to know that he is an animal that has reason or understanding. One is knowing a little universe, a microcosm as Democritus called man. Because he is an animal with understanding, man is the highest of the animals (the crown of the material world) and the lowest of the understanding substances. He is on the horizon of the material and the

immaterial worlds whence he seems to be the universe in miniature. Thus it is worthwhile knowing what man is for its own sake.

A second reason why man should know himself is that only in this way can he know his chief good and natural end or purpose. Only when man knows himself to be an animal with reason can he know his own act and hence his own end. Knowing this end is knowing the reason for his whole life and is the starting point for all thinking about how to live so as to achieve one's natural end and therefore one's true end. Shakespeare touches upon this reason in his exhortation to use reason.

Moreover, if there is truth in Polonius' advice to Laertes:

> This above all: to thine own self be true
> And it must follow as the night the day
> Thou canst not then be false to any man.

How can one be true to oneself without knowing oneself?

A third reason why man should know himself is to recognize that he is a social animal who needs to come from a family, and live in a city, and have friends. Hence, he will see the importance of opposing whatever is contrary to the good of the family or the good of the city or to friendship.

A fourth reason why man should know himself to be an animal with reason is to come to know the first road he must follow in all his knowledge. This is the natural road in his knowledge. Since man is an animal, he has senses. But he is an animal that has reason. Hence, although what is generic comes first in time and generation so that man's knowledge begins with his senses, it does not stop there but continues into his reason which first thinks about what he senses. Thus, the natural road for man in knowing is from the senses into reason.

The above four reasons touch upon the importance and necessity of man knowing what he is – an animal with reason. But a man also needs to know himself individually, what he is by individual dispositions, by custom and by choice.

When Aristotle, in the second book of the *Nicomachean Ethics*, is giving three rules for acquiring virtue, he states that we must consider to what vice or

extreme we are individually inclined so we can bend in the opposite direction. This is one very important reason why man needs to know himself individually. The Seven Wise Men of Greece are said also to have put up the words *Nothing too much* at Delphi. How can one know how much is too much for oneself if one does not know oneself?

It is also very necessary for a man to know himself individually in order to acquire knowledge. Hesiod had given the distinction of men in regard to knowing. Some men can discover great things by themselves. (I call them the "wits".) Other men can learn these great things from their discoverers. (I call these men the "dimwits".) And some men can neither discover the great things by themselves, nor learn them from those who have. (I call these men the "nitwits".) This is a distinction repeated by Aristotle, by St. Basil, by Thomas Aquinas, by Machiavelli, and by many others. It is terrible when a dimwit thinks himself to be a wit and tries to discover by himself what he can only learn from another.

The sophist and the philosopher differ from each other by their choice of life. And moral virtue and vice are habits of choosing or with choice. Thus, it is very necessary to know what we are by choice.

Custom has an enormous influence upon what we think and how we think and how we live. Thus it is very important to know what we are by custom or what are the customs that help or hinder us in thinking and living.

Yet other reasons might be given why is it important and necessary for man to know himself, but the above is enough for now to begin to see the wisdom of the exhortation of the Seven Wise Men of Greece.

Socrates thought that not knowing yourself is next to madness:

> He (Socrates) thought that the closest thing to madness was not to know yourself and to think and assume that you know what you do not know.[2]

And Shakespeare speaks of the fool as not knowing himself:

> Ay, but that fool knows not himself.[3]

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[2] Xenophon (434 B. C - 355B.C.), *Recollections of Socrates*, Bk. 3, Ch. 9, n. 6

Hence, Socrates thought he needed to know himself before he tried to know other things:

> Socrates: I am not yet able to know myself, as the Delphic inscription says, so that it seems laughable when still ignorant of this to consider other things.[4]

And Heraclitus said:

> I have sought out myself.[5]

As we said in the beginning, this exhortation is addressed more to the soul of man than to his body. For the body cannot know itself, but the soul (of man) can know itself as well as the body. However, it is very difficult for the soul to know what it is, as we can see from the first book *About the Soul* (the *De Anima*) by Aristotle. The soul must be known through its powers or abilities. And these must be known through their acts. And these must be known through their objects. And each step in this long discourse is difficult. As Heraclitus said:

> One would not find in going the ends of the soul, having traveled every road; so deep is the reason it has.[6]

The first reason why a knowledge of the soul is necessary is to understand living bodies. For the soul is the first cause of life within such bodies.

Another reason why it is useful to know the soul and its parts or abilities is for ethics. The virtues and vices studied there are in different parts or powers

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[3] *Troilus & Cressida*, Act II, Sc. 1
[4] Plato (427B. C. - 347B.C.), *Phaedrus*, 229E-230A
[5] Heraclitus, DK 101
[6] Heraclitus, DK 45

of the soul. Hence, a full understanding of the virtues and vices requires a knowledge of the powers they perfect or pervert.

And a knowledge of the acts of reason acquired in the study of the soul is a foundation of logic. For logic is the art that directs the acts of reason. Hence, it is necessary to know these acts through a knowledge of the soul and its powers.

And a knowledge of the soul in its highest and immaterial powers (universal reason and the will) is the opening to get a glimpse of the immaterial world. For the separated substances, and God himself, have understanding and will. Without a knowledge of these higher powers of the soul, the door is closed to us of any understanding of the things better than man.

There may be other reasons why it is necessary for the soul to know itself, but the above four reasons are enough to see the great wisdom of the exhortation to know oneself.

We also noted in the beginning that this exhortation could be directed to one part of the soul in particular, our reason. For reason is the only part of the soul that can know itself.

It is good for reason to know what reason is. For reason is something godlike as Shakespeare says in his *Exhortation to Use Reason*. And it is reason that puts man above all the other animals. So reason is something noble to know for its own sake.

Moreover, we need to use reason for many reasons. But knowing what reason is helps us to use it. For we define reason by its act (just as every ability is defined by its act); and the act of reason is its use. Hence understanding what it is to use reason will help us to use reason.

Shakespeare defines reason as reason as the ability for large discourse, looking before and after. Once we see that reason is defined by order or before and after, we can distinguish the knowledge of reason by the distinction of the order which it considers. For some knowledge of reason is about an order not made by reason, such as natural philosophy is about the order made by nature. And some knowledge of reason is about an order made by reason. Thus logic is

about the order made by reason in its own acts, and ethics is about the order made by reason in the acts of our will, and the servile arts are about an order made by our reason in some kind of matter.

And once we know that reason looks before and after, we can see why wisdom, the highest perfection of reason, is especially about order. *Sapientis est ordinare* as the Philosopher teaches us in his *Proemium to Wisdom.*

Further, if we do not know what reason is, we cannot know what our soul is or what man is. And the importance of knowing the latter has already been seen.

But it is also necessary for our reason to know itself individually as well as what it is. And it was Socrates who especially pointed out and showed that most men thought they knew what they did not know. And many thinkers think they do not know what they do know. Now whether our reason thinks it knows what it does not know or thinks it does not know what it does know, in either case it does not know itself. And since the discourse of reason should go from what it truly knows to investigate what it does not know, either confusion hinders the discourse of our reason and prevents it from coming to know. Heraclitus had also seen how men make the mistake of thinking they know what they do not know:

> The many do not understand such things as they meet with, nor in learning do they know, although they seem so to themselves.[7]
>
> For the most approved knows, defends what seems; and surely justice will seize the makers and witnesses of falsehoods.[8]

APPENDIX

Socrates says (in the *Phaedrus*) that he should know himself before he tries to know others things. And in the *Charmides*, he tries to extend the exhortation to seeking a knowledge of knowledge.

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[7] Heraclitus, DK 17

[8] Heraclitus, DK 28

But can there be a knowledge of itself for man? Can there be a knowledge which is about itself?

In one sense, this seems possible and in another impossible.

Consider the definition of definition. One can not only define square and many other things, but also definition itself. But the definition of definition *is not* a definition of the definition of definition (in particular). The definition of definition is speech signifying what a thing is. And this definition can be said of the definition of square as much as of the definition of definition. Both the definition of square and the definition of definition are a definition. But definition is not what square is.

Or consider that logic is a reasoned out knowledge as well as geometry. But logic is also about what reasoned out knowledge is. Logic then is about what it is *in general*. Geometry is not about what reasoned out knowledge is even though it is one form of reasoned out knowledge. Geometry is about lines, angles and figures. Logic then is more a knowledge of itself. But not in particular.

If logic is a knowledge of what definition is and how to define and a knowledge of what reasoned out knowledge is and how it is acquired, then logic is useful in acquiring itself as well as in acquiring any other form of reasoned out knowledge. In this way, the logician resembles the wise man. He can direct others because logic is more a knowledge of itself than any other reasoned out knowledge.

Just because reason can know what reason is, and the senses and imagination cannot know what sense or imagination is, but reason can; it belongs to reason to distinguish between itself and sense and imagination, and to show the order of them to reason.

If it is true that one cannot rule others if one cannot rule oneself, and one cannot rule oneself if one does not know oneself, it would seem to follow that only what knows itself can rule others. Thus man can rule the beasts and the soul can rule the body, and reason can rule the other parts of man. But the reverse is not possible: for the beast, and the body, and the other parts of man, are not able to know themselves. Can one say also that a knowledge, which is about itself, can be used to direct other kinds of knowledge that are not about themselves? This seems to be true of logic. But is wisdom also in part a

knowledge of what wisdom is? Aristotle would seem in wisdom to distinguish wisdom from the other forms of reasoned out knowledge and all the rest of our knowledge.

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NOTHING TOO MUCH

If the Seven Wise Men put *Know thyself* before *Nothing too much*, it would seem to be because one must know oneself before one can know how much is too much. If one did not know oneself, one could not know how much is too much for oneself.[1]

The exhortation *Nothing too much* can be applied first to the exhortation *Know Thyself.* Some have thought that the end of human knowledge was for man to know himself. We find this especially among many modern thinkers.[2] To pursue knowledge of oneself as the end of man's knowledge, and therefore as wisdom, is to seek to know oneself too much. The only knowledge of self that is wisdom is God's knowledge of himself. Man is *not* wise if he is ignorant of himself, but knowing himself does not make him to be wise.

The Seven Wise Men did not urge us to love ourselves. For it is more natural to love oneself than to know oneself. We do not need to be urged to love ourself. But those who do not know themselves may not truly love themselves. Those who think themselves to be more a body than a soul or emotion more than reason, may not truly love themselves. They choose what appears to be good for the body or to satisfy the emotions rather than what perfects the soul or reason. Thomas explains this well:

> ...quilibet naturaliter seipsum amat; et ideo unusquisque amat hoc quod se esse aestimant.

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[1] But how much is too much (or too little is measured by many things: (1) the end; (2) oneself (know thyself); (3) the circumstances; and (4) by the man of experience & virtue.

Sometimes we know that it is too much; sometimes we guess that it is too much. A little too much may not be noticed or reason takes it as nothing too much.

[2] See, for example, Ernst Cassirer, *An Essay on Man*. Marx also saw man's goal in making whereby he sees himself in a world that he has made.

> Quidam autem aestimant, et vere, se esse id quod secundum intellectum sunt, quia ex hoc homo est homo; et ideo appetunt sibi ea quae sunt bona secundum intellectum et rationem vel directe vel indirecte.
>
> Quidam vero aestimant se esse quod non sunt, et falso, propter naturam sensibilem, quae exterius apparet; et ideo diligunt in se naturam sensibilem appetentes ea quae sunt secundum sensum delectabilia; et quia huiusmodi sunt mala eis et nociva secundum id quod vere sunt, ideo sibiipsis nocent, et se odiunt actu, sed non affectu.[3]

Moreover, if the common defect in knowing oneself is to know oneself too little (hence, we must be urged to know ourselves), the common defect in loving oneself is to love oneself too much. This is well put by The Poet:

> Sin of self-love possesseth all mine eye
> And all my soul and all my every part;
> And for this sin there is no remedy,
> It is so grounded inward in my heart.
> Methinks no face so gracious is as mine,
> No shape so true, no truth of such account;
> And for myself mine own worth do define,
> As I all other in all worths surmount.
> But when my glass shows me myself indeed,
> Beated and chopp'd with tann'd antiquity,
> Mine own self-love quite contrary I read;
> Self so self-loving were iniquity.
> 'Tis thee, myself, - that for myself I praise,
> Painting my age with beauty of thy days.[4]

Thus, for the defect in knowing ourselves, we are urged to know ourselves. And for the common defect in loving ourself, we are urged *Nothing too much.* But

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[3] *Scriptum Super Libros Sententiarum*, Tomus II, Distinctio XLII, Quaest. II. Art II, Ad 2

[4] Shakespeare, *Sonnet 62*

for the defect of not *truly* loving ourselves, we are urged to know ourselves as well. And this also contributes to not loving ourself too much for we see our defects, as in the above sonnet. Hence, the two exhortations solve the two defects in our self-love.

Why do the Seven Wise Men urge more *Nothing too much* than *Nothing too little?* Since there is the same knowledge of opposites and thus the brevity of wisdom can be satisfied taking just one of these two, why emphasize *Nothing too much?*

Perhaps more harm is done by too much than by too little. Although driving too slowly can cause accidents, more accidents are caused by driving too fast. More harm is done by drinking too much alcohol than too little.

Perhaps we are also inclined more to go towards too much than towards too little. This is clearly seen in the pleasures of eating and drinking and reproducing. But is not the same true as regards anger? And do men love money too much or too little? Men do not seem to be in need of being urged not to love money too little.

And if pride is the queen and root of all the vices, and pride or haughtiness is an excessive love of one's own excellence, *Nothing too much* is an exhortation that we are much more in need of than *Nothing too little*.

Sometimes we are more in need of being reminded that too much is bad than that too little is bad. Thus Shakespeare reminds us:

> They are as sick that surfeit with too much,
> as they that starve with nothing. It is no mean
> happiness, therefore, to be seated in the mean.[5]

Shakespeare's pun on the word *mean* reveals his understanding that virtue, which especially leads to happiness, is a mean between two vices:

> .....for the time I study
> Virtue and that part of philosophy
> Will I apply that treats of happiness

[5] *The Merchant of Venice*, Act I, Sc. 2

By virtue especially to be achieved.[6]

Men know that too little money is bad, but they think that an abundance of money would bring happiness.

Descartes (and he has many followers) demanded the certitude and precision of mathematics everywhere. Although it is bad to seek more or less certitude and precision than the subject admits, modern thinkers seem to be in need of being reminded more that too much is bad.

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[6] *The Taming of the Shrew*, Act I, Sc. 1

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.

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[1]Dk 112

[2]Commenting 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 abbbreviandi, 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:

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[3]Act III, Sc. 2
[4]Act IV, Sc. 7
[5]Act 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 haste[7]

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 judgment[9]

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

> Wisely and slow: they stumble that run fast[10]

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 nature[11]

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

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[6]Act II, Sc. 4
[7]Act IV, Sc. 3
[8]Act V, Sc. 5
[9]Act V, Sc. 1
[10]*Romeo & Juliet*, Act II, Sc. 3
[11]Act V, Sc. 5

brevity is the soul of wit[12]

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 fools[13]

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 nature[14]

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

niggard nature[15]

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 impart[16]

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 stingy[17] (as Socrates' proceeding does to Hippias in *Hippias Major).*

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[12]Act II, Sc. 2
[13]*Hamlet*, Act II, Sc. 2
[14]Act V, Sc. 5
[15]Act 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 thus[18]

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 humility[21]

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:

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[18]Act 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 ship[23]

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[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:

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[24]Heraclitus, DK 83

[25]Heraclitus, 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.
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> 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]

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[26]*In 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, inquantum 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

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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, inquantum corrumpit rectam existimationem de fine. Hanc autem corruptionem maxime prohibet temperantia."

[27]247b 11-12 In Moerbeke's Latin: "in quietari enim et residere anima sciens fit et prudens"

[28]*In 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 hide[29]

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

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[29]Heraclitus, 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 Thaumas 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 Thaumas 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 Thaumas.[31] If one knows a little Greek, one sees that *thaumas* is like the Greek word for wonder, *thauma*. Thaumas 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 I[32]

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

> Hail, many coloured messenger[33]

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

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[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

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[34]Democritus, DK 118)

[35]published 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

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[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 for the Latin word for

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[39]Bk. 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

[41]p. 192

[42]p. 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]

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[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..."

[44]ibid., 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

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

[45]Liber 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 that 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

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[46]DK 2

[47]Q. 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.

Duane H. Berquist

FOLLOW THE COMMON

One is apt to agree, upon first hearing it, with this fragment of Heraclitus:

> We should not act and speak like those asleep.[1]

One could understand this fragment to mean that we should not act and speak like those cut off from their senses, as are the asleep. We should follow what can be sensed. Hence, Heraclitus says in another fragment:

> The things that can be seen, heard, and learned are what I prize the most.[2]

But Heraclitus goes on in another fragment to give us a more universal meaning:

> For the waking there is one world, and it is common; but when men sleep, each one turns aside into a private [world].[3]

Heraclitus is saying more generally that those who turn aside from the one world, which is common to all of us, to a private world, are also like those who are asleep. We should not turn aside from this one common world to a private one which is to be like those asleep. Heraclitus is hinting here that truth is one and common to all who know it while the false is many and able to be private to those mistaken. Although many can share the same mistake, there are so many falsehoods that each one can have his own mistake. There is one true answer to what two plus two is and it (four) is common to all who know what two plus two is. But there can be many false answers so that everyone who is mistaken can have their own private falsehood (for example, three, five, six etc.).

Hence, in another fragment, Heraclitus urges us to follow what is common:

> Therefore, we ought to follow what is common. Although reason is common to all, the many live as if having a private wisdom.[4]

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[1]Heraclitus, DK 73

[2]Heraclitus, DK 55

[3]Heraclitus, DK 89

[4]Heraclitus, DK 2

It is difficult to unfold all that is meant by *following the common*. But we must attempt to unfold it.

Perhaps we should first consider what it does not mean. Heraclitus does not mean that we should follow the crowd. As he teaches us in another fragment:

> What mind or reason is in them? They believe the poets and take the crowd as their teacher, not knowing that "the many are bad while few are good."[5]

One is a poet by the imagination, not the senses. And the crowd is led by false imagination. And it is the imagination rather than the senses which is active when men sleep. Thus the one man who is awake is better than the many who are asleep. And Heraclitus says this:

> One man is ten thousand to me if he be the best.[6]

What then does it mean *to follow the common?* Part of its meaning is that we must follow the statements called the *axioms* and especially the first, the axiom about contradiction, which is the natural beginning of all of them. The axioms are *common* in two senses. They are common to all men. Hence, Boethius calls them the *communes conceptiones animae*. And they are about what is common to all things. Hence, Aristotle says that they all pertain to being as being, which is most common. (Hence, they are also common beginnings of all reasoning and of all reasoned out knowledge.) Parmenides, the first philosopher to speak explicitly of the axiom about contradiction and to insist upon following it, calls it common:

> It is common to me where I begin for there I shall come back again.[7]

Perhaps it is fruitful, following the advice of Heisenberg, to see where the thought of Heraclitus and Parmenides seem to come together. Heraclitus said that to think or understand is common to all

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[5]Heraclitus, DK 104 (quote is attributed to Bias)
[6]Heraclitus, DK 49

[7]Parmenides, DK 5

> Thinking [understanding] is common to all.[8]

And Parmenides said:

> For it is the same thing that can be thought [understood] and can be.[9]

Two men who understand the same thing seem to have the same understanding of it. But men who misunderstand a thing need not misunderstand it in the same way.

Another part of its meaning is that we must follow the common road in our knowledge. This is, of course, the natural road in our knowledge, the road from the senses into reason. Since every man is an animal with reason, the road from the senses into reason is common to all men. Hence, we come back again to the fragment quoted above:

> The things that can be seen, heard, and learned are what I prize the most.[10]

Empedocles also spoke of this road as the broadest road leading into the mind of man:

> It is not possible to draw God near within easy reach of our eyes, or to take hold of him with our hands, which is the broadest road of persuasion that leads into the mind of man.[11]

Perhaps we should also follow truth as a common good. If we pursue truth as a private good, we are driven from truth to falsehood. Augustine touches upon this in discussing the difficult interpretation of the words of Moses, which can be understood in more than one way, each of which says something true. Without knowing which sense or senses Moses intended, some writers wanted only their interpretation to be accepted, not because they had seen it to be the only true one, but because it was their own. In his *Confessions*, Augustine writes:

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[8]Heraclitus, DK 113

[9]Parmenides, DK 3
[10]Heraclitus, DK 55

[11]Empedocles, DK 133

Let no one now trouble me by saying, Moses thought not as you say, but as I say." For should he ask me, "Whence knowest thou that Moses thought this which you deduce from his words?" I ought to take it contentedly, and reply perhaps as I have before, or somewhat more fully should he be obstinate.

But when he says, "Moses meant not what you say, but what I say," and yet denies not what each of us says, and that both are true, O my God, life of the poor, in whose bosom there is no contradiction, pour down into my heart Thy soothings, that I may patiently bear with such as say this to me; not because they are divine, and because they have seen in the heart of Thy servant what they say, but because they are proud, and have not known the opinion of Moses, but love their own,-not because it is true, but because it is their own.

Otherwise they would equally love another true opinion, as I love what they say when they speak what is true; not because it is theirs, but because it is true, and therefore now not theirs because true.

But if they therefore love that because it is true, it is now both theirs and mine, since it is common to all the lovers of truth. But because they contend that Moses meant not what I say, but I what they themselves say, this I neither like nor love; because, though it were so, yet that rashness is not of knowledge, but of audacity; and not vision, but vanity brought it forth.

And therefore, O Lord, are Thy judgments to be dreaded, since Thy truth is neither mine, nor his, nor another's, but of all of us, whom Thou publicly callest to have it in common, warning us terribly not to hold it as specially for ourselves, test we be deprived of it. For whosoever claims to himself as his own that which Thou appointed to all to enjoy, and desires that to be his own which belongs to all, is forced away from what is common to all to that which is his own-that is, from truth to falsehood. For he that "speaketh a lie, speaketh of his Own."[12]

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[12]St. Augustine, *Confessions*, Book Twelve, Chapter 25: "Nemo iam mihi molestus sit dicendo mihi: "non hoc sensit Moyses, quod tu dicis, sed hoc sensit, quod ego dico." Si enim mihi diceret: "unde scis hoc sensisse Moysen, quod de his verbis eius eloqueris?" Aequo animo ferre deberem, et responderem fortasse, quae superius respondi vel aliquanto uberius, si esset durior.

Cum vero dicit: "non hoc ille sensit, quod tu dicis, sed quo ego dico" neque tamen negat, quod uterque nostrum dicit, utrumque verum esse, o vita pauperum, Deus meus, in cuius sinu non est contradictio, plue mihi mitigationes in cor, ut patienter tales feram; qui non mihi hoc dicunt, quia divini sunt et in corde famuli tui viderunt quod dicunt, sed quia superbi sunt nec noverunt Moysi sententiam, sed amant suam, non quia vera est, sed quia sua est.

This is connected with the distinction between speaking *from oneself* and speaking *not from oneself:*

> It has been said that some speak from themselves while some speak not from themselves.
>
> Whoever strives to speak truth speaks not from himself.
>
> For all knowledge of the truth is from another: either by way of learning, as from a teacher; or by way of revelation, as from God; of by way of discovery, as from things themselves, as is said in *Romans,* I, 20: *The invisible things of God are looked upon, being understood from the things which have been made*. Thus in whichever of these ways knowledge is had, it is not for a man from himself.
>
> He speaks from himself who takes the things which he says neither from things nor from human teaching, but from his own heart; Jeremias XXIII, 16: *They speak the vision of their own heart,* Ezechiel XIII, 3: *Woe to the foolish prophets who prophesy from their own heart.*
>
> Therefore to thus fabricate something from oneself is on account of human glory. For as Chrysostom says, who wishes to teach his own doctrine wishes this for nothing other than to acquire glory. And this is what the Lord says, proving his teaching to be from God. Who speaks from himself about the certain knowledge of truth which is from another, such a one seeks his own glory

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"Alioquin et aliam veram pariter amarent, sicut ego amo quod dicunt, quando verum dicunt, non quia ipsorum, sed quia verum est: et ideo iam nec ipsorum est, quia verum est.

"Si autem ideo ament illud, quia verum est, iam et ipsorum est et meum est, quoniam in commune omnium est veritatis amatorum. Illud autem, quod contendunt non hoc sensisse Moysen, quod ego dico, sed quod ipsi dicunt, nolo, non amo, quia etsi ita est, tamen ista temeritas non scientiae, sed audaciae est, nec visus, sed typhus eam peperit.

"Ideoque, Domine, tremenda sunt iudicia tua, quoniam veritas tua nec mea est nec illius aut illius, sed omnium nostrum, quos ad eius communionem publice vocas, terribiliter admonens nos, ut nolimus eam habere privatam, ne privemur ea. Nam quisque id, quod tu omnibus ad fruendum proponis, sibi proprie vindicat, et suum vult esse quod omnium est, a communi propellitur ad sua, hoc est a veritate ad mendacium. Qui enim loquitur mendacium, de suo loquitur. (John 8, 44)"

> because of which and because of pride, heresies and false opinions are introduced.[13]

Speaking from oneself is an effect of inane glory, which is either the same as pride, or its immediate effect.

Loqui a se, to speak from oneself, seems to be the same as *loqui ex propriis,* to speak from one's own, from what is private to oneself. And this is disastrous for the mind:

> Whoever besides God speaks from his own says what is false although not everyone who says what is false, says it from his own.
>
> God alone is speaking from his own says the truth. For truth is the enlightenment of the understanding. God however is the light itself and from him all others are enlightened, as said above I, 9: *He was the true light which enlightens every man coming into this world.* Whence also he is truth itself, and others do not say the truth except insofar they are enlightened by him. Whence Ambrose says: "Every truth by whomever it is said, is from the Holy Spirit"
>
> Thus therefore the devil when he speaks from his own says falsehood. Man also when he speaks from his own says what is false; but when he speaks from God, then he speaks the truth. *Romans* III, 4: *For 'God is truthful, but every man false*, as far as he is in himself.

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[13]Thomas Aquinas, *Super Ioannem*, VII, Lectio VII, n. 1040: "Dictum est autem aliquos loqui a se, aliquos vero loqui non a se. Loquitur autem non a se quicumque studet loqui veritatem. Omnis veritatis cognitio ab alio est: vel per modum disciplinae, ut a magistro; vel per modum revelationis, ut a Deo; vel per inventionem, ut ab ipsis rebus, ut dicitur Rom. I, 20: *Invisibilia Dei per ea quae facta sunt, intellecta conspiciuntur*. Sic ergo quocumque istorum modorum cognitio aliqua habeatur, non est homini a se. A se autem loquitur qui ea quae dicit nec a rebus nec ex doctrina humana accepit, sed de corde suo; Ier. XXIII, 16: *Visionem cordis sui loquuntur*; Ez. XIII, 3: *Vae Prophetis insipientibus qui vaticinantur de corde suo*. Sic ergo confingere aliquid a se ipso, est propter humanam gloriam: quia sicut Chrysostomus dicit, qui aliquam propriam vult instruere doctrinam, propter nihil aliud hoc vult quam ut gloriam acquirat. Et hoc est quod Dominus dicit, probans doctrinam suam a Deo esse. Qui a semetipso loquitur, de certa cognitione veritatis quae est ab alio, iste quaerit gloriam propriam propter quam et propter superbiam, haereses et falsae opiniones introducuntur."

> But not every man who says what is false speaks from his own because sometimes he takes from another - not from God who is truthful, but from him who did not stand in the truth and first introduced the false.
>
> And therefore he uniquely speaks from his own when he speaks falsely. III Kings, last 22: *I will go forth and I will be a false spirit in the mouth of all his prophets.* Isaias XXIX, 14: *The Lord mixed in*, that is permitted to mix, *in its middle the spirit of error*.[14]

Thus seduction is more said to be a leading aside from the truth which is common:

> It should be known that to seduce is to lead apart [aside] from. A man is able to be led apart from the truth or from falsehood. And in both ways someone can be called a seducer...However, he is more called a seducer who leads away from the truth and deceives because he is said to lead apart [aside] who is drawn from the common way. Truth however is a common way, but heresy and the way of the bad are certain diversions [turning aways].[15]

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[14]Thomas Aquinas, *Super Ioannem*, VIII, Lectio VI, n. 1250: "quicumque praeter Deum loquitur ex propriis, mendacium loquitur quamvis non quicumque mendacium loquitur, ex propriis loquitur. Solus autem Deus loquendo ex propriis, loquitur veritatem. Veritas enim est illuminatio intellectus; Deus autem est ipsum lumen, et ab ipso omnes illuminantur, supra I, 9: Erat lux vera, quae illuminat omnem hominem venientem in hunc mundum: unde et est ipsa veritas, et alii non loquuntur veritatem nisi inquantum ab ipso illuminantur. Unde sicut Ambrosius dicit, 'omne verum a quocumque dicatur, a Spiritu sancto est'. Sic ergo diabolus cum loquitur ex propriis, loquitur mendacium; homo etiam, cum ex propriis loquitur, mendacium loquitur; sed cum a Deo loquitur, tunc loquitur veritatem; *Rom*. III, 4: *Est autem Deus verax, omnis autem homo mendax*, quantum est in se. Sed non omnis homo qui loquitur mendacium, loquitur ex propriis, quia quandoque hoc ab alio accipit: non quidem a Deo, qui est verax, sed ab eo qui in veritate non stetit et primo mendacium adinvenit. Et ideo ipse singulariter cum loquitur mendacium, ex propriis loquitur; III Reg. ult., 22: *Egrediar et ero spiritus mendax in ore omnium Prophetarum eius*; Is. XXIX, 14: *Dominus immiscuit*, idest miscere permisit, *in medio eius spiritum erroris*."

[15]Thomas Aquinas, *Super Ioannem*, VII, Lectio II, n. 1031: "Sciendum est autem, quod seducere est seorsum ducere: potest autem homo duci seorsum vel a veritate vel a falsitate: et utroque modo potest dici aliquis seductor...Magis autem seductor dicitur qui a veritate seducit et decipit: quia ille dicitur seorsum duci qui trahitur a via communi. Veritas autem communis via est; haeresis vero et via malorum diverticula quaedam sunt."

Thomas compares heresy in theology and in philosophy:

> The name *heresy* is Greek, and implies division according to Isidore (Book VIII *Etym. c. 3*). Hence the heretical are called divisive. And because in choice there comes to be a division of one from another, choice is called *prohaeresis* in the first book of the *Nicomachean Ethics* (1094a 2)
>
> Division however happens to some part by receding from the whole.
>
> The first coming together of men is by way of knowledge because from this all others arise. Whence also heresy consists in a singular opinion apart from the common opinion. Whence also the philosophers, who had certain opinions apart from the common position of others, constituted private sects or heresies.
>
> To the ninth it should be said that those who fabricated a new heresy sought some advantage, at least rule. For they wished to have followers.
>
> And that they depart from the common way by lightness or perversity of soul proceeds in all from pride, which is the love of one's own excellence.[16]

But Heraclitus added to the words about following the common a reference to reason:

> Although reason is common to all, the many live as if having a private wisdom.[17]

Another fragment connects with this thought:

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[16]Thomas Aquinas, *Scriptum Super Lib. IV Sententiarum* , Distinctio XIII, Questio II, Art 1, Responsio & Ad 9: "...nomen haeresis graecum est, et divisionem importat secundum Isidorum (lib. VIII *Etym.*, c. 3) Unde et haeretica divisiva dicuntur. Et quia in electione fit divisio unius ab altero, electio *prohaeresis* dicitur in I *Eth.* (1094a 2). Divisio autem contingit alicui parti per recessum a toto. Prima autem congregatio quae est in hominibus, est per viam cognitionis, quia ex hac omnes aliae oriuntur. Unde et haeresis consistit in singulari opinione praeter communem opinionem. Unde et philosophi qui quasdam positiones habebant praeter communem sententiam aliorum, sectas vel haereses proprias constituebant. Ad nonum dicendum quod illi qui haeresim confingunt de novo, constat quod aliquod commodum exspectant, saltem principatum: volunt enim habere sequaces. Hoc etiam in omnibus ex superbia procedit quae est amor propriae excellentiae, quod a communi via discedunt animi levitate aut perversitate."

[17]See DK 2 above.

> It is wise, listening not to me, but to reason, to agree that all things are one.[18]

To follow reason and to listen to reason seem to be almost the same. Or perhaps it could be said that we can follow reason only by listening to reason or after we have listened to reason. Sometimes we say in daily speech about someone that "he won't listen to reason". We do not say that he won't listen to *my reason*, but that he won't listen to *reason*. But what does this mean? Is there a reason other than my reason, your reason and the next man's reason? To listen to reason means to listen to what is common to my reason, your reason and the next man's reason. Someone might object to Heraclitus, asking why he speaks to us if he does not want us to listen to him, but to reason. But he is telling us to listen to him only insofar as he is listening to and following reason. In the same way, the saints might say: "Imitate not me, but Christ". But this does not preclude imitating the saints insofar as they imitate Christ.

In one other fragment, Heraclitus insists upon the importance of being strong in what is common to all:

> Those who speak with understanding must be strong in what is common to all, as much as a city is strong in its law, and even more so. For all human laws are fed by one divine law which governs as far as it wishes and is more than sufficient for all.[19]

The elevation and universality of Heraclitus' thought here is almost unbelievable. We can come up to an understanding of it, not entirely unworthy of it, only by dividing it.

First, "Those who speak with understanding" can be understood in general for those who understand in any matter or it can be taken by antonomasia for the wise. Since wisdom is the highest or greatest perfection of reason, and the perfection of reason is not in its thinking but in its understanding, clearly the wise most of all understand. Hence, Boethius said that wisdom proceeds *intellectualiter.*

If we consider "Those who speak with understanding" antonomastically for the wise, then it is most true that they "must be strong in what is common

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[18]Heraclitus, DK 50)
[19]Heraclitus, DK 114

to all." But to see this, we must here divide the thought expressed by the words "common to all".

The words *common to all* can be divided into common *to all things* or common *to all men*. In both senses, the wise must be strong in what is common to all.

Wisdom is about what is common to all things in both ways that something can be common to all things. Something can be common to all things in the sense that it can be *said of* all things, or in the sense that it is a *cause of* all things. Wisdom, as Aristotle shows in his proemium to wisdom in the beginning of the *Metaphysics*, is both about what is said of all things (*being* and *one* as we find out later in Book Four) and the first cause, which is the cause of all things. And the first part of becoming strong in what is common to all things is to see that these are not the same, as Hegel and others have made the mistake of thinking. What is said of all is *not* the cause of all. Thomas distinguishes these two ways of being common in many places. For example:

> But other is the commonness of the universal and the cause. For the cause is not said of its effects because the same is not a cause of itself. But the universal is common as something said of many; and thus it is necessary that it be in some way one in many, and not subsisting by itself apart from them.[20]

The wise man is also strong in what is common to all men pertaining to knowing. All men by nature desire to know. But the strength of the wise man in this desire is well expressed by Democritus in one of his fragments:

> I would rather discover one cause than be master of the kingdom of the Persians.[21]

But the wise man must also be strong in the common road of man which is the road from the senses into reason. (This is the common road of men because they are all by nature animals with reason.) For this is the road to wisdom, as Aristotle also shows in the Proemium to Wisdom at the beginning of his *Metaphysics.* And, as Aristotle shows in the fourth and fifth books of the *Metaphysics*, the wise man must also be strong in the axioms which are common to all men.

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[20]Thomas Aquinas, *In X Metaphysicorum*, Lectio III, n. 1964
[21]Democritus, Dk 118

Thus, in five ways at least, the wise, or those who most of all speak with understanding, must be strong in what is common to all.

But we can also take "Those who speak with understanding" in general, wherever men try to understand.

If the first beginnings of our knowledge are common to all men, and we come to know other things through these first beginnings, then it is necessary to become strong in these common beginnings so as to understand what follows from them. Thus those who speak with understanding must be strong in what is common to all. The man who is weak in the beginnings does not see what follows from them, or what is in agreement, or disagreement, with them.

There are also beginnings common to all men in a particular knowledge. (By *particular knowledge,* we mean knowledge whose subject is not most universal, as is the subject of wisdom.) For every reasoned out knowledge has its own road and beginnings about the things private to it. These are common to all those pursuing that knowledge.

But Heraclitus also seems to touch upon a comparison between the life of the mind which is ordered to understanding and the life of the city. Since man is by nature a social animal, both the life of his mind as well as his daily life is with other men. But it is not possible for men to live together in the same city without common laws. Likewise, the life of the mind together is not possible without some common beginnings. This can be seen in the conversations ordered to knowing.

In the conversation of the teacher and the student, the teacher should lead the student to know what he (the student) does not know through things which the student already knows. In that way, learning is recalling (not what you learn, but that through which you learn). But if the student can come to know what he does not know through what he does know, why does he need a teacher? The teacher knows things which the student does not know yet. But the teacher, as has been said, must lead the student through things the student knows already. In order to do this, the teacher must also know these same things. They are *common* to the teacher and the student. But the student does not yet see what follows from these things. But the teacher does. Hence, the teacher is stronger in what is common to himself and the student. If the student were to come to know these things by himself, he would have to be himself strong in what is common.

But in other conversations, where one man does not clearly know something of which the other is clearly ignorant, and which are more a common investigation, there is frequent disagreement. When two men disagree, each can say the other is mistaken because he disagrees. But such a disagreement cannot be resolved without finding something common to both by which they can decide who is right. Thus two scientists may have opposite hypotheses, but they need a common experiment to decide. If their hypotheses predict different results in the same experiment which they can both perform and see the same results, they may be able to decide between their hypotheses. But it is by something common to them.

But sometimes, some men may agree about something and others, on the opposite of this. And this, as Heraclitus teaches us, is like the laws commonly observed in one city being opposed to those in another city. The citizens of one city cannot say that the laws of the other city are bad because they disagree with theirs. For the citizens of the other city might make the same claim. One would have to have recourse to something more common, such as the divine or natural law. Likewise, then, in the life of the mind. One must be strong, not just in the opinions shared by one's group, but in those shared by all men. And this would be what is naturally understood by all men. Heraclitus then is saying that those who speak with understanding must be strong in what is naturally understood by men. Hence, the wise man most of all understands because he distinguishes the senses of the words in the axioms naturally known by all men and shows their order and defends the axioms against sophistical attacks.

When Heraclitus urges us to follow what is common to all men, are we to understand only what is *actually* common, or also what is *able to be* common.

In the beginning, we can follow what is actually common. But as we go forward, we must follow also what is able to be common. Euclid begins the *Elements* with some things that are actually common to all men. But the things we can see from these (after we have become strong in them) are not actually seen by all men since they have not become strong in what is actually common. But we come to know what is able to be common through what is actually common after one has become strong in the latter. The things which are able to be common are actually understood only by those who have becomes strong in what is actually common.

As we go forward in the knowledge which depends upon experience, we come to knowledge which depends upon private experience. Private experience should be distinguished from common experience. *Common* experience is the experience which all men have and cannot avoid having. All men have experienced change, place and time, whole and part, pleasure and pain, and many other common things. They cannot avoid having some experience of these things. *Private* experience is the experience which only some men have. It may be acquired by chance or prolonged observation or by experiment or by some other means. Would Heraclitus urge us not to pursue such knowledge because it is based on private experience? If Heraclitus were to urge this, he would be opposed to experimental science as well as many other kinds of knowledge. However, it is necessary here to distinguish again between what is actually common and what is able to be common. In one of his essays, the famous physicist Schrödinger states the following about the experiments the scientist will follow and those which he will not follow:

> We may readily grant that a physical experiment, say, for simplicity's sake, a counting of stars, is independent of the question whether it is carried out by Mr. Wilson in New York or Fräulein Mueller in Berlin. The result will always be the same, provided of course that the requisite technical conditions are fulfilled. The same is true of all established experiments in Physics.
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> The first and indispensable condition that we demand of any process of experiment before it can be admitted into the regular procedure of physical research is that it will invariably reproduce the same results. We do not consider an experiment worthy of scientific consideration or acceptance unless it can fulfill this condition.[22]

Before an experiment should be followed in physics, it must be *able to be reproduced with the same results.* When a number of competent scientists have performed the same experiment and gotten the same results, the scientist takes this as a sign that it is *able to be reproduced with the same results.* If the experiment is not able to be common in this way, it will not be followed by the scientist. Thus, even the scientist is following the common so far as possible. He is not able to follow what is *actually* common to all men. But he follows what is *able to be* common. It is, of course, better to follow what is actually common than what is able to be common, but we could not go very far if we stayed with

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[22]Erwin C. Schrödinger, *Science , Theory and Man.* Dover Publications Inc., N. Y. , "Is Science a Fashion of the Times?", pp. 84-85

what is actually common, or what immediately follows from or can be seen from just what is actually common. Thus, Aristotle follows Heraclitus when he finds a common basis about change actually shared by all the natural philosophers in Book One of the *Physics* and later in the same book a common basis shared by all men about becoming. But he cannot continue to always find a common basis that is actually common. Hence, one must go on to the next best which would be something common in some qualified way, as he says in the *Eudemian Ethics:*

> For it would be best if all men were seen to agree with what has been said; but if not, in some way all.[23]

Duane H. Berquist

[23] *Eudemian Ethics*, Book One, 1216b 27 - 30

BEGINNINGS OF PHILOSOPHY IN THE WILL AND EMOTIONS

REMOTE DISPOSITION: LOVE OF THE BEAUTIFUL

One should not choose every pleasure, but only that concerned with the beautiful. (Democritus, DK 207)

The things that can be seen, heard, and learned are what I prize the most. (Heraclitus, DK 55)

What a poet writes when possessed and inspired by the gods is most beautiful. (Democritus, DK 18)

Homer, obtaining by fate a divine nature, built a cosmos of all kinds of verse. (Democritus, DK 21)

It belongs to a divine mind to think always of something beautiful. (Democritus, DK 112)

WONDER AND HOPE OF COMING TO KNOW & FEAR OF MISTAKE

THE DESIRE IN WONDER

I would rather discover one cause than be master of the kingdom of the Persians. (Democritus, DK 118)

THE HOPE IN WONDER

Good things hardly come to those seeking while bad things come even to those not seeking. (Democritus, DK 108)

THE FEAR OF MISTAKE IN WONDER

Let us not guess at random about the greatest things. (Heraclitus, DK 47)

But gods, turn away from my tongue the madness of those men, and from pious mouths guide forth a pure stream. And you, much wooed, white-armed, virgin Muse, I pray to hear such things as

are lawful for creatures of a day to hear; send me from piety driving the obedient chariot. Nor shall the flowers of honor from mortals force you to say boldly more than is pious and to move quickly to the heights of wisdom... (Empedocles, DK 3)

THE LOVE OF WISDOM

Imperturbable wisdom is worth everything. (Democritus, DK 216)

Men who love wisdom must inquire into very many things. (Heraclitus, DK 35)

Pythagoras, the son of Mnesarchus, practiced enquiry beyond all men; and selecting these writings he called them his own wisdom; which was only a knowledge of many things, and bad art. (Heraclitus, DK 129)

Those who seek for gold dig up much earth and find a little. (Heraclitus, DK 22)

Wisdom is one thing. It is to understand the mind by which all things are steered through all things. (Heraclitus, DK 41)

To a wise man, the whole earth is open; for the fatherland of a good soul is the whole universe. (Democritus, DK 247)

BEING TEACHABLE AND A GOOD STUDENT

NECESSITY OF BELIEF AND LEARNING FROM OTHERS

Most of what belongs to the gods escapes being known through lack of belief. (Heraclitus, DK 86)

Neither art nor wisdom is easy to reach if one does not learn. (Democritus, DK 59)

WHOM TO BELIEVE

What mind or reason is in them? They believe the poets and take the crowd as their teacher, not knowing that *the many are bad while few are good.* (Heraclitus, DK 104) (quote is attributed to Bias)

No one is able to be a great poet without madness. (Democritus, DK 17)

One man is ten thousand to me if he be the best. (Heraclitus, DK 49)

In Priene was born Bias, son of Teutamos, who is of more account than the rest. (Heraclitus, DK 39)

Remember the man who forgets which way the road leads. (Heraclitus, DK 71)

DIFFICULTY & IMPEDIMENTS TO BELIEVING THOSE WHOM WE SHOULD BELIEVE

Friends, I know the truth is in the words which I shall speak; but it is very hard for men and they are exceedingly jealous of the force of belief on their minds. (Empedocles, DK 114)

The one advising him who thinks he has understanding labours in vain. (Democritus, DK 52)

Dogs bark at everyone they do not know. (Heraclitus, DK 97)

It would be right for all the Ephesians above age to strangle themselves and leave the city to those below age; for they cast out Hermodorus, the best man among them, saying “Let no man among us be the best; if there is one, let it be elsewhere and among others.” (Heraclitus, DK 121)

BEING A GOOD STUDENT

HOW TO LISTEN

[Reproving some who did not believe] Knowing neither how to listen, nor how to speak. (Heraclitus, DK 19)

To say all, but wish to hear nothing, is arrogance. (Democritus, DK 86)

He who contradicts and chatters much is naturally unfit for learning what he should. (Democritus, DK 85)

Those without understanding when they hear are like deaf men; of them does the saying bear witness that they are absent when present. (Heraclitus, DK 34)

A stupid man is excited by every word. (Heraclitus, DK 87)

Knowing the arrangement, they listen. (Antiphon, DK 63)

Come, I will speak and you listen and carry away my word... (Parmenides, DK 2)

STABILITY - SOUND SENSE

The dry soul is wisest and best. (Heraclitus, DK 118)

Believe not everything, but rather the examined: the former is silly, the latter of one in his sound senses. (Democritus, DK 67)

Be not suspicious towards all, but be cautious and stable [not liable to fall]. (Democritus, DK 91)

It is wise, listening not to me but to reason, to agree that all things are one. (Heraclitus, DK 50)

But it is of great concern to the bad not to believe their betters; but as the assurance of my Muse commands, know (*these things*) having sifted them in your innermost heart. (Empedocles, DK 4)

FRUITFULNESS

If you press these things deep into your firm mind with a friendly disposition and a watchful attention that is pure, certainly all these things will remain with you throughout your life; and you will gain many other things from them; for the former things cause these things to grow into their own character according to the nature of each. But if you reach out for other things, such as the countless miserable things that usually occupy men and blunt their thoughts, surely these things will quickly forsake you as time rolls on for they desire to return to their own kind; for know that all things have wisdom and a share of thought. (Empedocles, DK 110)

HUMILITY

The most beautiful ape is ugly compared to the genus of men. (Heraclitus, DK 82)

The wisest of men towards God appears an ape, in wisdom and beauty and all other things. (Heraclitus, DK 83)

A man is called childish [foolish] compared to God [a daimon]; just as a boy, in comparison to a man. (Heraclitus, DK 79)

Human nature does not have judgment, but the divine has. (Heraclitus, DK 78)

For narrow are the means spread throughout the limbs and many are the miseries that burst in and blunt the thoughts. And having seen only a small part of life during their lives, and doomed to early death, they are lifted up and carried off like smoke, and believing only that which each one meets with as he is driven every way, they boast of having found the whole. But things are not thus seen or heard by men or grasped by their minds. You, however, since you have withdrawn to here, shall not learn more than mortal wisdom can attain. (Empedocles, DK 2)

DISPOSITIONS OF DESIRE NEEDED IN THE PURSUIT OF WISDOM

REMOTE DISPOSITION: LOVE OF THE BEAUTIFUL

> One should not choose every pleasure, but only that concerned with the beautiful. (Democritus, DK 207)

Philosophy begins in wonder as Socrates (or Plato) teaches us in the *Theaetetus* and Aristotle, in the Proemium to Wisdom in the beginning of Book One of the *Metaphysics.* This wonder is the natural desire to know for its own sake the cause. Since the beautiful is also naturally desired to be seen (or heard) for its own sake, the desire and delight in the beautiful is a remote preparation for philosophy.

> The things that can be seen, heard, and learned are what I prize the most. (Heraclitus, DK 55)

There is more than one reason why these two senses of sight and hearing are singled out among the five. One thing they have in common which distinguishes them from the other five is that the beautiful is an object of these two senses. In the case of the other senses, touch, taste and smell, we speak of the good, but not the beautiful.

> What a poet writes when possessed and inspired by the gods is most beautiful. (Democritus, DK 18)

> Homer, obtaining by fate a divine nature, built an ordered world of all kinds of verse. (Democritus, DK 21)

The beautiful which is closest to philosophy is not that of painting or even of music, but that of great fiction. In ancient times, this is especially true of the works of Homer. In modern times, it is even more true of the works of Shakespeare. Albert the Great observes that (great) fiction gives one the way of wondering. Even if the wonder aroused by great fiction is not the wonder of the philosopher, it is nevertheless a stepping-stone to that wonder.

> It belongs to a divine mind to think always of something beautiful. (Democritus, DK 112)

Socrates (or Plato) in the *Theaetetus* says that philosophy is becoming like God so far as possible. The consideration of the beautiful makes our understanding like God in some way. For God knows all that he knows by knowing Himself and He is most beautiful, indeed He is beauty itself. Hence, God is always understanding what is most beautiful.

WONDER AND HOPE OF COMING TO KNOW AND FEAR OF MISTAKE

THE DESIRE IN WONDER

> I would rather discover one cause than be master of the kingdom of the Persians. (Democritus, DK 118)

As we have said above, wonder is the beginning of philosophy. And this wonder is a desire which is natural or inborn like hunger and thirst. But we distinguish these natural desires by their objects or what is desired. Wonder is the natural desire to know. But it is necessary to see that in wonder to know is not desired for anything beside itself. When the police want to know "who done it", it is for the sake of punishing who done it. But wonder is a desire to know for its own sake. And when this desire is strong, one wants to know not only the way things are, but also why they are the way they are. The question why asks for the cause. Hence, the wonder of the philosopher is *the natural desire to know for its own sake the cause.* We see the strength of this desire in Democritus. He would rather discover one cause than be master of the kingdom of the Persians. Now this kingdom was the greatest in his day known to the Greeks. And the man who was master of that kingdom would be the wealthiest man in the world, the most powerful man, the most honored man, being worshipped like a god, and to him would be offered the pleasures of the table and the bed beyond that of all other men. But Democritus would rather discover one cause than have all these goods. This desire is found in all the first philosophers for they sought the causes of things and most of all their first cause(s).

THE HOPE IN WONDER

> Good things hardly come to those seeking while bad things come even to those not seeking. (Democritus, DK 108)

To discover a cause is not only good, but also difficult. Hence, in or with his wonder, the philosopher must have hope of overcoming the difficulties standing in the way of these discoveries. We can make a mistake without effort, but much effort is necessary to find and know the truth about anything.

THE FEAR OF MISTAKE IN WONDER

> Let us not guess at random about the greatest things. (Heraclitus, DK 47)

Man guesses the truth before he knows it. When we guess, we can be mistaken. This is especially true when we guess at random. It is the fear of being mistaken or making a mistake, which leads us not to guess at random, but to guess by reason or by art.

> But gods, turn away from my tongue the madness of those men, and from pious mouths guide forth a pure stream. And you, much wooed, white-armed, virgin Muse, I pray to hear such things as are lawful for creatures of a day to hear; send me from piety driving the obedient chariot. Nor shall the flowers of honor from mortals force you to say rashly more than is pious and to move quickly to the heights of wisdom...(Empedocles, DK 3)

Men make mistakes when they *jump* to conclusions. The excessive love of honor or excellence leads men to say rashly more than is true and to try to move quickly to the heights of wisdom. But as Friar Lawrence says to Romeo: *Wisely and slow: they stumble that run fast.* The fear of mistake restrains our pride and helps us to go forward slowly and carefully, avoiding many mistakes.

THE LOVE OF WISDOM AND HUMILITY

LOVE OF WISDOM

> Men who love wisdom must inquire into very many things. (Heraclitus, DK 35)

Although wonder is the beginning of philosophy, the philosopher is named from the love of wisdom. We name a thing by its end more than by its beginning. And *wisdom* names the end of the philosopher. Since wonder is a desire and desire is for something one does not have, wonder is diminished as one comes to know what one desired to know. But one can love wisdom both before and after one has acquired some wisdom. Hence, wonder (in the sense of the desire defined above) pertains to the beginning of philosophy rather than to its end.

In this fragment, Heraclitus says that it is necessary for philosophers to investigate many things. But does this mean that the lover of wisdom is a lover of the knowledge of many things? Is wisdom a knowledge of many things?

> Pythagoras, the son of Mnesarchus, practiced enquiry beyond all men; and selecting these writings he called them his own wisdom; which was only a knowledge of many things, and bad art. (Heraclitus, DK 129)

Here Heraclitus denies that the love of wisdom is the love of a knowledge of many things. If a man investigates many things well, he will end up, it seems, with many kinds of knowledge. Is wisdom then this heap or pile of many different forms of knowledge in the mind of a man? If so wisdom would be private since each man's heap would be different. Heraclitus also speaks of this as bad art. Since art is always an ordering by reason, there seems to be an opposition between art and a heap or pile which lacks order.

> Those who seek for gold dig up much earth and find a little. (Heraclitus, DK 22)

Wisdom is often called *gold*, metaphorically speaking. Here Heraclitus seems to be saying that, in investigating many things, the philosopher is not uncovering many bits or parts of wisdom, but rather most of what he goes through is not part of wisdom, but only a very little part.

> Wisdom is one thing. It is to understand the mind by which all things are steered through all things. (DK 41)

Here, Heraclitus is saying that wisdom is chiefly one knowledge. It is mainly a knowledge of the first cause which Heraclitus guesses here is a "mind by which all things are steered through all things". If philosophy begins in wonder and

wonder is the natural desire to know the cause, the end of philosophy, or wisdom, must be a knowledge of the first cause.

> Imperturbable wisdom is worth everything. (Democritus, DK 216)

This one knowledge that is wisdom is worth everything else. If the philosopher like Democritus would rather discover one cause than be master of the kingdom of the Persians, then how much more would he desire a knowledge of the first cause. This wisdom is called *athambos* which word can be carried over in general to mean free from the passions or in particular as the negation of *thambos* which means wonder or stupor (the excess of wonder). No one can become wise without his passions quieting down. And we have seen that wonder (a desire to know) is diminished as one comes to know. Desire is for a good one lacks. Hence, it is not by chance that the same word *wanting* is sometimes used as a synonym for *desire* and also to mean *lacking*.

> To a wise man, the whole earth is open; for the fatherland of a good soul is the whole universe. (Democritus, DK 247)

Einstein spent the last years of his life, especially after the general theory of relativity, trying to understand the universe as a whole. Since the whole is greater than a part, this would seem to be the best object, the most beautiful object that reason could consider. However, Einstein was a pantheist. There was nothing better than the universe. But if the universe and its order is for the sake of a good outside the universe or the universe has a maker or both of these is true, then there is something better than the universe (which is not a part of the universe). Then the fatherland of a good soul and the goal of the philosopher would be something other than the universe. But even those who think that the beginning and the end of the universe is not a part of the universe, regard the order of the universe as best after this separated good. But Democritus' thinking here seems to be the same as Einstein's.

HUMILITY WHICH SHOULD GO WITH THE LOVE OF WISDOM

> The most beautiful ape is ugly compared to the genus of men. (Heraclitus, DK 82)

> The wisest of men towards God appears an ape, in wisdom and beauty and all other things. (Heraclitus, DK 83)

> A man is called childish [foolish] compared to God [a daimon]; just as a boy, in comparison to a man. (Heraclitus, DK 79)

Heraclitus helps us to understand how our wisdom is to God's wisdom by these two proportions. As the ape is to man, so is man to God. The ape seems wise in comparison to the other animals, but not in comparison to man. Man seems wise in comparison to the ape, but not in comparison to God. Likewise, in the proportion: as the child is to a man, so is man towards God. So too to a little child, his daddy seems to know everything. But compared to God, man seems to know almost nothing. In a beautiful predication *per causam*, St. Teresa of Avila says that humility is the truth. By humility, man places his wisdom under that of God and also to a lesser extent under that of godlike men. These proportions express the humility of Heraclitus, but also help us to understand the truth which is the cause of true humility.

> Human nature does not have judgment, but the divine has. (Heraclitus, DK 78)

This is another truth which underlies true humility. Man does not have judgment by nature; that is, he is not able to separate truth from falsity by his nature. Rather he must use his senses whereby he comes to know through the works of God. But God through his very nature has judgment between the true and the false.

> But gods, turn away from my tongue the madness of those men, and from pious mouths guide forth a pure stream. And you, much wooed, white-armed, virgin Muse, I pray to hear such things as are lawful for creatures of a day to hear; send me from piety driving the obedient chariot. Nor shall the flowers of honor from mortals force you to say boldly more than is pious and to move quickly to the heights of wisdom... (Empedocles, DK 3)

Here Empedocles expresses his humility and the knowledge which creatures of a day, ephemeral beings as ourselves, must be content to acquire. This humility prevents one from pride (an excessive or immoderate desire for honor and excellence) and the boldness which leads men to say more than is pious; that is, more than the truth (especially about God). Bold imagination is the chief cause of error in men. It also prevents one from trying to move quickly to the heights of wisdom when it is most necessary in one who loves wisdom to move slowly and carefully to wisdom. The *heights* of wisdom signify both that it is the

highest knowledge and the difficulty of reaching this knowledge. As Aristotle was to show in the second book of the *Metaphysics*, wisdom is most of all the knowledge of truth.

> For narrow are the means spread throughout the limbs and many are the miseries that burst in and blunt the thoughts. And having seen only a small part of life during their lives, and doomed to early death, they are lifted up and carried off like smoke, and believing only that which each one meets with as he is driven every way, they boast of having found the whole. But things are not thus seen or heard by men or grasped by their minds. You, however, since you have withdrawn to here, shall not learn more than mortal wisdom can attain. (Empedocles, DK 2)

Here again Empedocles places mortal or human wisdom under immortal or divine wisdom. He gives many reasons why men are apt see only a part of the truth starting from the limitations of their senses to the shortness of their lives and warns us against that form of pride, boasting, whereby the man who has only a part of the truth is apt to think that he has the whole.

DISPOSITIONS NECESSARY FOR LEARNING FROM OTHERS

NECESSITY OF BELIEF AND LEARNING FROM OTHERS

> Most of what belongs to the gods escapes being known through lack of belief. (Heraclitus, DK 86)

> Neither art nor wisdom is easy to reach if one does not learn. (Democritus, DK 59)

It is necessary to learn from others if one is going to get very far in any art or in wisdom. For what a man can discover by himself is very small in comparison to what he can learn from others. But to learn from others, one must be willing to believe them until one has made their knowledge one's own. Men go forward in the arts and sciences by believing those who have discovered something before

them, eventually making this their own, and then adding their own discoveries to the body of knowledge.

WHOM TO BELIEVE

It is necessary, not only to be willing to believe, but also to consider whom one should believe.

> What mind or reason is in them? They believe the poets and take the crowd as their teacher, not knowing that the many are bad while few are good. (Heraclitus, DK 104) (quote is attributed to Bias)

In this fragment, we are told not to take as our teacher the poets or the crowd. The reason for not taking the crowd as one's teacher is given here by Heraclitus, perhaps from Bias, one of the seven wise men of Greece. This reason is that the many are bad while few are good. One is also told not to take the poets as teachers. As Heraclitus says elsewhere, we should not be like those who dream. The one who dreams lives in his imagination which is the cause of deception. But the poet is a dreamer. Indeed, Shakespeare called one of his plays a dream. But we should not believe the mere imagination of another. Thus Horatio is at first unwilling to believe Marcellus and Bernardo about the ghost of Hamlet's father (*Hamlet*, Act I, Sc. 1):

> Horatio says 'tis but our fantasy,
> And will not let belief take hold of him.

So the poets or others who speak more out of imagination than out of their senses and reason are not to be believed.

> No one is able to be a great poet without madness. (Democritus, DK 17)

One should not believe a madman. But the poet insofar as he speaks out of imagination is like the madman as Shakespeare says (*A Midsummer Night's Dream*, Act V, Sc. 1):

> Lovers and madmen have such seething brains,
> Such shaping fantasies that apprehend

More than cool reason ever comprehends.
The lunatic, the lover and the poet
Are of imagination all compact.

There may of course be other reasons for sometimes believing the poets, but not insofar as they are *only* speaking out of imagination.

> One man is ten thousand to me if he be the best. (Heraclitus, DK 49)

> In Priene was born Bias, son of Teutamos, who is of more account than the rest. (Heraclitus, DK 39)

Whom should one believe if not the poets or the crowd? We should believe that man who is the best and worth ten thousand men, the wise man. Such a man was Bias who is traditionally called one of the seven wise men of Greece. (The earliest list of seven is that given given by Plato in the *Protagoras*, 343A-B. He gives as the seven wise men: Thales of Miletus, Pittacus of Mytilene, Bias of Priene, Solon of Athens, Cleobulus of Lindus, Myson of Chen, and Chilon of Sparta.)

> Remember the man who forgets which way the road leads (Heraclitus, DK 71)

But how do we know who is the wise man? The wise man is honored and famous for his wisdom. But some, often called *sophists*, are honored for the appearance of wisdom. How do we separate the wise man from the sophists among those honored? Perhaps in this fragment, Heraclitus anticipates Plato's criterion in the *Protagoras*. Does the man honored know how to proceed, the road to follow, or does he not?

DIFFICULTY AND IMPEDIMENTS TO BELIEVING THOSE WHOM WE SHOULD BELIEVE (THE NECESSITY OF HUMILITY AND DOCILITY IN THE GOOD STUDENT)

There are impediments to believing the wise man.

> The one advising him who thinks he has understanding labours in vain. (Democritus, DK 52)

The one who is not aware of his own ignorance is not ready to learn from one who knows. So long as the slave-boy in the *Meno* thinks he knows how to double a square, he will not be willing to learn from Socrates how to do so.

> Dogs bark at everyone they do not know. (Heraclitus, DK 97)

The wise man and his thoughts and ways are often unfamiliar to us. Hence, like the dog, we may bark at him as if he were an enemy. We may reject what he says because it is unfamiliar.

> It would be right for all the Ephesians above age to strangle themselves and leave the city to those below age; for they cast out Hermodorus, the best man among them, saying "Let no man among us be the best; if there is one, let it be elsewhere and among others." (Heraclitus, DK 121)

> Friends, I know the truth is in the words which I shall speak; but it is very hard for men and they are exceedingly jealous of the force of belief on their minds. (Empedocles, DK 114)

Out of pride and envy, men are reluctant to believe the best or wise man. When the Ephesians cast out the best man among them, Hermodorus, because he was better; to be consistent, they should have cast themselves out of the city as well for the same reason since they are better than the beardless lads.

> [Reproving some who did not believe] Knowing neither how to listen, nor how to speak. (Heraclitus, DK 19)

> He who contradicts and chatters much is naturally unfit for learning what he should. (Democritus, DK 85)

A fourth impediment is not knowing how to listen or speak. Heraclitus' order is significant. He places listening before speaking. Silence becomes the learner. The ear is the organ or tool of learning from another, not the tongue. The tongue is the tool of the teacher. Some are quick to contradict before they understand and talk too much when they should listen.

HOW WE SHOULD LEARN BY BELIEVING AND THE GOOD STUDENT

HOW TO LISTEN

> To say all, but wish to hear nothing, is greediness [arrogance]. (Democritus, DK 86)

Those who wish to do all the talking and not listen are not going to learn from others.

> Those without understanding when they hear are like deaf men; of them does the saying bear witness that they are absent when present. (Heraclitus, DK 34)

But those who listen without understanding are like those deaf. They might as well not be listening at all.

> A stupid man is excited by every word. (Heraclitus, DK 87)

We cannot listen carefully and frequently to the words of the wise if we are excited by every word. The wise say much in a few words and we must pay special attention to such words. But this is impossible if we get excited by every word spoken by anyone.

> Knowing the arrangement, they listen. (Antiphon, DK 63)

It is a great help to listening carefully to see the order in the words of the wise man. Hence, Thomas says in explaining the second part of Aristotle's Proemium to the three books *About the Soul* that he renders the student teachable by showing him the order in which he is going to proceed. It is reason, however, and not the will that sees this order.

> Come, I will speak and you listen and carry away my word... (Parmenides, DK 2)

One must carry away the words of the wise man so that one can think about them. We never penetrate them fully the first or even second time we hear them.

STABILITY - SOUND SENSE

Although this quality of a good student is more on the side of his reason than his will, it is considered here because it pertains to what a good student is. We do not want someone to think that it is enough for a good student to be willing to believe.

> The dry soul is wisest and best. (Heraclitus, DK 118)

> Believe not everything, but rather the examined: the former is silly, the latter of one in his sound senses. (Democritus, DK 67)

> Be not suspicious towards all, but be cautious and stable [not liable to fall]. (Democritus, DK 91)

Water quickly takes on the shape of another, but easily loses it as well. The good student should have a dry soul which is slower to take on a form, but more apt to retain it. One must not believe everything he hears, but only the examined (by reason). But likewise, one should not distrust and reject everything he hears.

> It is wise, listening not to me but to reason, to agree that all things are one. (Heraclitus, DK 50)

> But it is of great concern to the lower orders to mistrust the powerful; however, as the trustworthy evidence of my Muse commands, grasp (*these things*) when my reasoned argument has been sifted in your innermost heart. (Empedocles, DK 4, Freeman trans.)

One must examine by reason what is said before giving full assent to it. The young man in the *Protagoras* is too quick to accept Protagoras and Socrates shows him how to examine by reason what Protagoras says. One should listen more to reason than to the speaker or to oneself.

FRUITFULNESS

> If you press these things deep into your firm mind with a friendly disposition and a watchful attention that is pure, certainly all these things will remain with you throughout your life; and you will gain many other things from them; for the former things cause these things to grow into their own character according to the nature of each. But if you reach out for other things, such as the countless miserable things that usually occupy men and blunt their thoughts, surely these things will quickly forsake you as time rolls on for they desire to return to their own kind; for know that all things have wisdom and a share of thought. (Empedocles, DK 110)

This third attribute of the good student is to gain other things from what he has learned. Thomas Aquinas explains the metaphor of Sacred Scripture for a good student: he is like the earth. The earth is lowly or humble; it is stable; and it is fruitful.

Duane H. Berquist

BEGINNINGS OF PHILOSOPHY IN THE SENSES AND REASON

THE ROADS IN HUMAN KNOWLEDGE

THE FIRST ROAD: THE ROAD FROM THE SENSES INTO REASON

The things that can be seen, heard, and learned are what I prize the most. (Heraclitus, DK 55)

Eyes are more accurate {more certain] witnesses than ears. (Heraclitus, DK 101A)

It is not possible to draw God near within easy reach of our eyes or to take hold of him with our hands which is the broadest road of persuasion that leads into the mind of man. (Empedocles, DK 133)

Things that appear are a sight of the unknown [unseen]. (Anaxagoras, DK 21A)

OBJECTIONS TO THE ROAD FROM THE SENSES

...And the goddess received me kindly, and took my right hand in hers, and thus she spoke and addressed me: 'Young man, companion of immortal charioteers, who comest by the help of the steeds which bring thee to our dwelling: welcome! It is not bad fate, but law and right that has rushed you forward to go on this road which is far from the beaten path of men. There is need for you to learn all things, both the unmoved heart of well-rounded truth and the opinions of mortals in which there is no true belief. Nevertheless you shall learn these things also, how one should truly go through all things testing everything that seems to be.' (Parmenides, DK 1)

Come, I will tell, and you pay attention to my word when you have heard it, the only road that can be thought of: the one that it is and that it is impossible for it not to be is the road of belief for it follows truth; the other that it is not and that it must not be - this I tell you is a wholly unbelievable road. For you could neither

know what is not, for this is impossible, nor say it. (Parmenides, DK 2)

For this, what-is-not to be, will never conquer. But you hold back thought from this road of investigation and do not let custom force you along the much-experienced road where sightless sight and ringing ears and tongue rule, but judge by reason the much-fought refutation spoken by me. (Parmenides, DK 7)

We are not able to judge the truth through the weakness of our senses. (Anaxagoras, DK 21)

There are two forms of knowledge, the one genuine [legitimate] and the other dark [bastard]. To the dark belong all these: sight, hearing, smell, taste and touch. The genuine is separated from this. When the dark is no longer able to see anything smaller, nor to hear, nor to smell, nor to taste, nor to sense by touch, but it is necessary to seek into the smaller, then the genuine which has a tool for knowing the smaller comes in. (Democritus, DK 11)

Sweet by custom, bitter by custom, hot by custom, cold by custom, color by custom; in truth, atoms and the empty. We perceive nothing exactly in reality, but only what changes according to the disposition of the body and what flows in and presses against it. (Democritus, DK 9)

And this reason shows that in truth we know nothing about anything, but opinion is a flowing-in to individuals (Democritus, DK 7)

Man should know by this rule that he is separated from reality. (Democritus, DK 6)

And indeed it will be clear that there is no path to knowing how each thing really is. (Democritus, DK 8)

It has now been truly shown in many ways that we do not perceive how each thing is or is not. (Democritus, DK 10)

We really know nothing. Truth is in the depth. (Democritus, DK 117)

ANSWER TO THESE OBJECTIONS

Eyes and ears are bad witnesses to men, if they have souls that understand not their language. (Heraclitus, DK 107)

The lord to whom belongs the oracle at Delphi neither speaks out, nor hides his meaning, but gives a sign. (Heraclitus, DK 93)

They do not understand how that which is opposed agrees with itself. There is a turned away harmony, as in the case of the bow and the lyre. (Heraclitus, DK 51)

The hidden harmony is better than the apparent. (Heraclitus, DK 54)

Nature loves to hide. (Heraclitus, DK 123)

The opposite is useful, and from those differing comes the most beautiful harmony and all things come to be by strife. (Heraclitus, DK 8)

Color is by custom, the sweet is by custom, the bitter is by custom but in truth, the atoms and the empty. [And he makes the senses reply to the mind] Wretched mind, taking your beliefs [arguments] from us, you try to overthrow us. The overthrow will be your downfall. (Democritus, DK 125)

Things that appear are a sight of the unseen. (Anaxagoras, DK 21A

THE SECOND ROAD: THE ROAD OF REASON AS REASON

THE ROAD FROM REASONABLE GUESSES TO REASONED OUT KNOWLEDGE

MEN DO NOT KNOW BY REASON THEIR OWN IGNORANCE

They differ in the thought governing all things which most of all they are continuously acquainted with, and the things which they encounter daily seem strange to them. (Heraclitus, DK 72)

The many do not understand such things as they meet with, nor in learning do they know, although they seem so to themselves. (Heraclitus, DK 17)

REASON IN THE BEGINNING GUESSES & HAS OPINIONS RATHER THAN KNOWLEDGE

No man has seen, nor will anyone see, the clear truth about the gods and whatever else I say about all things. For if he should chance for the most part speaking perfect, nevertheless he himself does not know it. But opinion is fixed on all. (Xenophanes, DK 34)

Human nature does not have judgment, but the divine has. (Heraclitus, DK 78)

Children's playthings [toys] (*i.e. men's guesses*). (Heraclitus, DK 70)

The most approved man knows, defends, what seems; and surely, judgment [justice] will seize the makers and witnesses of falsehoods. (Heraclitus, DK 28)

Let us not guess at random about the greatest things. (Heraclitus, DK 47)

HOW REASON DISCOVERS

The gods have not shown all things to mortals from the beginning; but seeking in time, they have found the better. (Xenophanes, DK 18)

For narrow are the means spread throughout the limbs and many are the miseries that burst in and blunt the thoughts. And having seen only a small part of life during their lives, and doomed to early death, they are lifted up and carried off like smoke, and believing only that which each one meets with as he is driven every way, they boast of having found the whole. But things are not thus seen or heard by men or grasped by their minds. You, however, since you have withdrawn to here, shall not learn more than mortal wisdom can attain. (Empedocles, DK 2)

If you do not expect the unexpected, you will not find it; for it is hard to be found and difficult. (Heraclitus, DK 18)

The hidden harmony is better than the apparent harmony. (Heraclitus, DK 54)

The opposite is useful and from those differing comes the most beautiful harmony, and all things come to be by strife. (Heraclitus, DK 8)

War is the father of all things, the king of all things...(Heraclitus, DK 53)

We must know that war is common to all and strife is justice, and that all things come into being and pass away by strife. (Heraclitus, DK 80)

Dispute. (Heraclitus, DK 122)

HOW REASON DOES NOT COME TO UNDERSTAND

Learning of many things does not teach one to have understanding; else it would have taught Hesiod and Pythagoras, and also Xenophanes and Heccataeus. (Heraclitus, DK 40)

Many who have learned much do not have understanding. (Democritus, DK 64)

One should practice much understanding, not much learning. (Democritus, DK 65)

There is an understanding in the young and a lack of understanding in the old. For time does not teach understanding, but early bringing up [nurture] and nature. (Democritus, DK 183)

Do not try to understand everything, lest you become ignorant of everything. (Democritus, DK 169)

It is necessary to speak truly, not to talk at length. (Democritus, DK 225)

Fastening one summit to another, never to complete one path [way, road] of words [thoughts]. (Empedocles, DK 24)

HOW REASON COMES TO UNDERSTAND AND JUDGE

Although this thought is always so, men do not understand it - not only before hearing it, but even after they have heard it for the first time. Though all things take place according to this thought, men seem like those without any experience of it when they make trial of such words and actions as I describe by dividing each thing according to nature and showing how it is. For what they do when awake is hidden from other men just as they forget what they do when asleep. (Heraclitus, DK 1)

We should not act and speak like those asleep. (Heraclitus, DK 73)

For the waking there is one world, and it is common; but when men sleep, each one turns aside into a private world. (Heraclitus, DK 89)

Therefore, we ought to follow what is common. Although reason is common to all, the many live as if having a private wisdom. (Heraclitus, DK 2)

Thinking [understanding] is common to all. (Heraclitus, DK 113)

Those who speak with understanding must be strong in what is common to all, as much as a city is strong in its law, and even more so. For all human laws are fed by one divine law which

governs as far as it wishes and is more than sufficient for all. (Heraclitus, DK 114)

It is common to me where I begin. For there I will come back again. (Parmenides, DK 5)

THE GROWTH OF REASON

The soul has a reason which makes itself grow. (Heraclitus, DK 115)

...But come listen to my words. For learning will surely cause your mind to grow. (Empedocles, DK 17)

Education is another sun to those who are educated. (Heraclitus, DK 134)(Doubtful fragment?)

HOW MENTAL GROWTH DOES TAKE PLACE: IMPORTANCE OF THE BEGINNINGS

The first thing, I believe, for mankind is education. For whenever someone has made a beginning correctly in anything, it is likely that the end will also come about correctly. And as is the seed one has sown in the ground, so also are the things one ought to expect will come forth. And when one sows a noble education in a young body, this lives and grows through the whole of life, and neither rain nor drought destroys it. (Antiphon, DK 60)

If you press these things deep into your firm mind with a friendly disposition and a watchful attention that is pure, certainly all these things will remain with you throughout your life; and you will gain many other things from them; for the former things cause these things to grow into their own character according to the nature of each.... (Empedocles, DK 110

It is good to say twice what ought to be said. (Empedocles, DK 25)

Education does not take root in the soul unless one goes deep. (Protagoras, DK 11)

THE THIRD ROADS WHICH ARE PRIVATE TO ONE MATTER

...But come, observe with every means in which way each thing is clear, neither hold any sight in trust more than hearing, nor loud-sounding hearing above what is made clear by the tongue, nor hold back belief from any of the other limbs where there is any way to perceive, but observe in the way in which each thing is clear. (Empedocles, DK 3)

Remember the man who forgets which way the road leads (Heraclitus, DK 71)

THE FIRST STATEMENT AND KING OF STATEMENTS

It is common to me where I begin for there I shall come back again. (Parmenides, DK 5)

It is necessary to say and think that what-is is. For it is able to be, but nothing is not able. These things I command you to consider: I hold you back from this first road of investigation and then besides from that road along which wander two-headed mortals, knowing nothing; for helplessness drives the wandering mind in their breasts. They are carried along like those deaf and blind, tribes without judgment, for whom to be and not to be are thought to be the same and not the same, and the road of all is turned back. (Parmenides, DK 6)

For it is the same thing that can be thought and can be. (Parmenides, DK 3)

Observe how things absent are firmly present to the mind. For it will not cut off what is from holding fast to what is - neither scattered throughout the universe, nor brought together. (Parmenides, DK 4)

THE ROADS IN HUMAN KNOWLEDGE

THE FIRST ROAD: THE ROAD FROM THE SENSES INTO REASON

> The things that can be seen, heard, and learned are what I prize the most. (Heraclitus, DK 55)

The order noted in the fragment is from the senses into reason. There are at least two reasons why these two senses (sight and hearing) are singled out. One is that these senses are more spiritual than the other senses. A sign of this is that we speak of the beautiful only in regard to the objects of these two senses. A second reason is that we come to know by discovery and learning from others. But the sense of sight is the sense of discovery par excellence and the sense of hearing is the sense of learning from others.

> Eyes are more accurate {more certain] witnesses than ears. (Heraclitus, DK 101A)

The eyes are more clear and certain than the ears (Hence, the saying that seeing is believing.) The word *witness* is also important.

> It is not possible to draw God near within easy reach of our eyes or to take hold of him with our hands which is the broadest road of persuasion that leads into the mind of man. (Empedocles, DK 133)

The road from the senses into reason is the basic road that leads into our reason. It is the first road underlying our knowledge.

Empedocles singles out two senses: the sense of sight and the sense of touch. The sense of sight is the most clear of the senses and by it we can also know things at a great distance. The sense of touch is the most certain of the senses. Hence, the doubting Thomas wanted to put his fingers or hand into the wounds of Christ. Here we see the dichotomy which Aristotle was to point out in the life of reason as well. Certitude and clarity do not go together. We are more sure in our confused knowledge than when we try to know distinctly.

The sense of sight and the sense of touch are the only senses which know the shape of bodies. The shape of bodies is very important in distinguishing them and knowing what they are. And since the *witness* of two or three is sufficient,

we are sure that the bodies around us have different shapes. Max Born in his book on the theory of relativity also singles out these two senses.

> Things that appear are a sight of the unknown [unseen]. (Anaxagoras, DK 21A)

Although all of man's knowledge is based on his senses, he is not limited to knowing only what can be sensed. But other things can be known to some extent by their likeness to what we can sense.

OBJECTIONS TO THE ROAD FROM THE SENSES

> ...And the goddess received me kindly, and took my right hand in hers, and thus she spoke and addressed me: 'Young man, companion of immortal charioteers, who comest by the help of the steeds which bring thee to our dwelling: welcome! It is not bad fate, but law and right that has rushed you forward to go on this road which is far from the beaten path of men. There is need for you to learn all things, both the unmoved heart of well-rounded truth and the opinions of mortals in which there is no true belief. Nevertheless you shall learn these things also, how one should truly go through all things testing everything that seems to be.' (Parmenides, DK 1)

> Come, I will tell, and you pay attention to my word when you have heard it, the only road that can be thought of: the one that it is and that it is impossible for it not to be is the road of belief for it follows truth; the other that it is not and that it must not be - this I tell you is a wholly unbelievable road. For you could neither know what is not, for this is impossible, nor say it. (Parmenides, DK 2)

> For this, what-is-not to be, will never conquer. But you hold back thought from this road of investigation and do not let custom force you along the much-experienced road where sightless sight and ringing ears and tongue rule, but judge by reason the much-fought refutation spoken by me. (Parmenides, DK 7)

There are perhaps three classical objections to following the road from the senses into reason.

One is that following this road leads us into contradictions. Parmenides seems to be the originator of this objection, as he is also the first to bring out that the statement about contradiction is the first of all statements. Heraclitus and others, following the road from the senses, admitted (in words, at least) contradictions. And Parmenides saw that reason cannot really admit a contradiction, that something both is and is not (at the same time and in the same way).

Parmenides and his followers, like Zeno, went so far as to deny that change exists because of the apparent contradictions that Heraclitus pointed out in change and others which Parmenides and Zeno were able to bring out.

But it is difficult to deny that change exists. Such a denial contradicts our experience. Nevertheless, it would be absurd to deny the statement about contradiction because of the fact of change. For one would be denying the statement about contradiction because something contradicted it. This is to say that it is not so because it so - an absurd way of reasoning.

But a way out of the objections of Parmenides and Zeno can be found if the contradictions in change are only apparent. Plato, and especially Aristotle, were able to show this about those contradictions which Heraclitus and Parmenides and Zeno were able to bring out. The untying of these apparent contradictions was the discovery of hidden truths about the natural world. Heraclitus may have seen, in a confused way, at least, the importance of bringing out what seems to be contradictions in our experience and speaking of natural things.

> We are not able to judge the truth through the weakness of our senses. (Anaxagoras, DK 21)
>
> There are two forms of knowledge, the one genuine [legitimate] and the other dark [bastard]. To the dark belong all these: sight, hearing, smell, taste and touch. The genuine is separated from this. When the dark is no longer able to see anything smaller, nor to hear, nor to smell, nor to taste, nor to sense by touch, but it is necessary to seek into the smaller, then the genuine which has a tool for knowing the smaller comes in. (Democritus, DK 11)

The second classical objection to following the road from the senses is that the senses are imperfect ways of knowing and cannot see the small things that

make up the natural world. Anaxagoras and Democritus thought that the natural world was made up of things too small to be sensed by our gross senses.

> Sweet by custom, bitter by custom, hot by custom, cold by custom, color by custom; in truth, atoms and the empty. We perceive nothing exactly in reality, but only what changes according to the disposition of the body and what flows in and presses against it. (Democritus, DK 9)

> And this reason shows that in truth we know nothing about anything, but opinion is a flowing-in to individuals (Democritus, DK 7)

Democritus and others may also have thought that sensing is a result of the senses having been acted upon by what is outside them and that all we know is this result in the senses.

> Man should know by this rule that he is separated from reality. (Democritus, DK 6)

> And indeed it will be clear that there is no path to knowing how each thing really is. (Democritus, DK 8)

> It has now been truly shown in many ways that we do not perceive how each thing is or is not. (Democritus, DK 10)

> We really know nothing. Truth is in the depth. (Democritus, DK 117)

This attack upon the senses leads to a kind of despair of knowing in these fragments of Democritus. This despair is strange since man has a natural desire to know and nature is not superfluous. It is especially strange in those whose life is given to pursuing knowledge for its own sake.

A third objection to the road from the senses is based on the sensible world as always changing and knowledge being impossible of what is always changing. Plato imbibed this position from the Heracliteans and sought knowledge by turning away from the sensible world and by reason's contact with another unchanging world. But this thinking must be investigated in the dialogues of Plato and the works of Aristotle where he discusses this position.

ANSWER TO THESE OBJECTIONS

> Eyes and ears are bad witnesses to men, if they have souls that understand not their language. (Heraclitus, DK 107)

> The lord to whom belongs the oracle at Delphi neither speaks out, nor hides his meaning, but gives a sign. (Heraclitus, DK 93)

Reason may misunderstand what the senses are saying. The sensible is a sign of something else. Reason may be mistaken when it guesses of what it is a sign.

> They do not understand how that which is opposed agrees with itself. There is a turned away harmony, as in the case of the bow and the lyre. (Heraclitus, DK 51)

What may seem opposed is not always opposed.

> The hidden harmony is better than the apparent. (Heraclitus, DK 54)

> Nature loves to hide. (Heraclitus, DK 123)

Harmony is the opposite of contradiction. It comes from the Greek word meaning *to fit together*. There may be a harmony hidden under what seems to be a contradiction. This harmony would especially be hidden in the natural world since nature loves to hide (for it is a cause within and what is within things is hidden from our senses and therefore from us in the beginning).

> The opposite is useful, and from those differing comes the most beautiful harmony and all things come to be by strife. (Heraclitus, DK 8)

The apparent contradiction may be the opposite which is useful to discovering the harmony which is hidden under it.

> Color is by custom, the sweet is by custom, the bitter is by custom but in truth, the atoms and the empty. [And he makes the senses

> reply to the mind] Wretched mind, taking your beliefs [arguments] from us, you try to overthrow us. The overthrow will be your downfall. (Democritus, DK 125)

Reason in general bases itself upon sense experience. And even when attacking the senses, it proceeds from what it has learned from them. Hence, in attacking the senses, it undermines also itself. Just as reason could not be used to show that reason cannot be trusted (you would be trusting reason to conclude that you cannot trust reason), so reason cannot trust the senses for evidence not to trust the senses.

> Things that appear are a sight of the unseen. (Anaxagoras, DK 21A

We may be able to know what is not sensed by its likeness to what can be sensed.

THE SECOND ROAD: THE ROAD OF REASON AS REASON

THE ROAD FROM REASONABLE GUESSES TO REASONED OUT KNOWLEDGE

MEN DO NOT KNOW BY REASON THEIR OWN IGNORANCE

> They differ in the thought governing all things which most of all they are continuously acquainted with, and the things which they encounter daily seem strange to them. (Heraclitus, DK 72)

> The many do not understand such things as they meet with, nor in learning do they know, although they seem so to themselves. (Heraclitus, DK 17)

Heraclitus seems to anticipate what Socrates is famous for showing more fully: men do not know that they do not know. In the beginning, reason not only does not know most things, but it does not even know that it does not know them. Things, which are familiar to us, or to which we are accustomed, seem to be known to us. But this is not so.

REASON IN THE BEGINNING GUESSES AND HAS OPINIONS RATHER THAN KNOWLEDGE

> No man has seen, nor will anyone see, the clear truth about the gods and whatever else I say about all things. For if he should chance for the most part speaking perfect, nevertheless he himself does not know it. But opinion is fixed on all. (Xenophanes, DK 34)

In the beginning, men guess and have opinions about things. And it seems doubtful that they will ever get beyond this condition.

> Human nature does not have judgment, but the divine has. (Heraclitus, DK 78)

Man is not born with the ability to judge between the true and the false like God can by his very nature.

> Children's playthings [toys] (*i.e. men's guesses).* (Heraclitus, DK 70)

One is reminded of Whittaker Chambers' disgust with his fellow students at Columbia for whom ideas were ping-pong balls to be played with. This shows a lack of concern for truth which to know is the good of reason.

> The most approved man knows, defends, what seems; and surely, judgment [justice] will seize the makers and witnesses of falsehoods. (Heraclitus, DK 28)

Men in their careless guesses are most apt to be mistaken. The famous fabricate false statements and others witness to these falsehoods. Heraclitus is sure that such will be punished.

> Let us not guess at random about the greatest things. (Heraclitus, DK 47)

Heraclitus is not telling us not to guess. If that was his intention, the words "at random" would be superfluous. Rather given that we cannot do other than guess in the beginning, he is urging us to make reasonable guesses, at least about the greatest things. Reasonable guesses are apt to have some part of the

truth, or some resemblance to the truth, even if they are not wholly true. We may be able to approach to knowing truth through reasonable guesses. But this cannot be said of wild guesses.

HOW REASON DISCOVERS

> The gods have not shown all things to mortals from the beginning; but seeking in time, they have found the better. (Xenophanes, DK 18)

The discovery or finding of the better takes time. Time as such is not the cause of discovery, but rather the discovery is due to *men searching* in time or is a result of a *search* that takes time.

> For narrow are the means spread throughout the limbs and many are the miseries that burst in and blunt the thoughts. And having seen only a small part of life during their lives, and doomed to early death, they are lifted up and carried off like smoke, and believing only that which each one meets with as he is driven every way, they boast of having found the whole. But things are not thus seen or heard by men or grasped by their minds. You, however, since you have withdrawn to here, shall not learn more than mortal wisdom can attain. (Empedocles, DK 2)

In their search, men are apt to see only a part of the truth. Empedocles gives some of the reasons for this: the limitations of the senses, the miseries of life (which do not, as Empedocles says here, blunt our thoughts so much as keep them blunt), and the shortness of our life. Boastfulness, a form of pride whereby we attribute to ourselves more good than we have, may also keep us satisfied with the part we have seen, thinking we have seen the whole.

However, if we are willing not only to discover part of the truth by ourselves, but also to learn from others, it may be possible to approach the whole truth about something through the efforts of many over a long course of time. And thus we see how the arts and sciences have grown through the efforts of many.

> If you do not expect the unexpected, you will not find it; for it is hard to be found and difficult. (Heraclitus, DK 18)

Someone might ask how one can expect the unexpected. Is this not a contradiction *to expect the unexpected*? But what is unexpected simply can be expected in some way. How is this possible?

> The hidden harmony is better than the apparent harmony. (Heraclitus, DK 54)
>
> The opposite is useful and from those differing comes the most beautiful harmony, and all things come to be by strife. (Heraclitus, DK 8)
>
> War is the father of all things, the king of all things...(Heraclitus, DK 53)
>
> We must know that war is common to all and strife is justice, and that all things come into being and pass away by strife. (Heraclitus, DK 80)

Harmony is opposed to contradiction. When reason runs into what seems to be a contradiction in things, or when one statement that reason has reason to think is so contradicts or leads to a contradiction with another statement which reason also has reason to think is so, there is a sign that something is hidden from reason under this contradiction. (One is led to expect the unexpected by this contradiction without yet knowing what to expect.) The elimination of this contradiction will be the discovery of what was hidden below it. This is the hidden harmony which is better than the apparent harmony in the man who has not yet seen how one of his thoughts contradicts another or who has not yet seen the apparent contradiction in things. In this sense, war is the father of all great discoveries. Einstein said likewise that all the essential ideas in science were born from a conflict.

Dispute. (Heraclitus, DK 122)

Heraclitus urges us to dispute because this will bring out those contradictions which are the starting-point for discovery.

HOW REASON DOES NOT COME TO UNDERSTAND

> Learning of many things does not teach one to have understanding; else it would have taught Hesiod and Pythagoras, and also Xenophanes and Heccataeus. (Heraclitus, DK 40)
>
> Many who have learned much do not have understanding. (Democritus, DK 64)
>
> One should practice much understanding, not much learning. (Democritus, DK 65)
>
> There is an understanding in the young and a lack of understanding in the old. For time does not teach understanding, but early bringing up [nurture] and nature. (Democritus, DK 183)

Heraclitus and Democritus seem to say the same in these two fragments: *Much learning does not give one understanding*. But what is meant by *learning* here and by *understanding*?

Sometimes *understanding* is the name of a power or ability of the soul, as in the third book *About the Soul* by Aristotle. It is the same as reason although named differently.

Sometimes it signifies the first habit of looking reason as in the sixth book of the *Nicomachean Ethics* of Aristotle. It is, in this sense, the habit of knowing first beginnings that are known through themselves; as, for example, that *a whole is greater than one of its parts*. We could call this understanding *natural understanding*, not in the sense that we are born with it, but that we naturally come to possess it.

But there is also a reasoned out understanding which is a result of thinking out in about seven senses. (These seven senses correspond to the senses of *in* which Thomas Aquinas ordered, following their distinction by Aristotle in the fourth book of *Natural Hearing*, the so called *Physics.* See Thomas Aquinas, *In IV Physicorum*, Lectio IV, nn. 435-436)

Finally wisdom, which is the greatest perfection of reason, is the head of both natural and reasoned out understanding, as Aristotle shows in the *Metaphysics.* The wise man most of all understands.

It is obvious that much learning does not give one understanding in the first two senses since both of them are presupposed to any learning. But a more profound meaning of these fragments is that much learning does not give one reasoned out understanding and, a fortiori, wisdom. But what kind of learning is this? Learning which is more memory and narration than thinking out will not give one reasoned out understanding. And even thinking out something in particular will not lead to wisdom if it is not ordered to wisdom.

> Do not try to understand everything, lest you become ignorant of everything. (Democritus, DK 169)

This is connected with what we saw above in Empedocles. Reason cannot see the whole truth about anything at once, but it must see one part after another. Likewise, we cannot understand everything at once, but we must understand one thing after another.

> It is necessary to speak truly, not to talk at length. (Democritus, DK 225)

> Fastening one summit to another, never to complete one path [way, road] of words [thoughts]. (Empedocles, DK 24)

Thinking out is a continuous movement of reason. By *continuous* is meant here that the end of one thinking out is the beginning of another thinking out. For example, the end of thinking out *what a quadrilateral is* is the beginning for thinking out *what a square is*. Likewise, the end of thinking out by one syllogism is the beginning of thinking out by another syllogism; that is, the conclusion of one syllogism is the premiss of another syllogism. Those who jump from one interesting question or topic to another, without ever completing any *continuous* thinking out, will not arrive at a reasoned out understanding of things.

HOW REASON COMES TO UNDERSTAND AND JUDGE

> Although this thought is always so, men do not understand it - not only before hearing it, but even after they have heard it for the first time. Though all things take place according to this thought, men seem like those without any experience of it when they make

> trial of such words and actions as I describe by dividing each thing according to nature and showing how it is. For what they do when awake is hidden from other men just as they forget what they do when asleep. (Heraclitus, DK 1)

Here Heraclitus is close to saying that he is thinking out things in the second and third and perhaps fourth senses of *out*. He is dividing and defining things.

> We should not act and speak like those asleep. (Heraclitus, DK 73)

One would tend to agree with this statement even before knowing fully what it means. No one would say that we should act and speak like those asleep. But the phrase *like those asleep* can be understood in particular and in general, as we will see in the following fragments.

> For the waking there is one world, and it is common; but when men sleep, each one turns aside into a private world. (Heraclitus, DK 89)

In particular, those who are asleep are cut off from their senses and, if dreaming, in their imagination. Hence, to act and speak like those asleep means in particular to act and speak cut off from one's senses. Those who follow their imagination rather than their senses are in particular like those who are asleep.

But in general, those who are asleep are cut off from something one and common that is true and stuck in many private falsehoods.

> Therefore, we ought to follow what is common. Although reason is common to all, the many live as if having a private wisdom. (Heraclitus, DK 2)

> Thinking [understanding] is common to all. (Heraclitus, DK 113)

If then to act and speak like those asleep is to follow the private, and we should not act and speak like those asleep, we ought to follow instead the common. And this is Heraclitus' general conclusion in the beginning of DK 2. But there are many particular conclusions to be drawn from this. One in the second part of DK 2 is that we should follow reason.

Now someone might object that there is only your reason, my reason and the next man's reason. There is no common reason. But there is something common to your reason, my reason and the next man's reason. And even in daily life we

assert this when we say about someone that they will not listen to reason. To listen to reason means to listen to what is common to your reason, my reason and the next man's reason. Or to listen to what is natural to reason for this is common.

> Those who speak with understanding must be strong in what is common to all, as much as a city is strong in its law, and even more so. For all human laws are fed by one divine law which governs as far as it wishes and is more than sufficient for all. (Heraclitus, DK 114)

This is perhaps the most illuminating fragment about how man comes to understand. Those who understand must be strong in what is common to all.

What is common to all can be understood in two ways: what is common to all men and what is common to all things.

What is common to all men is our natural desire to know, the natural road underlying our knowledge (the road from the senses into reason), and the axioms or statements known through themselves by all men.

What is common to all things is what is said of all things (being and one) and what is a cause of all things (the first cause or causes). Becoming strong in these, as well as in the three above, is what makes one wise.

> It is common to me where I begin. For there I will come back again. (Parmenides, DK 5)

Parmenides always came back to the king of statements, the statement and axiom about the impossibility of a contradiction in things. He gave an example of becoming strong in the axiom about contradiction which is the natural beginning of all axioms (or statements known though themselves by all) and, indeed of all statements known through themselves.

THE GROWTH OF REASON

> The soul has a reason which makes itself grow. (Heraclitus, DK 115)

> ...But come listen to my words. For learning will surely cause your mind to grow. (Empedocles, DK 17)

Reason can be said *to grow* in a number of ways. Since the knower is in some way the known, reason can be said to grow as it comes to know more things. It can also be said to grow when it comes to know the same thing more. And in learning from another, reason is said to grow when it has made its own what it has heard, just as the body does not grow by what is outside of it before it breaks this down and turns this into itself.

> Education is another sun to those who are educated. (Heraclitus, DK 134)(Doubtful fragment?)

As the sun enables the eye to see by enlightening certain things, so education casts a light upon a number of things for reason.

HOW MENTAL GROWTH DOES TAKE PLACE: THE IMPORTANCE OF THE BEGINNINGS

> The first thing, I believe, for mankind is education. For whenever someone has made a beginning correctly in anything, it is likely that the end will also come about correctly. And as is the seed one has sown in the ground, so also are the things one ought to expect will come forth. And when one sows a noble education in a young body, this lives and grows through the whole of life, and neither rain nor drought destroys it. (Antiphon, DK 60)

The beginning is like a seed in reason. And just as plants grow from a seed which is small into something large, so too reason grows from a beginning well considered into many things which can be understood or deduced from this beginning.

> If you press these things deep into your firm mind with a friendly disposition and a watchful attention that is pure, certainly all these things will remain with you throughout your life; and you will gain many other things from them; for the former things cause these things to grow into their own character according to the nature of each....(Empedocles, DK 110

In carrying the word *growth* over to reason, the Greek philosophers would seem to entering upon the road of reason along which it comes to know something from knowing other things. It makes itself grow by coming to know the unknown through the known.

> It is good to say twice what ought to be said. (Empedocles, DK 25)

> Education does not take root in the soul unless one goes deep. (Protagoras, DK 11)

Because reason gains other things from a beginning only when that beginning is well understood, it is not superfluous to speak of a beginning more than once. And as the great Empedocles said, one must press this beginning deep into one's clear mind in order to be able to derive other things from it.

THE THIRD ROADS WHICH ARE PRIVATE TO ONE MATTER

> ...But come, observe with every means in which way each thing is clear, neither hold any sight in trust more than hearing, nor loud-sounding hearing above what is made clear by the tongue, nor hold back belief from any of the other limbs where there is any way to perceive, but observe in the way in which each thing is clear. (Empedocles, DK 3)

Since the first philosophers are more at the step of reasonable guesses than that of reasoned out knowledge, we would not expect them to have a distinct knowledge of the diverse ways of the forms of reasoned out knowledge or understanding. However, in this fragment, Empedocles sees that the best way of knowing should not be followed everywhere. Rather one should use the way of knowing which fits what is being investigated, This is the basic beginning about the road or way of each reasoned out knowledge. It should fit the matter of that reasoned out knowledge. This is the artful way of proceeding for every art adapts itself to its matter.

> Remember the man who forgets which way the road leads
> (Heraclitus, DK 71)

In the *Nicomachean Ethics*, Aristotle says that Plato was right to ask whether we are on the road to the beginnings or from the beginnings. This is one very important element of how to proceed in any reasoned out knowledge. Do we reason from causes to effects or from effects to causes? Is the road from causes to effects or from effects to causes? In mathematics, it is the former. But in natural philosophy and ethics it is much more the reverse. We can see in the beginning of modern philosophy that Descartes and Spinoza do not know in which way the road runs. As we saw in the consideration of belief, this is one reason for not believing them.

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THE FIRST STATEMENT AND KING OF STATEMENTS

> It is common to me where I begin for there I shall come back again. (Parmenides, DK 5)

Like the point on the circle which is the beginning and the end, the statement about contradiction is the beginning of Parmenides' thought and the end to which it resolves or by which he judges. Heraclitus most of all had insisted on following the common and the statement about contradiction is the most common statement. Hence, insofar as Heraclitus insisted on following the common and yet admitted (in words, at least) contradiction in change, Parmenides uses Heraclitus' words on following the common against his admission of contradiction as real in change.

> It is necessary to say and think that what-is is. For it is able to be, but nothing is not able. These things I command you to consider: I hold you back from this first road of investigation and then besides from that road along which wander two-headed mortals, knowing nothing; for helplessness drives the wandering mind in their breasts. They are carried along like those deaf and blind, tribes without judgment, for whom to be and not to be are thought to be the same and not the same, and the road of all is turned back. (Parmenides, DK 6)

It is necessary to think that what-is is and that what-is-not (or nothing) is not. It is impossible to think that what-is is not, or that what-is-not is because it is impossible for what-is-not to be, but what-is can be. But it is, contrary to what Parmenides says here, possible *to say* what you cannot think.

If one thought that *what-is* is not or that *what-is-not* is, one would both think that something is and not think that it is, which is impossible. Such thinking is impossible because it is impossible both to be and not be (at the same time and in the same way).

The first road which Parmenides commands us to avoid is perhaps a road that would begin with denying this axiom about contradiction. But the second road seems to be the road from the senses which leads men to contradictions. He says that two-headed mortals, knowing nothing, wander along this road.

He calls them *two-headed* because one and the same head could not think that something both is and is not. (One head could be *in doubt* as to whether it is or is not so, but it could not think that in fact it is both.) If one thinks then that something both is and is not, one must have two heads, one in which to think that it is and another in which to think that it is not. It is also against nature to have two heads so that Parmenides indicates that the statement about contradiction is *naturally* known.

He also says they *know nothing*. If one does not know the statement about contradiction, one cannot know any other statement because it is in all of them. Every other statement is either affirmative, saying that something is, or negative, saying, that something is not; but not saying both. Indeed, as Aristotle was to say in the fourth book of the *Metaphysics*, the alternative to accepting this statement is a return to the state of the vegetable (not even to the state of the other animals, since even the senses discriminate) which is a state of knowing nothing.

The Greek and Latin words for error come from the word to wander. Hence, when he calls them *wandering*, he indicates that they are in error.

In saying that *helplessness* drives their wandering mind, Parmenides indicates that their erring mind cannot be helped because there is nothing more known or more certain than the statement about contradiction from which one could reason. Hence, Aristotle was later to say that one cannot demonstrate the axiom about contradiction since there is nothing more known from which one could reason. One can only reason to someone from what they might accept even though less known.

They are also *tribes without judgment* for judgment is the separation of true from false. Even what it means to say that a statement is true or false depends upon the statement of contradiction. A statement is true when it says that what-is is or what-is-not is not and false when its say that what-is is not or what-is-not is. Further, we judge statements not known through themselves by statements known through themselves. And statements known through themselves rest upon the statement about contradiction in that to deny a statement known through itself is to fall into a contradiction. If we deny that a whole is greater than one of its parts, we are saying that what has parts does not have parts. If we deny the statement that *no odd number is even*, we are saying that something can both be and not be divisible into two equal parts.

> For it is the same thing that can be thought and can be. (Parmenides, DK 3)

This fragment is also translated as saying that to think (or to understand) is the same as to be. As it is translated above, it seems to mean that just as a contradiction cannot be in things (the same thing cannot both be and not be) so the mind cannot think that something both is and is not (at the same and in the same way; as Aristotle was to make explicit later). Translated the second way, it touches upon the knower being the known in some way. But is the way something is known the same necessarily as the way it is? This touches upon the central question of philosophy. Does truth require that *the way we know* be *the way things are*?

> Observe how things absent are firmly present to the mind. For it will not cut off what is from holding fast to what is - neither scattered throughout the universe, nor brought together. (Parmenides, DK 4)

If what is were divided, what would be separating its parts? Can nothing separate, as Democritus seems to think?

NATURAL FRAGMENTS OF THE FIRST PHILOSOPHERS

THALES

Water is the beginning of all things.

ANAXIMANDER

The unlimited is the beginning of existing things. That from which existing things come to be is also that into which they are corrupted by necessity. For they render justice and give up injustice to one another according to the order of time. (Anaximander, DK 1)

The nature of the unlimited is everlasting and does not grow old. (Anaximander, DK 2)

The unlimited is immortal and indestructible. (Anaximander, DK 3)

ANAXIMENES

Just as our soul, being air, holds us together, so do breath and air surround the whole world. (Anaximenes, DK 2)

PYTHAGORAS

The harmony of the octave comes from the ratio of two to one.

HERACLITUS

Nature loves to hide. (Heraclitus, DK 123)

It is not possible to step twice into the same river. (Heraclitus, DK 91)

We step and do not step into the same rivers; we are and we are not. (Heraclitus, DK 49a)

The sun is new every day. (Heraclitus, DK 6)

Cold things become warm and the warm becomes cold; the wet dries, and the dry becomes wet. (Heraclitus, DK 126)

The same in us is the living and the dead, the awake and the asleep, the young and the old. For the former having changed are the latter, and again, these having changed are the former. (Heraclitus, DK 88)

Hesiod is the teacher of most men. They believe he knew very many things who did not know day and night. For they are one. (Heraclitus, DK 57)

Changing, it rests. (Heraclitus, DK 84a)

The hidden harmony is better than the apparent. (Heraclitus, DK 54)

They do not understand how that which is opposed agrees with itself. There is a harmony of opposites, as in the case of the bow and the lyre. (Heraclitus, DK 51)

The opposite [is] useful, and from those differing [comes the] most beautiful harmony and all things come to be by strife. (Heraclitus, DK 8)

War is the father of all things, the king of all things, and these he has shown gods but those men, and these he has made slaves and those free. (Heraclitus, DK 53)

We must know that war is common and strife is justice, and that all things come into being by strife and fate [necessity]. (Heraclitus, DK 80)

It is wise, listening not to me but to reason, to agree that all things are one. (Heraclitus, DK 50)

All things are exchanged for fire and fire, for all things; just as goods for gold and gold for goods. (Heraclitus, DK 90)

Beginning and end are common in the circumference of the circle. (Heraclitus, DK 103)

The way up and down is one and the same. (Heraclitus, DK 60)

The death of earth is water coming to be and the death of water is air coming to be and of air, fire and the reverse. The death of fire is coming to be for air, and the death of air is coming to be for water. (Heraclitus, DK 76)

It is death to souls to become water, and death to water to become earth; water comes to be from earth and the soul from water. (Heraclitus, DK 36)

This universe, which is the same for all, no god or man has made, but it always was, is and will be an everlasting fire, kindled in measures and extinguished in measures. (Heraclitus, DK 30)

The most beautiful universe is a heap piled up at random. (Heraclitus, DK 124)

One could not find in going the ends of the soul, having traveled every road - so deep is the reason it has. (Heraclitus, DK 45)

EMPEDOCLES

Hear first the four roots of all things: bright Zeus, life-giving Hera, and Hades and Nestis who moistens with tears the springs of mortals. (Empedocles, DK 6)

Come now. I will tell you first...from what comes to be visible all the things we now see: the earth and the sea swelling with many waves and the moist lower air and the Titan upper air which binds tight all these things around in a circle. (Empedocles, DK 38)

But the pleasing earth in its broad melting pots received two of the eight parts of glittering Nestis and four of Hephaistos. And these became white bones begotten divinely by the gluing of harmony. (Empedocles, DK 96)

The earth, anchored in the harbors of Cypris came together with these in about equal measure, with Hephaistos, water and the all-shining upper air either a little more or less than their greater share. And from thee came blood and the forms of other flesh. (Empedocles, DK 98)

And I will tell you another thing. There is no birth of any mortal thing, nor end in destructive death, but there is only a mixing and an exchange of what has been mixed; birth, however, is a name given to these by men (Empedocles, DK 8)

But they, when these have been mixed in a way suited to men or to the race of wild beasts or to bushes or birds of prey, say then that this has been born; and when these have been separated, they call it wretched death. They do not name these things rightly, but I also follow the custom. (Empedocles, DK 9)

Fools. For they have no far reaching minds who think that what before was not comes to be or that anything dies and is destroyed utterly in every way. (Empedocles, DK 11)

For it is impossible that anything comes to be from what in no way is, and that what-is should perish completely is not accomplished or heard of. For it will always be there where anyone ever puts it. (Empedocles, DK 12)

For a wise man would not guess such things in his mind as that as long as they live what they call life, so long they are, and experience wretched things and good things; but that before mortals were fastened together and after they are unfastened, they are then nothing. (Empedocles, DK 15)

Nor does anything of the whole become empty or overfull. (Empedocles, DK 13)

Nothing of the whole is empty; so whence could anything additional come? (Empedocles, DK 14)

I shall tell something double: at one time it grew from the many to be only one; at another time, on the other hand, it grew apart from the one to be many. There is a double birth of mortals and a double death. The coming together of all things gives birth to and destroys one; the other, on the contrary, nourished as

things grow apart, flies in all directions. And in no place do these things stop taking turns forever: at one time, all things come together by love; at another time again, everything is carried away by the hate of strife. Thus, insofar as the one is accustomed to grow from the many and again the many spring from the one breaking up; in this way, they come to be and there is no lasting life for them; but insofar as they never stop taking turns forever, in this way they are always immovable throughout the cycle.

But come listen to my words for truly learning causes the mind to grow. For as I said before, making known the ends of my words. I shall tell about something twofold. For at one time there grew to be only one out of the many; at another time again, the many grew apart from the one - fire and water and earth and the immense height of air and destructive strife apart from these equal in weight everywhere, and love amidst them, equal in length and width. But look at her with your mind, and do not sit with your eyes in amazement. It is she who is recognized to be inborn in the limbs of mortals by whom they think friendly things and achieve concord calling her by the name of Joy or Aphrodite. No mortal man has found her out, going to and fro among them, but you listen to the undeceiving course of my words.

All these are equal and are of the same generation. Each one cares for its own position by means of the character belonging to it. And they hold sway in turn as time revolves. And besides these, nothing comes into being nor ceases to be. If they had been perishing continually, they would be no longer. And what could increase the whole? And where could it come from" And where could it perish, since no place is empty of these things? But only these things are, and running through one another, they become different things at different times and are ever continuously alike." (Empedocles, DK 17)

But come, behold the witness of my former words, if anything was lacking in their form: the sun bright to see and everywhere warm, and all the immortals steeped in heat and bright light, the rain everywhere dark and cold, and from the earth flow forth things solid and based on the soil. In hate they become endued with form and separated; in love, they come together and are desired by each other. From these come forth all the things that were and are and will be, trees and men and women, beasts and

birds of prey and fishes nurtured and living in the water, and the long-lived gods highest in honor. These alone are, but running through one another, they become different; so much are they changed through mixing. (Empedocles, DK 21)

As when painters decorate temple-offerings, men will taught about art by wisdom, these, when they have taken many-colored dyes with their hands, mix some more and some less in harmony and from these makes forms resembling all things, making trees and men and women, beasts and birds of prey and fish nurtured and living in water and the long-lived gods highest in honor; thus, let not deception overcome your mind that there is any other source of mortal things as appear in unspeakably great numbers; but know these things clearly for you have heard this account from a goddess (the Muse). (Empedocles, DK 23)

On it, many sides of foreheads without necks burst forth, and bare arms wandered, bereft of shoulders, and eyes wandered in need of foreheads. (Empedocles, DK 57)

But yet, when god was more mixed with god, these things fell together in whatever way everyone happened to meet; and many other things besides them continually came to be. (Empedocles, DK 59)

Many things were born with two faces and two breasts, offspring of cattle with faces of men, others the reverse, born of men with the heads of oxen, mixed in part from men and in part female by nature, adorned with dark limbs. (Empedocles, DK 61)

By earth, we see earth; by water, water; godlike air by air; destroying fire by fire; love by love; and hate by hate. (Empedocles, DK 109)

Nourished in the sea of blood, which goes in two directions, here especially is what men call thought, for the blood around the heart in men is thought. (Empedocles, DK 105)

ANAXAGORAS

How could hair come from what is not hair, and flesh from what is not flesh? (Anaxagoras, DK 10)

All things were together, unlimited in number and smallness. For the small was also unlimited. And all things being together, nothing was clear because of smallness. Air and aether, both being unlimited, encompassed all things for these are the greatest in number and size among all things. (Anaxagoras, DK 1)

These things being so, it is necessary to think that there are many things of all kinds in all compounds and the seeds of all things having all kinds of shapes and colors and flavors. And men too were fitted together, and all other creatures which have soul. And the men possessed both inhabited cities and artificial works just like ourselves, and they had sun and moon and the rest, just as we have, and the earth produced for them many and diverse things, of which they collected the most useful, and now use them for their dwellings. This I say concerning separation, that it must have taken place not only with us, but elsewhere.

Before these things were separated, all things were together, and no color was clear. For the mixture of all things prevented this - of the moist and the dry, and of the hot and the cold, and of the bright and the dark, and of much earth in it, and of seeds infinite in multitude and nothing like each other. For none of the others are similar one to the other. These things being so, it is necessary to think that all things exist in the whole together. (Anaxagoras, DK 4)

Nor is there a smallest of the small, but there is always a smaller for what-is cannot cease to be [by being cut]. But there is also something greater than the great, and it is equal to the small in number, but each thing to itself is both great and small. (Anaxagoras, DK 3)

And since the parts of the large and the small are equal in number, thus all things must be in everything. Nor is it possible to exist apart from other things, but all things have a share of everything. Since a smallest cannot be, it is not able to be separated, or to come to be by itself, but just as the beginning, so now they are all together. Many things are in all things, and the things separated into the greater and the smaller are equal in number (Anaxagoras, DK 6)

The things in the one world are not separated from each other, nor cut off with an axe, neither the warm from the cold, nor the cold from the warm. (Anaxagoras, DK 8)

So the multitude of things separated cannot be known in word or in deed. (Anaxagoras, DK 7)

These things thus revolve and are separated by force and speed. And the speed makes the force. The speed of these things is not like the speed in any of the things that are now among men, but altogether many times as fast (Anaxagoras, DK 9)

The thick and the moist and the cold and the dark came together where now is the earth, and the thin and the warm and the dry went outward to the further part of the aether. (Anaxagoras, DK 15)

From these things as they separated off, the earth was solidified, from the clouds, water was separated, and from the water, earth, and from the earth, stones were solidified by the cold, and these things rush outward more than water. (Anaxagoras, DK 16)

The Greeks do not rightly take coming into being and perishing. Nothing comes to be or perishes, but is mixed and separated from existing things. And thus they would be right to call coming to be, mixing and perishing, separating. (Anaxagoras, DK 17)

These things having been thus separated, it is necessary to know that all things are neither more nor less; for it is not possible for more than all to be, but all things are forever equal. (Anaxagoras, DK 5)

And when the mind began to move things, it was separated from everything; and as much as the mind moved, all this was separated. As things were being moved and separated, the revolution made them separate even more (Anaxagoras, DK 13)

In everything there is a part of everything except mind, and there are also other things in which there is mind. (Anaxagoras, DK 11)

The mind, which always is, is indeed now where all other things are, in the whole surrounding mass, and in the things joined to it and in the things separated from it. (Anaxagoras, DK 14)

Other things have a part of everything, but mind is unlimited and self-ruling and is mixed with nothing, but is itself alone by itself. For if it were not by itself, but were mixed with something other, it would have a share of all things if it were mixed with any; for there is a part of everything in everything, as has been said by me in what goes before. And the things mixed with it would hinder it, so that it would rule over nothing like it does being alone by itself. For it is the thinnest of all things and the purest, and it has all knowledge about everything and has the greatest power. And mind rules all things which have life, both the greater and the lesser. And mind ruled over the whole revolution, so that it began to revolve in the beginning. And first it began to revolve from something small, but now it revolves over a greater distance, and it will revolve over more. And mind knows all the things mixed together and those separated off, and those divided. And mind set in order all things that were to be, and all things that were but now are not, and whatever is now and whatever things will be, and this revolution in which the stars and the sun and the moon and the air and the aether go round, having been separated off. This revolution has caused them to be separated. The thick is separated from the thin, and the warm from the cold, and the bright from the dark, and the dry from the moist. There are many parts of many things. Nothing is separated off nor divided entirely the one from the other, except mind. Every mind is similar, both the greater and the lesser. Nothing else is like anything else, but each thing is and was most clearly those things of which it has the most. (Anaxagoras, DK 12)

LEUCIPPUS

Nothing happens at random; but everything comes to be from reason and by necessity. (Leucippus, DK 2)

DEMOCRITUS

Sweet exists by custom, the bitter by custom, the warm by custom, the cold by custom, color by custom; but truly the atoms and the empty. (Democritus, DK 9)

Man is a little universe (*Microcosm*). (Democritus, DK 34)

We have become pupils in the most important things: of the spider for spinning and mending, of the swallow for building, and of the songsters, swan and nightingale, for singing, by way of imitation. (Democritus, DK 154)

Duane H. Berquist

NATURAL FRAGMENTS OF THE FIRST PHILOSOPHERS

With the fictitious sharpness of historical divisions, we can say that philosophy began in the Greek city of Miletus on the coast of Asia Minor (in what is today Turkey) around the year 600 B.C.

The first philosopher was Thales, a citizen of Miletus, as were the next two philosophers, Anaximander and Anaximenes.

It began, as both Plato and Aristotle tell us, because of wonder. Wonder is the natural desire to know for its own sake. When this desire becomes strong, one not only wants to know the way things are, but also *why* they are the way they are. The question *why* asks for the cause. And since some causes have a cause, wonder also leads us to seek the cause of the cause; and hence, eventually, the first cause. Thus out of wonder, the first philosophers sought the first cause of all things.

Since man's knowledge begins with his senses, we first equate *all* things with *sensible* things. Sensible things contain natural things and artificial things. But artificial things have something natural as their original causes. The wooden chair, for example, comes from the wood of a tree and is fashioned by the hands of the carpenter. The tree and the hands of the carpenter are by nature. Hence, natural things are the causes of artificial things. Thus, if one could find the first cause of natural things, one would have found the first cause, so it seems, of all things. The first philosophers, then, were natural philosophers, seeking the first cause or causes of natural things.

In reading the first natural philosophers, we should follow the road from reasonable guesses to reasoned out knowledge. And since they came first along this road, we should especially seek to understand what they said as a reasonable guess. But before we do this, we must understand what it means to call a guess *reasonable*.

A guess can be called reasonable because there is a reason (or a good reason) for it, or because reason is naturally inclined to it. A guess can be reasonable in one or both of these ways.

THALES

Water is the beginning of all things.

Thales, the first philosopher, made the reasonable guess that water is the beginning of all things. Since this was the first reasonable guess, we should consider fully how it was reasonable. We shall do so in six steps going from the general to the particular. We can distinguish these steps by the question to be asked about each.

Is it reasonable to look for the *beginning* of things? And if it is, is it reasonable to look for *one* beginning? And if it is, is it reasonable to look for one beginning in the sense of one *matter?* And is it reasonable to think that this one matter is *simple?* And if it is, is it reasonable to think that this one matter is something *formless* (shapeless, colorless, tasteless etc.) like water, but able to take on all kinds of forms? And is the very particular guess of *water* reasonable?

Reason is naturally inclined to try to understand things. And when we try to understand things, we look for their beginning. The man who considers something from its beginning will understand it best. If we try to understand a fight or a war, we look for how it began. When a biographer tries to understand the man, he goes back to his origin. Likewise, when the historian tries to understand a country. Alexis de Tocqueville says that we are in a better position to understand the United States than his own country of France since we can see the origin of the former while that of the latter is lost in antiquity. It is the very nature, then, of reason to look for the beginning of things when it tries to understand them. Hence, in one sense of the word, at least, it was reasonable for Thales to look for the beginning of things or of natural things.

Moreover, reason naturally seeks order when it tries to understand something. Order, however, is a before and after. But before and after are determined by, or in comparison to, some beginning. Hence, Aristotle distinguishes the senses of before and after in the fifth book of the *Metaphysics* starting from the common understanding of beginning.

Further, man naturally wonders. Wonder however is the natural desire to know for its own sake the cause. But every cause is a beginning. Hence, wonder leads men, and especially philosophers, to think about the beginning of things.

Was it reasonable to look for *one* beginning? Everyone who has considered reason knows that reason naturally looks for order. But order is based on something one, on some unity. We cannot see events in chronological order without ordering them before or after one event. The order of an army is based on one man. If a country has more than one government, there is chaos. Hence, just as reason naturally seeks order, it also naturally seeks *one* basis of this order.

Further, if something can be explained with fewer or less causes, reason is inclined to follow this explanation. Hence, in the absence of a reason for saying one beginning is not sufficient, reason naturally seeks to understand by one. For example, we naturally assume that there is one sun explaining 365 days and nights in the absence of any reason for saying the sun today is a different sun from that of yesterday.

Moreover, it is a property of one to be a beginning, as Aristotle points out in the fifth book of the *Metaphysics*. Hence, it is reasonable to think of the beginning as one.

Thales looked for one beginning of natural things in the sense of one *matter*. Was it reasonable to look for one matter rather than one mover or maker? The dependence of material things upon the matter out of which they are made is more known to us than their dependence upon a maker or mover. If one came upon the word *cat* on a board, its dependence upon the letters *c, a,* and *t* would be more undeniable than its dependence upon some maker who is unseen. If one erased the letters, the word would not exist anymore; so that it is difficult to deny the dependence of the word upon that out of which it is made. Perhaps material things depend for their existence, or coming into existence, upon something else besides their matter. But this dependence upon matter is what is most known to us and should be investigated first.

But if one looks for one matter out of which all things are made, is it reasonable to look for a *simple* matter? Simple does not mean the same as one. Thomas Aquinas explains this point:

> unum et simplex non idem significant, sed unum significat mensuram, ut in decimo ostensum est; simplex autem significat

dispositionem, secundum quam aliquid aliqualiter se habet, quia videlicet non est ex pluribus constitutum.[1]

Since everything is either simple or composed, and the composed has something before it (namely the simple from which it is put together), the first matter must be simple. Otherwise, there would be something before it which contradicts being *first*.

If it was reasonable for Thales to look for one matter, was it also reasonable for him to take a formless matter like water (not necessarily water)? Water is more or less formless (that is, shapeless, colorless, tasteless etc.) but capable of taking on any form. If there is one matter for all things, this matter cannot have any definite form; for then all things would be limited to this one form. Hence, it is reasonable to think that the first matter, if not water, is like water in being formless.[2]

At last, was it reasonable in particular to take water as the one formless matter out of which all natural things are made? Aristotle, in discussing the position of Thales, states that Thales was influenced by living bodies. The grass grows when it is watered and even today the biologist would say that we are mostly water. The seeds of things do not give origin to anything unless they are moist. And as far as the non-living or physical world is concerned, everything there is either a gas or a liquid or a solid. And water is the only thing in our ordinary experience that becomes a gas, a liquid and a solid. Hence, it seems to be the only thing capable of becoming all things. Someone might wonder whether rocks can come out of water. But anyone who has seen rocks from the petrified forest can trace rocks through trees back to water.

The modern scientist would not think that water is the first matter, but it is close to hydrogen the simplest element. That there is something before

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[1] *In XII Metaphysicorum*, Lectio VII, n. 2525

[2] Shakespeare, *Othello*, Act V, Sc. 2, the mistaken Othello about Desdemona:

She was false as water.

Compare this remark with the name and character of Proteus in *The Two Gentlemen of Verona*.

water, such as hydrogen or oxygen, can only be known by ingenious experiments. To our senses water appears simple and homogenous.

The theologian says that God, not water, is the beginning of all things. But God is sometimes called water *metaphorically* for a reason similar to that which moved Thales. God is the source of life and thus in the Psalms, the soul is said to thirst for God, seeking fuller life in God. This is also a reason why baptism has water as a sign in communicating a new life to the soul.

ANAXIMANDER

> The unlimited is the beginning of existing things. That from which existing things come to be is also that into which they are corrupted by necessity. For they render justice and give up injustice to one another according to the order of time. (Anaximander, DK 1)
>
> The nature of the unlimited is everlasting and does not grow old. (Anaximander, DK 2)
>
> The unlimited is immortal and indestructible. (Anaximander, DK 3)

The second philosopher, Anaximander, was influenced by Thales. Like a good student, he listened to what Thales said and developed it. But he also had the good sense to know how far to follow Thales. Anaximander is reported to have made the statement that water animals come before land animals. This is a reasonable conclusion to be drawn by someone who has had impressed on his mind (by Thales) that water is the beginning, especially, of living things. Anaximander is also said to have confirmed this deduction or given a sign confirming it. The frog begins its life as a newt, swimming around like a fish. It then becomes something of a land animal. But Anaximander did not say that water is the beginning of all things. Rather he said that the unlimited is the beginning of all things.

The first question that arises about the position of Anaximander is whether he is following the natural road from the senses into reason. The unlimited is not something we can see, hear, smell, taste or touch.

But does following the road from the senses into reason mean that we can only talk about what we can sense? Are we prevented from reasoning along this road? Surely, if we reason from what we can sense, we are still following the road, even if we reason to the existence of something we cannot sense. The road from the senses into reason does not stop at the senses.

But is there anything in our sense-experience which could lead our reason to think that the beginning of all natural things is something unlimited? Every spring and also at other times of the year, new and diverse things come into existence. Year after year this happens and there seems to be no end to it. Hence the beginning or source of things must be unlimited or endless in some quantitative sense.

And Thales had already begun to think of the beginning of things as unlimited in a qualitative sense. Water is more or less formless and without qualities. But water is not entirely so. In its natural environment, water is wet and cold. Thales was on the right track, Anaximander might have thought, but he has not gone all the way. If the beginning or source of all things is definitely wet and cold, it could not be the beginning of the hot or the dry. Like a good student, then, Anaximander developed the insight of Thales that the first matter is formless. But he had the good sense to see that water is not entirely unlimited in its qualities. Hence, he reasonably concluded that the first matter is unlimited in a qualitative sense as well as in a quantitative sense.

Anaximander also saw that the beginning of things must be their end. This is reasonable. If a child makes something out of wooden blocks and then knocks it down or apart, he should not expect to find a (plastic) Lego set, but rather what he began with (wooden blocks). If the child makes something out of a plastic Lego set, he should not expect when he takes it apart , to find a (metal) erector set or a set of wooden blocks. If the beginning of all things is still found at their end, then the beginning of all things is eternal and unchanging. Hence, Anaximander attributes eternity and not growing old and not perishing to the unlimited. Indeed, all the first philosophers seem to have thought that the beginning of things is imperishable and eternal. The first matter could not be broken down into nothing or something. If it could be cut up into nothing, then it would have been made out of nothing (for a thing is cut up into what it is made up of). But this is impossible. It would have been nothing. Nor can the first matter be broken down into something else, because this something else would then be the matter of the first matter. Hence, there would be something

before the first which is absurd. Or this something else would be the first matter. So whatever is the first matter is not from anything else.

Anaximander also spoke of justice and injustice in the natural world. We follow him in speaking of laws, obedience and debts in natural things. Since man is by nature a political animal, he must communicate about the city. Hence, he has names for what is found in the city. But when we turn from the city to nature, we do not have names for like things. But rather than invent new names for what we find in the natural world, we carry over old names from the city by the likeness of natural things to them. But when we speak of natural things as obeying laws, a new meaning is given to *law* and *obedience*, but these new meanings have some likeness to the first meanings. In this way, our reason is led from the more known to the less known in naming and understanding names.

Aristotle in the third book of *Natural Hearing* (the *Physics*) states that all the first thinkers thought that the infinite was the beginning or that the beginning was infinite.[3]

Thomas Aquinas, the Commentator, writes thus upon the words of the Philosopher there:

> Deinde...ponit quatuor, in quibus antiqui philosophi concordabant circa infinitum.
>
> Quorum primum est, quod omnes posuerunt infinitum esse principium; et hoc rationabiliter, idest per probabilem rationem. Non enim possibile est, si infinitum est, quod sit frustra, idest quod non habeat aliquem determinatum gradum in entibus. Nec potest habere aliam virtutem nisi principii: quia omnia quae sunt in mundo, vel sunt principia vel ex principiis; infinito autem non competit habere principium, quia quod habet principium, habet finem. Unde relinquitur quod infinitum sit principium.
>
> Sed attendendum est quod in hac ratione utuntur aequivoce *principio* et *fine:* nam quod est ex principio, habet principium

[3] 203b 4-15

originis; infinito autem repugnat principium et finis *quantitatis* vel magnitudinis.

Secundum autem quod attribuebant infinito est, quod sit ingenitum et incorruptibile. Et hoc sequitur ex eo quod est principium. Omne enim quod fit, necesse est quod accipiat finem, sicut et habet principium; et etiam cuiuslibet corruptionis est aliquis finis: finis autem repugnat infinito; unde esse generabile et corruptibile repugnat infinito. Et sic patet quod non est aliquod principium infiniti, sed magis infinitum est principium aliorum.

Et in hoc etiam aequivoce sumebant *principium* et *finem*, sicut et supra.

Tertium autem quod attribuebant infinito erat, quod contineret et gubernaret omnia: hoc enim videtur esse primi principii.

Et hoc dixerunt quicumque non posuerunt praeter materiam, quam dicebant infinitam, alias causas, scilicet agentes, ut intellectum posuit Anaxagoras et concordiam Empedocles. Continere enim et gubernare magis pertinet ad principium agens, quam ad materiam.

Quartum autem quod infinito attribuebant est, quod est quoddam divinum: omne enim quod est immortale aut incorruptibile, divinum appellabant: et hoc posuit Anaximander et plures antiquorum philosophorum naturalium.[4]

In the chapter on God being infinite or unlimited in the *Summa Contra Gentiles* (Book One, Chapter 43), Thomas looks back to the anticipation of this in the first philosophers:

Huic etiam veritati attestantur antiquissimorum philosophorum dicta, qui omnes infinitum posuerunt primum rerum principium, quasi ab ipsa veritate coacti.

Propriam enim vocem ignorabant, aestimantes, infinitatem primi principii ad modum quantitatis discretae, secundum Democritum, qui posuit atomos infinitos rerum principia, et secundum

[4] *In III Physicorum*, Lectio VI, n. 335

> Anaxagoram, qui posuit infinitas partes consimiles principia rerum; vel ad modum quantitatis continuae, secundum illos qui posuerunt aliquod elementum, vel confusum aliquod infinitum corpus, esse primum omnium principium.
>
> Sed cum ostensum sit per sequentium philosophorum studium quod non est aliquod corpus infinitum; et huic coniungatur quod oportet esse primum principium aliquo modo infinitum: concluditur quod neque est corpus neque virtus in corpore infinitum quod est primum principium.[5]

But in the *Summa Theologiae,* Thomas attributes their thinking to a reason for thinking it.

> ...omnes antiqui philosophi attribuunt infinitum primo principio, ut dicitur in III *Physicorum:* et hoc rationabiliter, considerantes res effluere a primo principio in infinitum.[6]

We have thus seen Thomas sometimes attributes their thinking the same to a reason and to being coerced by truth itself. But to be coerced by truth itself is the same or like following the natural inclination of reason. Thomas explains this phrase of Aristotle in the first book of *Natural Hearing*.

> Dicit ergo primo quod, sicut supra dictum est, multi philosophorum secuti sunt veritatem usque ad hoc, quod ponerent principia esse contraria. Quod quidem licet vere ponerent, non tamen quasi ab aliqua ratione moti hoc ponebant, sed sicut ab ipsa veritate coacti.
>
> Verum enim est bonum intellectus, ad quod naturaliter ordinatur: unde sicut res cognitione carentes moventur ad suos fines absque ratione, ita interdum intellectus hominis quadam naturali inclinatione tendit in veritatem, licet rationem veritatis non percipiat.[7]

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[5] *Summa Contra Gentiles*, Book One, Chapter 43
[6] *Summa Theologiae,* Prima Pars, Q, 7, Art. 1, c.
[7] *In I Physicorum*, Lectio X, n. 79

ANAXIMENES

> Just as our soul, being air, holds us together, so do breath and air surround the whole world. (Anaximenes, DK 2)

Anaximenes, the third philosopher and Milesian (or citizen of Miletus), said that air was the beginning of all things. Like Thales, he also was influenced by living things. Those most familiar to us need to breathe in order to live and when they stop breathing, they die. Indeed, some of the early Greek philosophers, like the poets and the popular imagination, thought of the soul as air. The Greek word for soul means first of all air or breath. Homer describes a man badly injured in battle. His soul is starting to leave his body, but a strong wind comes up and forces his soul back into his body and he survives.

Was it more reasonable to guess air than water or the unlimited as the beginning of things? Anaximenes could have been led by Anaximander's thought to say air rather than water. If the beginning of things must be unlimited in both a quantitative and a qualitative sense, we have two reasons why air is a better guess than water as the beginning of all things. For there is more air than water around. There is air over all the earth, even over the desert which is lacking water. And air seems to go up and up above us, perhaps forever.

Air is not more unlimited than the unlimited, but it is easier for our mind because air is somewhat sensible.

Another reason why air is a better guess than water can be seen if we compare these guesses with the statement of the poet Hesiod before them. Hesiod, like other poets, emphasizes mother earth as the beginning of things. Shakespeare, in his play Timon of Athens, has Timon address the earth: "Common mother, thou, whose womb immeasurable and infinite breast, teems and feeds all." Mother earth is spoken of as the beginning of all things and also as infinite. The order of the three guesses is interesting: mother earth, water, and then air. Mother earth is the most sensible, and air, the least sensible, being invisible. When there is only air in a room, we often say it is empty or that there is nothing in that room. Water is, of course, in-between. It is visible although to some extent transparent. Earth seems to be the thickest of the three and air the thinnest. (Hence, Shakespeare says, "Strike flat, the thick rotundity of the earth" and "they are vanished into air, into thin air") Now the thick cannot be

the matter of the thin. We cannot make something thin out of something thick; the thin cannot be composed of the thick. But many layers of the thin can make up something thick; as, for example, a thick book is made out of many thin pages. Moreover, matter is like parts (and form like the whole) and the part is smaller than the whole. Hence, the first matter should have the thinnest and smallest pieces. In this way, water is a better guess than earth; and air, than water.

As Aristotle points out in the first book of *Natural Hearing* (the *Physics*), those who said there was one first matter generated other things out of it by rarefaction and condensation. Erwin Schrödinger comments on this:

> [Anaximenes] "from a careful consideration of everyday experience...abstracted the thesis that every piece of matter can take on the solid, the liquid, the gaseous and "fiery" state; that the changes between these states do not imply a change of nature, but are brought about geometrically, as it were, by the spreading of the same amount of matter over a larger and larger volume (rarefaction) or - in the opposite transitions - by its being reduced or compressed into a smaller and smaller volume. This idea is so absolutely to the point that a modern introduction into physical science could take it over without any relevant change. Moreover, it is certainly not an unfounded guess, but the outcome of careful observation.[8]

PYTHAGORAS

The harmony of the octave comes from the ratio of two to one.

Pythagoras came from the island of Samos, off the coast of Asia Minor. But he emigrated to southern Italy which became a center of Pythagorean studies. Pythagoras comes into natural philosophy from mathematics. Pythagoras has left his name on a famous theorem in geometry, but this is only part of his work in pure mathematics. To Pythagoras is also attributed the discovery that

[8] *Science and Humanism,* p. 56

harmonious sounds in music are produced by objects in simple numerical ratios. The octave, for example, is produced by objects in the ratio of two to one. This inspired him and his followers to look for simple numbers and ratios under all natural phenomena. In this way, Pythagoras is regarded as the founder of the mathematical science of natural things.

Although Pythagoras may have spoken as if natural things were made out of numbers, he is really talking about a different kind of cause from that investigated by the first three philosophers. There is no matter in pure mathematics, and the mathematician talks about another kind of cause. This kind of cause could be called form. By form, we mean not only shape, but also order and ratio. The words *cat* and *act* have the same matter or letters, but they are different words because of the order of these letters. Likewise, different things can be made out of the same matter (for example, wood) by giving this matter a different shape. The importance of ratio is seen in the difference between carbon monoxide and carbon dioxide. The ratio of two to one is harmless, but the ratio of one to one will kill you. But both are made out of carbon and oxygen. We thus have a second kind of cause. Besides matter, there is the shape, or order, or ratio of the matter. Being accustomed to this kind of cause in pure mathematics, it is not surprising that Pythagoras should have been the first to recognize it in the natural world.

HERACLITUS

We have many more fragments from the next philosopher, Heraclitus, than from the philosophers before him. Heraclitus is from Ephesus, also on the coast of Asia Minor (or present-day Turkey). Heraclitus is perhaps the most central thinker in human history. One of his followers, Cratylus, was a teacher of Plato; and even in old age, Plato still held on to things he had learned from the Heracliteans. Aristotle gave full development to many of the seeds or guiding thoughts of Heraclitus. In modern times, Hegel and the Marxists have taken off from Heraclitus in another direction. Heisenberg says that if we substitute the word energy for fire in one of the fragments of Heraclitus, we have what modern science is saying.

Nature loves to hide. (Heraclitus, DK 123)

Nature is a cause within of motion or change in that in which it is. What is within is hidden from us whose knowledge begins with the senses. The senses know the outside of things. Hence, *outward* in English is almost a synonym for *sensible*. But the natures of things become known to us through their different motions or changes in the same outward circumstances. If the tree grows and the stone does not grow in the same soil with the same rain and sunlight, we can guess that the nature of the tree is different from the nature of the stone. If the outside is the same, the difference must be due to what is within.

It is not possible to step twice into the same river. (Heraclitus, DK 91)

Heraclitus is famous for insisting on the change in the world around us. Heraclitus is supposed to have said that *all things flow, nothing abides*. He used the flowing river as an image of the world. It is impossible to step twice into the same river for other waters are there when one returns. One of his followers said that it is impossible to step even once into the same river. For as one's foot descends, there are other and other waters. Max Born, who stands at the center of modern physics, wrote a famous book with the title *The Restless Universe*, in which he stated that it is strange that we have a word, *rest*, for what does not exist. This thought produced a kind of crisis in Plato who wanted to understand things. It is impossible to *understand* things that do not stand still. Some of Heraclitus' extreme followers said that you cannot say anything about the world that is true because, before you have finished your statement, the world will have changed. All one can do is point to the moving object.

Whatever one might think about the universality of change in the world, there can be little question that Heraclitus is forcing our attention on what is most striking to our senses. As Shakespeare says, "things in motion sooner catch the eye than what not stirs". And since our knowledge begins with our senses, change or changing things are what we first think about. If we do not understand change, we do not understand changing things. And if we do not understand changing things, we do not understand unchanging things. For the unchanging is known by the negation of the changing. And if we do not know changing or unchanging things, we do not know anything. Hence, if we do not understand change, we do not understand anything. Heraclitus is calling our attention to what we must first understand. And as we shall see, he also helps us to understand change.

> We step and do not step into the same rivers; we are and we are not. (Heraclitus, DK 49a)
>
> The sun is new every day. (Heraclitus, DK 6)
>
> Cold things become warm and the warm becomes cold; the wet dries, and the dry becomes wet. (Heraclitus, DK 126)
>
> The same in us is the living and the dead, the awake and the asleep, the young and the old. For the former having changed are the latter, and again, these having changed are the former. (Heraclitus, DK 88)
>
> Hesiod is the teacher of most men. They believe he knew very many things who did not know day and night. For they are one. (Heraclitus, DK 57)
>
> Changing, it rests. (Heraclitus, DK 84a)

Heraclitus emphasizes not only change, but also the opposites in change. Change is between opposites. Indeed we all say that this becomes its opposite. The cold becomes hot and the hot becomes cold. The dry becomes wet and the wet becomes dry. Since *becomes* means *comes to be*, we are saying that one opposite has come to be the other. And if one has come to be the other, then one is the other. Heraclitus thus points out what seems to be a contradiction in change. He tells us that day and night are the same and that the sleeping are awake and that the living are dead. If you say that the cold does not really come to be hot, then the cold remains forever cold. And the same is true of any other opposite. Hence, to deny that one opposite becomes the other is to deny the fact of change. On the other hand, to admit that one opposite really becomes the other is to admit a contradiction. But this is impossible as Parmenides pointed out. It is impossible to both be and not be at the same time. Hence one opposite cannot be the other. Should one follow Heraclitus' insistence on change and admit a contradiction? Or should one follow Parmenides' insistence on the impossibility of a contradiction in things and reject change as an illusion? Heraclitus has more followers, but Zeno tried to defend Parmenides.

Would it be more reasonable to follow Heraclitus or Parmenides? More follow Heraclitus because our knowledge begins in our senses and nothing is more

striking to our senses than change. But if it is reasonable to resolve differences of opinion by going back to a common basis among those disagreeing (as Heraclitus himself so forcefully insisted), we must find the common basis between Heraclitus and Parmenides. They agree that it is necessary to choose between change and the statement about the impossibility of contradiction. But why is this necessary? Because they are incompatible if change involves a real contradiction. The statement *Change exists* would then contradict the statement about the impossibility of a contradiction. Thus, in agreeing that one cannot reconcile change with the statement about contradiction, they are both basing themselves upon the statement about contradiction. Thus Heraclitus would be in the ridiculous position of denying the statement about contradiction because something contradicts it. He would be denying it because he accepts it.

Moreover, it is absurd to try to save change by admitting that one opposite is the other. If hot and cold, day and night, and so on were the same, not only would one deny the statement about contradiction, but also one would also not save change. For if one opposite were the other, there could be no change from one to the other. There could not be, for example, a change from hot to cold if the same was both hot and cold. We could not wake up from out sleep if we were both awake and asleep. If day was night and night, day, there could be no change from day to night or the reverse.

Parmenides is right in saying that the statement about contradiction is most known, even more known and more sure than the statement *change exists*. But since it is also clear from our senses that change exists, it is also absurd to deny that change exists because of what seems to be a contradiction in it. There must be a way of understanding change that does not involve something impossible, a real contradiction. We must understand how change is possible between opposites without one becoming the other and why we say that one becomes the other although it is impossible for one to be the other and hence to come to be the other. Plato in the *Phaedo* and Aristotle more fully in the first book of *Natural Hearing* (usually called the *Physics*) show how this is possible and why we speak as if one opposite becomes the other. (If we do not admit that the cold can become hot and the hard, soft and so on, it seems that we must say that the cold remains cold forever and the hard, hard forever and so on so that no change ever takes place.)

> The hidden harmony is better than the apparent. (Heraclitus, DK 54)

> They do not understand how that which is opposed agrees with itself. There is a harmony of opposites, as in the case of the bow and the lyre. (Heraclitus, DK 51)

Did Heraclitus really think that day and night are the same, the sleeping and the awake, the same and so on? How could he think thus? Or did he speak thus to stimulate our thinking? He says in another fragment that "we should not act and speak like those asleep." Perhaps he wanted to wake us up by calling our attention to the apparent contradictions in things and our thinking.

If harmony is the opposite of contradiction, Heraclitus may be pointing out something very subtle here. Most men do not realize that in what they see, there is an apparent contradiction; and that in what they think about it, there is a contradiction. They are in a state of apparent harmony. But when Heraclitus or Socrates or some other philosopher points out this apparent contradiction in things or this contradiction in their thinking, they are led to confront the contradiction. But perhaps under this contradiction, there is a hidden a real harmony which we will be led to discover after seeing the contradiction and trying to untie or unravel it or break it down. This hidden harmony is better than the apparent harmony in our thoughts which contradict each other. It is also the real harmony in the thing.

And in DK 51, Heraclitus points out that things which seem to be opposed are sometimes working together. Thus, when one shoots an arrow from a bow, one's hands are pulling in opposite directions. But they are not working to cross-purposes. Rather this is what enables the arrow to go faster and surer to its target.

> The opposite [is] useful, and from those differing [comes the] most beautiful harmony and all things come to be by strife. (Heraclitus, DK 8)

The American political, economic and legal systems are all based on the beginning here: *The opposite is useful*. We think it almost a definition of tyranny to have a one-party system. The opposite party is useful to expose the faults of the other and restrain its excesses. In the economy, we think that competition is useful to develop products, maintain their quality, and keep them reasonably priced. We think it is necessary in the courtroom to have one lawyer trying to prove he is guilty and the other, that he is not guilty, so the jury will better be able to judge. We also think debate a help in investigating and judging a

question or problem. And love and character develop where there is some opposition.

And that the most beautiful harmony comes from those differing is seen in the stars against the black sky and the beauty of the sun at sunrise and sunset and a diamond against a black background and the alternation of light and dark in a Rembrandt painting.

But the third thing said here is said more fully in the next two fragments where we may consider it.

> War is the father of all things, the king of all things, and these he has shown gods but those men, these he has made slaves and those free. (Heraclitus, DK 53)
>
> We must know that war is common and strife is justice, and that all things come into being by strife and fate [necessity]. (Heraclitus, DK 80)

The natural philosophers before Heraclitus had spoken mainly of the cause called matter. But DK 53 and 80 introduce another kind of cause, the mover or maker. In calling war the father and king of all things, Heraclitus is speaking of the mover, not the matter of all things. Perhaps the oldest opinion about the matter of all things is that it is mother earth. We find this in the poets. Shakespeare puts this opinion in the mouth of Timon of Athens as he digs in he earth to find roots. And indeed the Latin word for matter, *materia*, would seem to be derived from the word for mother, *mater*. Hence, when Heraclitus calls war the *father*, he is clearly distinguishing another kind of cause from matter. Mother and father also clearly indicate the order in our knowledge for as Homer and Shakespeare love to remind us, we know more who is our mother than our father. Homer In the *Odyssey* (Book One, lines 207-216), Athena (in disguise) asks Telemachos if he is the son of Odysseus:

> Are you, big as you are, the very child of Odysseus?...
>
> Then the thoughtful Telemachos said to her in answer:
> "See, I will accurately answer all that you ask me.
> My mother says indeed I am his. I for my part
> do not know. Nobody really knows his own father.

Father and *king* are also significant when speaking of the mover. There are two kinds of movers, nature and reason, and father is an example of a mover or maker by nature and the king by reason. After Aristotle defines this kind of cause in the second book of *Natural Hearing* (the *Physics*),[9] he also gives an example of a mover by reason and one by nature: the advisor and the father. Later after the corollaries following upon the four kinds of cause, he returns to the four kinds of cause and when he comes to the mover he again exemplifies (in the reverse order), first the seed (a natural cause) and then the doctor (by art which is right reason about making) and last the advisor (by foresight which is right reason about doing). Art is more like nature than foresight. Hence, Aristotle's order.

Heraclitus tells us what war is responsible for. It is responsible for seeing or making the distinction of things into or by opposites. Men and gods are opposites as can be seen especially in those Homeric synonyms for gods and men, the immortals and the mortals. And the slaves and the free are also opposites.

Since war itself is between opposites, we can see that Heraclitus' thought involves that reasonable statement that *opposite effects have opposite causes* which the great Empedocles follows more explicitly.

Not only are gods and men opposites, and slaves and the free, but they are also unequal. The gods are clearly better than men and the free are better than slaves.

Not only are they opposites and unequal, but also one rules the other. The gods rule over men; and the free, over the slaves.

We cannot pursue all the truth which may be in Heraclitus' fragment here. If there is more truth in it than we see which is not surprising, we must see a part before the whole. And if Heraclitus has seen a part of the truth but boasts of having seen the whole (as Empedocles warns us about), it is not good to follow him in this way. We must be humble and teachable enough to learn from Heraclitus what can be learned from him. But we should not blindly follow him. Hegel and Marx and Darwin may have followed the thought of Heraclitus without enough discretion.

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[9] 194b 29-32

> It is wise, listening not to me but to reason, to agree that all things are one. (Heraclitus, DK 50)

In this fragment, Heraclitus indicates that reason is naturally inclined to seek unity. And like Thales and Anaximenes, Heraclitus looks for one matter. But instead of water or air (or mother earth), he guesses that fire is this one matter as can be seen in the following fragment

> All things are exchanged for fire and fire, for all things; just as goods for gold and gold for goods. (Heraclitus, DK 90)

One could ask whether fire is a better guess than air or water. Perhaps it is finer or thinner than they are as seen by its ability to cut and pierce things. But it seems more limited than water and, *a fortiori*, than air, both in quality and quantity. But perhaps he guesses fire because he is also thinking about the need for a mover. Fire is a better mover than either water or air. Water and air are moved by the heat of fire. But what makes fire a good mover, its being hot, makes it a bad guess in one way as the first matter which must be unlimited in qualities. Perhaps this is a sign of the need to separate the matter and the mover. And we shall see in the Empedocles and even more so in Anaxagoras the separation of these two kinds of cause. Fire then represents an advance in thinking in a mixed way. As the first matter, it is in one way superior to water and air (in fineness), but in other ways (as far as being unlimited) it is inferior. But it also represents an advance insofar as it involves a recognition of the need for another kind of cause, the mover. One might also note that the confusion of matter and mover in also found somewhat in modern science when it makes energy the beginning of all. Hence, Heisenberg compares energy in modern science with fire in Heraclitus. But energy is much more abstract and mathematical than the fire of Heraclitus. And in mathematics, there is neither matter nor motion in the strict sense. Energy appears in the universal equations of modern science and, hence, it is more like the premisses of a syllogism than like the fire of Heraclitus. The premisses of a syllogism are also in one way like the matter and in another way like the mover of maker of the conclusion But these aspects are more separated in the premisses of a syllogism. For the middle term brings together the extreme terms, but the former is not a part of the conclusion as they are.

God is many times called *fire* metaphorically in the *Bible*. The likeness is three fold. The light of fire represents the light of God's understanding, the warmth of

the fire the intensity of the divine love, and the moving power of the fire, the divine power which moves the universe. Sometimes fire is used as a metaphor for the Trinity. Here the substance of the fire represents God the Father and the light which proceeds from the Father, the procession of the Word who proceeds by way of understanding and the procession of the warmth, the procession of the Holy Spirit who proceeds by way of love. Sometimes God is compared to fire or the sun in his action upon us. As the fire or sun enlightens the world before warming it, so too God enlightens our reason by faith before he moves our will to love.[10]

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[10] A Theological Footnote on Sacred Scripture's Use of earth, water, air and fire in talking about matter:

Thomas Aquinas, *Summa Theologiae*, Prima Pars, Q. 66, Art. 1, Ad 1:

> Habet (prima materia) tamen similitudinem cum terra, inquantum subsidet formis; et cum aqua, inquantum est apta formari diversis formis.

Thomas Aquinas, *Summa Theologiae*, Prima Pars, Q. 66, Art. 1, Ad 2:

> Aerem autem et ignem non nominat, quia non est ita manifestum rudibus, quibus Moyses loquebatur, huiusmodi esse corpora, sicut manifestum est de terra et aqua.

Thomas Aquinas, *De Potentia,* Q. 4, Art. 1, Ad 2 in first objections:

> per corpora extrema quae posuit, debet intelligere media; et praecipue quia aquam et terram sensui manifestum est corpora esse, aer vero et ignis non ita sunt simplicibus manifesta, quibus etiam instruendis Scriptura tradebatur.
>
> Secundum vero Augustinum [in dial. LXV, quaest. 21], per nomina *terrae* et *aquae*, quae commemorantur ante luci formationem, non intelliguntur elementa sui formis formata, sed ipsa materia informis omni specie carens.
>
> Ideo autem potius per haec duo materiae informitas exprimitur quam per alia elementa, quia sunt propinquiora informitati, utpote plus de materia habentia, et minus de forma;

> Beginning and end are common in the circumference of the circle. (Heraclitus, DK 103)

The world is more like a circle than a straight line if the beginning of things is also their end as we saw above in the words of Anaximander. If the first matter out of which things are made is also that into which they are broken down, the beginning and end of things is the same. As it is said on Ash Wednesday, "Dust thou art and to dust thou shalt return." Modern science also has this thought with the conservation laws. But in the Bible, God is the beginning and the end of all things in another way. He is their beginning as their maker and their end as their purpose. (not their destruction as when things are broken down into the original matter they came to be from).

> The way up and down is one and the same. (Heraclitus, DK 60)

> The death of earth is water coming to be and the death of water is air coming to be and of air, fire and the reverse. The death of fire is coming to be for air, and the death of air is coming to be for water. (Heraclitus, DK 76)

> It is death to souls to become water, and death to water to become earth; water comes to be from earth and the soul from water. (Heraclitus, DK 36)

In the universe, the earth appears to be in the middle and above the earth is water and above the water is air up to the sun and moon and stars which seem to be fire. Heraclitus sees a movement up and down. If a solid melts and becomes water or a liquid and this evaporates into air and air ignites into fire; and then there is the reverse process following the same road in the opposite direction.

> et qui etiam nobis magis sunt nota, et manifestius nobis materiam aliorum ostendunt.

> This universe, which is the same for all, no god or man has made, but it always was, is and will be an everlasting fire, kindled in measures and extinguished in measures. (Heraclitus, DK 30)

Like the other natural philosophers before him, Heraclitus sees the first matter as eternal (although it is hard to see how fire can be both "everlasting" and "extinguished in measures"). They do not see matter as something which was or could have been created.

> The most beautiful universe is a heap piled up at random. (Heraclitus, DK 124)

If a mindless matter is the beginning of all things, it seems that the universe would be a heap piled up at random. The Latin word for universe means *turned into one* and the Greek word, cosmos, has in its meaning order. We have seen before the connection between order and unity and these two names are a supreme sign of this connection. But if reason naturally inclines us, as Heraclitus said above, to think that all things are one, it also leads us to think of the universe as ordered. But this fragment seems to contradict the other part of Heraclitus' thought. Could it be that Heraclitus saw a certain difficulty in those who say that a mindless matter is the beginning of all things?

> One could not find in going the ends of the soul, having traveled every road - so deep is the reason it has. (Heraclitus, DK 45)

Heraclitus sees the soul or its reason as being unlimited. We shall meet this thought again in the great fragment of Anaxagoras on the mind. This is also in harmony with the first parts of the definition of reason by Shakespeare as the *ability for large discourse*

It is fitting to pause at this point because there is a break in the history of natural philosophy after Heraclitus. The philosophers up to this point insist that there is *one* first beginning or matter. Empedocles and those coming after will look for more than one beginning and matter. We shall examine the reasons why they guessed that there is more than one beginning or more than one first matter. But the philosophers up to this point are especially moved by the inclination of reason towards something one, simple, unchanging and unlimited. This same tendency is found in modern physicists from Galileo to Einstein and beyond. It is also important to consider that in theology, four of the five basic attributes of the divine substance are simple, unlimited, unchanging, and one. In

the *Summa Theologiae*, after showing the existence of God as the first cause, Thomas considers the substance of God in five parts: he is simple, perfect, unlimited, unchanging and one. These words, of course, do not mean the same in theology as in the philosophy of nature. But there is a certain distant likeness. But perfect is not in any way an attribute of matter.

EMPEDOCLES

Empedocles was in what is today Sicily.

> Hear first the four roots of all things: bright Zeus, life-giving Hera, and Hades and Nestis who moistens with tears the springs of mortals. (Empedocles, DK 6)
>
> Come now. I will tell you first...from what comes to be visible all the things we now see: the earth and the sea swelling with many waves and the moist lower air and the Titan upper air which binds tight all these things around in a circle. (Empedocles, DK 38)

In these fragments and especially in DK 6, Empedocles guesses that there are *four* first matters: earth, air, fire and water. Empedocles wrote his philosophy in verse and used the names of gods and goddesses as the poets did. But he is not a poet. Because of the prestige of the poets, some who were not poets would take on an outward appearance of the poets. This is similar to how in our day everyone wants to take on the aura of being scientific because of the prestige of the experimental sciences in our day. It is not too hard to see in DK 6 how the four elements are named. Nestis is of course water, bright Zeus, fire; life-giving Hera, air; and Hades, the god of the underworld, earth.

Was it reasonable for Empedocles to guess that there are four first matters? Since this is the first philosopher to guess that there are many first matters, we had better consider this going from the general to the particular. Was it reasonable to guess that there is more than one first matter? And if so, was it reasonable to distinguish these first matters by opposites? And if so, was it reasonable to distinguish them by the opposites of hot and cold, dry and moist,

rather than hard and soft, or black and white or sweet and bitter or some other pair(s) of opposites?

As regards the first question, we would look for this guess to be reasonable, not in the sense that reason is naturally inclined towards it (reason is more naturally inclined to unity), but in the sense that there is a good reason for it. Perhaps the reason can best be stated in the form of an either-or argument eliminating every possibility. If there is one first matter, either it has definite qualities or it does not. There is no other possibility. But there is a difficulty in either alternative. Let us see how this is so.

The first philosophers, especially Thales, Anaximander and Anaximenes, seemed to think that the first matter must be formless without definite qualities. And the reason for this is that, if the one matter out of which all things were made had any definite quality, everything made out of it would have to have that quality. Hence, the contrary or opposite quality would not exist. If water is wet and cold and everything is made out of water, then everything must be wet and cold. But we live in a world of contraries,. Some things are wet and some are dry, some are hot and some are cold. If fire were the matter of all things, all things would be dry and hot. If sugar were the beginning of all things, all things would be sweet. And so on. Hence, there is a tendency in the first philosophers as they move from mother earth to water and then to air to go in the direction of a first matter without any qualities.

But if we say that the one first matter has no qualities to avoid this difficulty, we fall into another difficulty. These later thinkers, as we will see especially in Empedocles and Anaxagoras, had very much in mind that something cannot be gotten out of nothing. Now if the one first matter had *no* qualities, how would you have any qualities in the universe? If water has no color and one adds water to water, you will still have no color. This difficulty is in some way even greater for it eliminates not only contrary qualities from the universe, but all qualities. One could perhaps get new qualities by combining different qualities, but you cannot get quality out of what has no qualities.

Hence, since all possibilities for the first matter have been eliminated, it is reasonable to guess that there is more than one first matter. But how should these be distinguished? Is it reasonable to distinguish them by opposites?

A little reflection will reveal how reasonable this is. When we distinguish human beings, for example, we do so by opposites. We might distinguish human beings

into good and bad, or into young and old, or into male and female. But it would not make sense to divide human beings into young and female. For the same human being could be both young and female. Nor would it make sense to divide them into young and bad for likewise the same person could be both. One needs to divide by what cannot be found in the same person and these are opposites. Hence, we divide by opposites: good and bad, male and female, young and old, healthy and sick, wealthy and poor, and so on. Thus it is most reasonable to divide by opposites.

But the four elements of Empedocles are distinguished by opposites. Fire and water have opposite qualities: fire is hot and dry while water is wet and cold (in the natural environment). If we think of air as something like steam, it is wet and hot while the earth is cold and dry (it is cool when you dig a cellar and if you take the water out of the earth, it is dry as dust). Every element has at least one opposite that separates it from another, if not two. If steam is hot like fire, unlike fire it is wet. If earth is cold like water, unlike water it is dry (by itself without water).

But is it reasonable to distinguish the first matters in particular by the opposites of hot & cold and wet & dry rather than hard and soft, or black and white, or sweet and bitter, etc.?

Since we are looking for the opposites that distinguish the first matters which are first causes, and one pair of opposites is before another and causes of change in the other, we should distinguish the first matters by opposites that are causes rather than effects of changes in other opposites. Hot and cold are causes of the change in colors. The white paper or bread goes toward black under the influence of heat. The black metal becomes red hot and eventually white hot under the effect of heat. The butter goes from soft to hard by cold and from hard to soft by the hot. The taste and smell of food is changed by heat. The sponge goes from hard to soft by the wet. The bread becomes hard as it dries out. Thus hot & cold and wet & dry are causes of changes in other pairs of contraries. Hence, it is reasonable to distinguish the first causes or first matters which are first causes by contraries that are causes rather than effects.

Empedocles was undoubtedly also influenced in guessing these four by the fact that each of them had been guessed individually by someone before him. As he says in another fragment, men see a part and boast of having seen the whole. He may have thought that each of those who guessed one of these four (Hesiod, or some other poet, guessing earth; Thales, water; Anaximenes, air;

and Heraclitus, fire.) had seen a part of the truth and thought it was the whole truth.

The theory that these are the four elements lasted around two thousand years, from Empedocles around 500 B. C. down to and beyond Shakespeare. We can see why it did. It is so strongly rooted in our sense experience. If we have to come to know the first matters by our senses, and by contraries known by the senses, and these are the *first* contraries known by the senses, it seems impossible to go beyond Empedocles' thought. There is no direct or easy way of doing it.

> But the pleasing earth in its broad melting pots received two of the eight parts of glittering Nestis and four of Hephaistos. And these became white bones begotten divinely by the gluing of harmony. (Empedocles, DK 96)

> The earth, anchored in the harbors of Cypris came together with these in about equal measure, with Hephaistos, water and the all-shining upper air either a little more or less than their greater share. And from these came blood and the forms of other flesh. (Empedocles, DK 98)

In these two fragments, we see Empedocles as the father of the chemical thought we still follow. Empedocles now combines the thought of Pythagoras that there are ratios underlying natural things with the thought that there are four elements. These elements combine in different numerical ratios to become various compounds. Empedocles even tries to explain the qualities of these compounds by the particular ratio of elements in them. As we can see in these fragments, the ratio of dry elements to wet elements in greater in bone than in blood and even than in flesh. As far as the fragment DK 96 takes us, there are only two parts of water to four parts of fire (Hephaistos was the god of fire) in bone. But the ratio is more even in blood and flesh, as can be seen in DK 98.

> And I will tell you another thing. There is no birth of any mortal thing, nor end in destructive death, but there is only a mixing and an exchange of what has been mixed; birth, however, is a name given to these by men (Empedocles, DK 8)

> But they, when these have been mixed in a way suited to men or to the race of wild beasts or to bushes or birds of prey, say then that

> this has been born; and when these have been separated, they call it wretched death. They do not name these things rightly, but I also follow the custom. (Empedocles, DK 9)
>
> Fools. For they have no far reaching minds who think that what before was not comes to be or that anything dies and is destroyed utterly in every way. (Empedocles, DK 11)
>
> For it is impossible that anything comes to be from what in no way is, and that what-is should perish completely is not accomplished or heard of. For it will always be there where anyone ever puts it. (Empedocles, DK 12)
>
> For a wise man would not guess such things in his mind as that as long as they live what they call life, so long they are, and experience wretched things and good things; but that before mortals were fastened together and after they are unfastened, they are then nothing. (Empedocles, DK 15)

In these extremely important fragments, we can see that Empedocles (like perhaps all the first philosophers) thinks that the only change in the world is change of place. We will see this also explicitly in the fragments of Anaxagoras. The reason why they thought there was only change of place is that any other inward change is impossible unless something comes into existence that did not exist before or something in existence was to go out of existence. But if something really came into existence, it was nothing before. But one cannot get something out of nothing. Nor can something be broken down into nothing. One cannot cut something into nothing. We cut a thing up into what it is made out of. So if one could cut something up into nothing, it would have been made out of nothing. But this is impossible. Hence nothing really comes into existence or goes out of existence. Therefore, all that can be done is to move around in place things that always were and always will be.

Modern physics in 17th century began with a study of change of place. And there is also an attempt until quantum theory, at least, to explain every apparently different kind of change as merely a disguised form of change of place. Thus the change from cold to hot is not a change of inward quality in the water, but the gross appearance of many small changes of place of tiny particles.

Before one can understand the possibility of inward change in things, it is necessary to understand ability. And this is most difficult. It is especially difficult to understand the ability of matter or rather the ability which is matter. It is not until Aristotle that ability was understood. In modern physics, it is not until quantum theory in the twentieth century that the physicists came to think that there may be some change other than change of place. But according to Heisenberg, quantum theory introduced a quantitative version of the potency or ability which Aristotle had understood. Ability is hard to understand since it cannot be sensed or imagined and in particular the ability which is matter since that hardly is and something is knowable only insofar as it is in act. Ability can only be known through act and it is reason, not the senses or imagination that knows one thing through another.

> Nor does anything of the whole become empty or overfull. (Empedocles, DK 13)

> Nothing of the whole is empty; so whence could anything additional come? (Empedocles, DK 14)

Empedocles says that the empty does not exist while Democritus, as we will see, asserts that only atoms and the empty exist. The reason why Empedocles denied the existence of the empty would seem to be because it is nothing and nothing cannot exist. If there is something there, it is not empty. And nothing cannot be there. Nothing cannot be. That would be a contradiction. Nothing would be something.

> I shall tell something double: at one time it grew from the many to be only one; at another time, on the other hand, it grew apart from the one to be many. There is a double birth of mortals and a double death. The coming together of all things gives birth to and destroys one; the other, on the contrary, nourished as things grow apart, flies in all directions. And in no place do these things stop taking turns forever: at one time, all things come together by love; at another time again, everything is carried away by the hate of strife. Thus, insofar as the one is accustomed to grow from the many and again the many spring from the one breaking up; in this way, they come to be and there is no lasting life for them; but insofar as they never stop taking turns forever, in this way they are always immovable throughout the cycle.

But come listen to my words for truly learning causes the mind to grow. For as I said before, making known the ends of my words. I shall tell about something twofold. For at one time there grew to be only one out of the many; at another time again, the many grew apart from the one - fire and water and earth and the immense height of air and destructive strife apart from these equal in weight everywhere, and love amidst them, equal in length and width. But look at her with your mind, and do not sit with your eyes in amazement. It is she who is recognized to be inborn in the limbs of mortals by whom they think friendly things and achieve concord calling her by the name of Joy or Aphrodite. No mortal man has found her out, going to and fro among them, but you listen to the undeceiving course of my words.

All these are equal and are of the same generation. Each one cares for its own position by means of the character belonging to it. And they hold sway in turn as time revolves. And besides these, nothing comes into being nor ceases to be. If they had been perishing continually, they would be no longer. And what could increase the whole? And where could it come from? And where could it perish, since no place is empty of these things? But only these things are, and running through one another, they become different things at different times and are ever continuously alike." (Empedocles, DK 17)

But come, behold the witness of my former words, if anything was lacking in their form: the sun bright to see and everywhere warm, and all the immortals steeped in heat and bright light, the rain everywhere dark and cold, and from the earth flow forth things solid and based on the soil. In hate they become endued with form and separated; in love, they come together and are desired by each other. From these come forth all the things that were and are and will be, trees and men and women, beasts and birds of prey and fishes nurtured and living in the water, and the long-lived gods highest in honor. These alone are, but running through one another, they become different; so much are they changed through mixing. (Empedocles, DK 21)

As when painters decorate temple-offerings, men will taught about art by wisdom, these, when they have taken many-colored dyes

> with their hands, mix some more and some less in harmony and from these makes forms resembling all things, making trees and men and women, beasts and birds of prey and fish nurtured and living in water and the long-lived gods highest in honor; thus, let not deception overcome your mind that there is any other source of mortal things as appear in unspeakably great numbers; but know these things clearly for you have heard this account from a goddess (the Muse). (Empedocles, DK 23)

In these fragments, Empedocles guesses that the four elements are brought together by love in various combinations and separated by hate. And this in a cycle. This is reasonable. In general, contrary effects have contrary causes. If the butter sometimes becomes hard and then it becomes soft, we would not guess that there is the same cause of these two effects, becoming hard and becoming soft. Since these two effects are contrary, we would guess that there are contrary causes of them. And indeed we think of the hot as the cause of the butter becoming soft and the cold as the cause of the butter becoming hard. Contrary effects (hard and soft) have contrary causes (cold and hot). Hence, when Empedocles sees contrary effects in the four elements (they come together in one and they are separated into many), he reasonably guesses that they have contrary causes. And since love brings men together and hate separates them, there must be two causes proportional to these in the natural world. For like effects have like causes.

Love and hate are similar to the force of attraction and the force of repulsion by which the nineteenth century physicists tried to explain everything.

> On it, many sides of foreheads without necks burst forth, and bare arms wandered, bereft of shoulders, and eyes wandered in need of foreheads. (Empedocles, DK 57)

> But yet, when god was more mixed with god, these things fell together in whatever way everyone happened to meet; and many other things besides them continually came to be. (Empedocles, DK 59)

> Many things were born with two faces and two breasts, offspring of cattle with faces of men, others the reverse, born of men with the heads of oxen, mixed in part from men and in part female by nature, adorned with dark limbs. (Empedocles, DK 61)

These three fragments are part of the explanation of good in the natural world by Empedocles as Aristotle recounts it in the second book of *Natural Hearing* (the *Physics*). The good order we see in the parts of animals and plants needs to be explained. Anaxagoras, as we shall see, attributed this to ordering by a greater mind, but Empedocles attributes it to chance. Since a mindless love keeps on bringing together what hate has separated, these things come together in just any way, usually a non-viable way as in these fragments. But eventually, love happens to bring them together in a good way. These good combinations survive and the far more numerous bad ones perish. Hence, we see good everywhere, not because someone aimed at it, but because the good combination that happened rarely survived, and the countless bad ones perished. This is also the way many modern biologists try to explain the good order in animals and plants.

> By earth, we see earth; by water, water; godlike air by air; destroying fire by fire; love by love; and hate by hate. (Empedocles, DK 109)

Empedocles thinks that knowing is a result of the thing known being in the knower. There is truth in this statement. You have the shape and color of everyone you know in your memory. But how is the thing known in the knower? Is it in there is a material way? If so, David would have helped Goliath to know stones when he propelled one into his head. The wooden chair would know what wood is since it has wood within it. Is there a piece of bone or flesh chiseled out into the shape of every person you know? If we cut open your head, would we find a little statue of everyone you know. Perhaps the thing known is in the knower, not in a material way as Empedocles seems to think, but in an immaterial way.

> Nourished in the sea of blood which goes in two directions, here especially is what men call thought, for the blood around the heart in men is thought. (Empedocles, DK 105)

Like most modern scientists, Empedocles thinks of thought as being something material. But of the main ingredients he knows in the body (bones, flesh, and blood), he attributes thought to the most subtle and the most mobile matter which is blood. We think that thinking and reasoning are a motion and that thought can penetrate things and is therefore finer than other things. In the

same way of thinking, some moderns think of thinking as electrical impulses in the brain, because they are so subtle and so mobile.

ANAXAGORAS

Anaxagoras of Clazomenae was in his prime about 460 B. C. He became the friend of Pericles and thus brings philosophy to Athens. Socrates read Anaxagoras' works as a young man (as he recounts in the *Phaedo*).

> How could hair come from what is not hair, and flesh from what is not flesh? (Anaxagoras, DK 10)

This is one of the premisses by which Anaxagoras arrived at his position on matter, as Aristotle recounts that reasoning in the first book of *Natural Hearing* (the *Physics*). Anaxagoras saw by induction that everything in the natural world eventually comes from everything else. From grass, for example, we can get more cow and from the cow more man and from the man, worms and from the worms, more bird and from the bird, cat, and if the cat dies and pushes up daisies, even flowers. But one cannot get something out of nothing or putting it more particularly "How could hair come from what is not hair, and flesh from what is not flesh?" Hence, everything must be inside of everything.

And since everything comes to be from everything without end, there must be an infinity of pieces of everything inside of everything. But how can a blade of grass have in it an infinity or unlimited multitude of things. Only if they are infinitely small. Hence, there is an infinity of infinitely small pieces of everything inside of everything.

> All things were together, unlimited in number and smallness. For the small was also unlimited. And all things being together, nothing was clear because of smallness. Air and aether, both being unlimited, encompassed all things for these are the greatest in number and size among all things. (Anaxagoras, DK 1)

> These things being so, it is necessary to think that there are many things of all kinds in all compounds and the seeds of all things having all kinds of shapes and colors and flavors. And men too were fitted together, and all other creatures which have soul. And the

> men possessed both inhabited cities and artificial works just like ourselves, and they had sun and moon and the rest, just as we have, and the earth produced for them many and diverse things, of which they collected the most useful, and now use them for their dwellings. This I say concerning separation, that it must have taken place not only with us, but elsewhere.
>
> Before these things were separated, all things were together, and no color was clear. For the mixture of all things prevented this - of the moist and the dry, and of the hot and the cold, and of the bright and the dark, and of much earth in it, and of seeds infinite in multitude and nothing like each other. For none of the others are similar one to the other. These things being so, it is necessary to think that all things exist in the whole together. (Anaxagoras, DK 4)

Here we have Anaxagoras' grand conclusion about what matter is. There is an infinite or unlimited multitude of things unlimited in size or infinitely small. And because they are so small, they cannot be distinguished.

> Nor is there a smallest of the small, but there is always a smaller for what-is cannot cease to be [by being cut]. But there is also something greater than the great, and it is equal to the small in number, but each thing to itself is both great and small. (Anaxagoras, DK 3)

Anaxagoras has here an understanding of the continuous. If we consider a line or a surface or a body just in its one or two or three dimensions, it in divisible forever, as Aristotle shows in the sixth book of *Natural Hearing* (the *Physics*). There is never a smallest or shortest line. A line can always be bisected into two shorter lines. So long as a line is divided into what has length and length can always be divided, a line can be divided forever. The only way a line could cease to be divisible would be if it were divided into two points. But a line cannot be composed of points. If one puts together points to form a line, they must touch. And if points touch (since they have no parts or edge with an interior), they can only coincide. And if they coincide, they have no more length than one point which is no length at all. Hence, a line is never composed of points, but always of smaller lines. Hence, there is no smallest of the small.

But Anaxagoras also says that there is always a greater than the great and this corresponds somehow to the fact there is no smallest of the small. As one

divides the line, the lines become smaller and smaller. But the number of lines becomes greater and greater. If the continuous is divisible forever, then numbers can increase forever. If number arises from the division of the continuous, and the continuous is divisible forever, then number can get larger without end. Hence, as there is no smallest of the small, so likewise there is not greatest of the great.

> And since the parts of the large and the small are equal in number, thus all things must be in everything. Nor is it possible to exist apart from other things, but all things have a share of everything. Since a smallest cannot be, it is not able to be separated, or to come to be by itself, but just as in the beginning, so now they are all together. Many things are in all things, and the things separated into the greater and the smaller are equal in number (Anaxagoras, DK 6)

> The things in the one world are not separated from each other, nor cut off with an axe, neither the warm from the cold, nor the cold from the warm. (Anaxagoras, DK 8)

Because everything is inside of everything, nothing in this material world is really cut off sharply from anything else. Anaxagoras will say later that we call a thing, or name it, by what it has most of.

> So the multitude of things separated cannot be known in word or in deed. (Anaxagoras, DK 7)

Since an infinity of things cannot be known by us, Anaxagoras' position on matter makes it impossible to know matter. If a word had an infinity of letters, we could never know that word or how to spell it.

> These things thus revolve and are separated by force and speed. and the speed makes the force. The speed of these things is not like the speed in any of the things that are now among men, but altogether many times as fast (Anaxagoras, DK 9)

> The thick and the moist and the cold and the dark came together where now is the earth, and the thin and the warm and the dry went outward to the further part of the aether. (Anaxagoras, DK 15)

> From these things as they separated off, the earth was solidified, from the clouds, water was separated, and from the water, earth, and from the earth, stones were solidified by the cold, and these things rush outward more than water. (Anaxagoras, DK 16)

The mixture of all things was in the beginning. But by a circular motion (begun by a greater mind as we shall see in later fragments), these things have begun to be separated. We can still see something of this circular motion in the revolution of the sky around us. The result of this is that the heavy things like the earth are left in the middle and the lighter things like fire and air are driven off to the circumference.

> The Greeks do not rightly take coming into being and perishing. Nothing comes to be or perishes, but is mixed and separated from existing things. And thus they would be right to call coming to be, mixing, and perishing, separating. (Anaxagoras, DK 17)

Like Empedocles, Anaxagoras sees no real coming to be or perishing of things. There is only a change of place, a mixture and a separation of things. As he said above, how could flesh comes from what is not flesh?

> These things having been thus separated, it is necessary to know that all things are neither more nor less; for it is not possible for more than all to be, but all things are forever equal. (Anaxagoras, DK 5)

If nothing comes into being or goes out of being, then things are never more nor less. Since *equal* means neither more nor less (in the same genus), Anaxagoras can also say that *all things are forever equal*. The whole of modern mathematical science is based upon this statement. Insofar as modern mathematical science expresses what it knows about the world in equations, and as the word *equation* indicates, this assumes that all things are forever equal. And in particular, the conservation laws are the most basic in modern science. And they state that what is most basic is never more nor less. This is connected with the thought that change of place in the only kind of change. In an algebraic equation one can combine and separate, but never have more nor less. (For example, $2(x + y) = 2x + 2y$; nothing has be gained or lost, but mixed in one way and separated and mixed in another way)

> And when the mind began to move things, it was separated from everything; and as much as the mind moved, all this was separated. As things were being moved and separated, the revolution made them separate even more (Anaxagoras, DK 13)
>
> In everything there is a part of everything except mind, and there are also other things in which there is mind. (Anaxagoras, DK 11)

In DK 13, Anaxagoras attributes the revolution that separated (to some extent) things to a mind (one greater than ours). Our reason also uses circular motion to separate things, as in a cyclotron, or more simply by getting force in swinging a rock at the end of a string or rope before sending it through your window. But more generally, it is reason or mind that most separates or distinguishes things.

Anaxagoras also attributes to this mind (the greater mind which began the revolution and separation of things) separation from other things and exempts it from the mixture of all things (although the lesser mind, such as our own, may be with other things.). A reason for this will be found in the great fragment about the mind (DK 12) below.

> The mind, which always is, is indeed now where all other things are, in the whole surrounding mass, and in the things joined to it and in the things separated from it. (Anaxagoras, DK 14)

This greater mind is where it operates, but it is not mixed with things.

> Other things have a part of everything, but mind is unlimited and self-ruling and is mixed with nothing, but is itself alone by itself. For if it were not by itself, but were mixed with something other, it would have a share of all things if it were mixed with any; for there is a part of everything in everything, as has been said by me in what goes before. And the things mixed with it would hinder it, so that it would rule over nothing like it does being alone by itself. For it is the thinnest of all things and the purest, and it has all knowledge about everything and has the greatest power. And mind rules all things which have life, both the greater and the lesser. And mind ruled over the whole revolution, so that it began to revolve in the beginning. And first it began to revolve from something small, but now it revolves over a greater distance, and it will revolve over

> more. And mind knows all the things mixed together and those separated off, and those divided. And mind set in order all things that were to be, and all things that were but now are not, and whatever is now and whatever things will be, and this revolution in which the stars and the sun and the moon and the air and the aether go round, having been separated off. This revolution has caused them to be separated. The thick is separated from the thin, and the warm from the cold, and the bright from the dark, and the dry from the moist. There are many parts of many things. Nothing is separated off nor divided entirely the one from the other, except mind. Every mind is similar, both the greater and the lesser. Nothing else is like anything else, but each thing is and was most clearly those things of which it has the most. (Anaxagoras, DK 12)

This is the great fragment on mind. Anaxagoras is without doubt one of the greatest thinkers before Plato and Aristotle - indeed, one of the greatest thinkers of all time. Nowhere is this more true than in his words about the mind, words that called forth the famous remark of Aristotle that Anaxagoras seemed like a sober man among drunk men when he spoke of the mind.

Towards the end of this fragment, Anaxagoras say that every mind is similar, both the greater and the lesser. This does not exclude differences between the minds. What is said of one mind may apply either more or less to another mind. But also something may belong to one mind that does not belong to another mind, or something may belong to one mind in a different way than it does to another mind. This will be seen in our commentary on the fragment. But the likeness of minds is one reason why we may know a greater mind to some extent by our lesser mind.

The first statement Anaxagoras makes about the mind is that it is *unlimited*. We have seen Heraclitus say something similar. What does it mean to say that the mind is unlimited? And is it true?

The words *limited* and *unlimited*, and the word contained in them (*limit*) are first used in quantity. Thus Euclid teaches us that the limits of a line are points, and the limits of a plane are lines, and the limits of a solid or body are surfaces. And a multitude that can be counted or numbered is limited by the last unit. But if a line lacked end-points and went on forever, it would be unlimited. Likewise, for a surface that was not bound by any lines or a body that went on in all

directions and had no surface or surfaces. And a multitude that could not be counted or numbered, like the multitude of all numbers, would be unlimited.

But is the mind unlimited in the way that quantity is unlimited? Are we to think that the mind is a body that goes on endlessly in all directions without any surface or that it is an unlimited multitude? Some have spoken in these ways. Even Heraclitus, we have seen, speaks in this way as if traveling in every direction, one would not come to the end of the soul or its reason. And for those like Hume who have difficulty in distinguishing between the mind and its thinking and thoughts, I suppose one could end up saying the mind is an infinite or unlimited multitude of thoughts.

But Anaxagoras speaks of the greater mind later in this fragment as one, not a multitude. And when he says later that the mind is the *thinnest* of all things, this does not agree or fit with thinking that the mind is a body that goes on in all directions without any surface.

The mind is unlimited, not in its size, but in its ability. We can come to see this by a consideration of our own mind or reason. Mind or reason is a power or an ability we have for some act. And we know every ability or power we have - by its act and ultimately by the object of that act. We must begin then with the object of our mind or reason.

The first object of our mind or reason is the what-it-is of a thing sensed or imagined. For example, we sense a man or imagine a triangle, but our mind tries to understand what a man is and what a triangle is. But what a man is is common to all men and what a triangle is is common to all triangles. Hence, the first object of our mind is something universal. Hence, it has been well said that a thing is singular when sensed or imagined and universal when understood.

But the universal can be said of an unlimited multitude of singulars or particulars. The universal man, for example, can always be said of another man. It is not limited to any number of men. It contains in ability an unlimited multitude of men. Likewise, the universal triangle is not limited to any number of triangles. and the universal number can be said of two, three, four and so on - of that unlimited multitude of numbers. Number contains an infinity of species of number in ability.

Our mind can be said to be unlimited in that its object, the universal, is unlimited. Some greater mind might know an unlimited multitude in a more

distinct way than we do by knowing the universal, but even our mind knows the unlimited in some way by knowing the universal. And since the knower becomes in some way what he knows through his ability to know, our mind must itself be unlimited in some way just as its object is unlimited.

Because our mind knows the universal and can also go from the general to the particular, we can always learn something more. In this way too our mind is also said to be unlimited.

An outward sign that our mind is unlimited is the hand. Anaxagoras said that man is the wisest of the animals because he has a hand. But Aristotle reversed it saying that he has a hand because he is the wisest of the animals.[11] Because man has an unlimited knowing power, his mind or reason, he needs a hand whereby he can make and use countless tools to make endless kinds of things.

That man has words as well as naturally signifying sounds (such as groans, screams etc.) is also a sign of his need to express an unlimited multitude of things.

When we say that the universal is unlimited and, consequently, the mind is unlimited, we should realize that the negative prefix means a negation while in the case of quantity it means a lack or privation. A line is able to have end-points and a surface, lines that bound it and a solid or body, surfaces that limit it. But the universal is not able to be limited to containing in potency only a limited multitude. It must be able to be said at least of an unlimited multitude of individuals. And some universals, like number, for example, can be said of an unlimited multitude of species. To say then that the universal is unlimited is to express a negation, but not a privation or lack. Quantity without limit is like matter without a form, something imperfect. But to call the ability of the mind unlimited is to speak of its perfection.

Many things follow from the mind being infinite or unlimited which we cannot go into now. In the second book of the *Summa Contra Gentiles*, Thomas argues from the infinity of our mind to its not being a body.[12] And in the third book of the same,[13] he reasons that our mind can never be satisfied unless it

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[11] *Parts of Animals*, Bk. IV. 687a 8-23
[12] Chapter 49, arg. 5
[13] Chapter 50, arg. 4

understands God who is simply unlimited. And in the first book,[14] he reasons from the infinity of our mind to the existence of a substance simply or without qualification, infinite which is God.

Further since the Greeks all thought that the unlimited or infinite could not have a beginning, but must be the beginning of things (as Aristotle notes in the third book of the *Natural Hearing* (the *Physics*);[15] if the mind is unlimited, it would seem to be a beginning of things, a cause of things. And we shall see that Anaxagoras does hold to the existence of a greater mind that is responsible for the distinction and separation of things. (Since matter seems to be unlimited and movers like mind and also love seem to be unlimited, there is a connection between the early philosophers thinking mainly of matter and the mover rather than form and end and their thought that the beginning of things is unlimited. Form and end seem to be limits.)

But before I pass to the next part of the fragment, I must warn about the difficulty of this first statement, and its danger. Aristotle pointed out in his book *On Sophistical Refutations* that there are many kinds of sophistical or fallacious arguments and that the most common of them is the fallacy of equivocation due to one word having more than one meaning and the mind being deceived when it is unable to distinguish these meanings. Now in the history of human thought, the word *unlimited* or *infinite* has been most notorious. From Melissus, the early Greek philosopher (whom Aristotle showed was deceived by the equivocation of the word)[16] to Feuerbach and the Marxists who made use of the equivocation to conclude that man's mind is God, this word *infinite* or *unlimited* has been a pitfall for all but the most wary. If you don't limit the senses of the word *unlimited*, you are going to be in unlimited trouble. Feuerbach "syllogized" thus: Man's mind is infinite, the infinite is God. Therefore man's mind is God. My sister-in-law told me of a little boy who heard in mathematics class that "numbers are infinite" and in theology class that "the infinite is God." And he asked, "Are numbers then God?" In these mistakes, there is also the fallacy of simply and in some respect. Only God is simply or without qualification infinite. The creature is only in some qualified way infinite.

One can begin to break open the equivocation of the word *unlimited* in two ways. First the word *limit* which is negated has more than one meaning. In the

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[14] Chapter 43, arg. 7
[15] 203b 4-7
[16] *Natural Hearing* (*Physics*), Bk. One, Chapter 3

fifth book of the *Metaphysics*, Aristotle distinguishes in order the four central senses of the word *limit*. In some of these senses, man's mind is not unlimited. Second, the negative prefix *un* can be understood either as a simple negation or a privation and lack. When God is said to be infinite, the negative prefix is said as a mere negation. Before one could determine this in the case of man's mind, one would first have to determine the sense of *limit* one has in mind. There are many other distinctions to be made, but this is enough see that the understanding of the first statement of Anaxagoras about the mind is extremely difficult and important.

Thomas Aquinas gives us the basic distinction:

> infinitum dicitur dupliciter. Uno modo privative; et sic dicitur infinitum quod natum est habere finem et non habet: tale autem infinitum non invenitur nisi in quantitatibus. Alio modo dicitur infinitum negative, id est quod non habet finem. Infinitum primo modo acceptum Deo convenire non potest, tum quia Deus est absque quantitate, tum quia omnis privatio imperfectione designat, quae longe a Deo est. Infinitum autem dictum negative convenit Deo quantum ad omnia quae in ipso sunt...
>
> quamvis potentia habeat infinitatem ex essentia, tamen ex hoc ipso quod comparatur ad ea quorum est principium, recipit quemdam modum infinitatis quam essentia non habet. Nam in obiectis potentiae, quaedam multitudo invenitur; in actione etiam invenitur quaedam intensio secundum efficiaciam agendi, et sic potest potentiae activae attribui quaedam infinitas secundum conformitatem ad infinitatem quantitatis et continuae et discretae. Discretae quidem secundum quod quantitas potentiae attenditur secundum multa vel pauca obiecta; et haec vocatur quantitas extensiva: continuae vero, secundum quod quantitas potentiae atttenditur in hoc quod remisse vel intense agit; et haec vocatur quantitas intensiva. Prima autem quantitas convenit potentiae respectu obiectorum, secunda vero respectu actionis. Istorum enim duorum activa potentia est principium.][17]

The second statement of Anaxagoras about the mind, that mind is self-ruling, can be understood affirmatively or negatively. It can mean that the mind does

[17] *De Potentia,* Q. 1, Art. 2

indeed rule itself or direct itself (which is true of our own reason after it has acquired logic) or it could mean by self-ruling that it is not ruled by anything else (which would be true of the divine mind). We find many examples in philosophy where a grammatically affirmative phrase is to be understood in a negative sense. Thus philosophers sometimes say that substance exists in itself, meaning not in another, as does accident. Again, we say that some statements are known through themselves; that is, not known through other statements.

We can make a transition from the first statement to the second in two ways corresponding to the two meanings of self-ruling. I will take the statement in an affirmative sense first.

If the object of reason is unlimited, then reason cannot only know other things, but also itself. The first statement is also an example of mind knowing itself for it is the mind that knows that it is in some way infinite. But if the mind can direct the hand or the foot because it knows them, it can also direct itself because it knows itself. The mistakes our mind makes is also a sign that it is in need of direction. Involved in this is also what many have said and what Anaxagoras will say later in the fragment, that mind orders things. The statement that mind is self-ruling suggests the possibility of an art or science whereby the mind directs itself. And the existence of such an art or science, called logic, is also a sign of the truth of Anaxagoras' statement that mind is self-ruling, understood in the affirmative sense about our mind. We do not know that Anaxagoras developed such an art or science. But Socrates may well have been stimulated to begin such an art by this seed planted by Anaxagoras. It is in the same dialogue that Plato has Socrates speak of his youthful enthusiasm for Anaxagoras' words about the mind and of the need for an art about arguments. It belongs to a good student to develop the seed of his master and Aristotle attributes to Socrates the beginning of logic. Socrates is also known for turning the attention of philosophers more to ethics than to the natural world. And the key beginning in ethics, that reason should rule the will and emotions and the rest of man, follows from this statement that reason is self-ruling if we add that reason is *alone* self-ruling (since it is *alone* self-knowing). And one is not fit to rule others if one cannot rule oneself.

If we look before and after this statement of Anaxagoras that mind is self-ruling, we can see a connection between the three parts of philosophy. For it is in looking philosophy (natural philosophy which includes the study if the soul and metaphysics or wisdom) that mind knows itself. And it is because our

reason knows itself, that it can direct itself; and this is studied in logic. And it is because our mind can rule itself that it is the only part of man that is fit to rule the other parts. And this, that reason should rule man, is a beginning of ethics. It is not by chance then that Socrates was impressed with the words of Anaxagoras on mind and that Socrates did so much to begin logic and ethics. Anaxagoras will go on to speak of the mind as ruling other things after he has said that it is self-ruling.

If we understand mind is self-ruling in a negative sense, the transition from the first statement can be made in another way. As Aristotle points out in the section on the infinite in the third book of *Natural Hearing* (the *Physics*), all the early Greeks attributed infinity to the first beginning or cause. If mind then is infinite or unlimited, it is like a beginning or cause. Besides how could the unlimited be ruled by another?

The next statement of Anaxagoras is not the immediate one that the mind rules other things because it is self-ruling, but rather a further conclusion from the mind ruling other things. This further conclusion is that the mind (or the greater mind) is not mixed with other things, that is, material things. For this would prevent its ruling over these other things. Later in the fragment we can see why Anaxagoras or any reasonable man could think that some mind rules over natural things. Anaxagoras will speak of the mind as separating and ordering things and especially living things. We know that the separation and ordering of human things is an effect of our own mind. And like effects should have like causes. Hence, when we see the separation and order of natural things, we naturally think of a greater mind that is responsible for the separation and order that we see in them. But let us return at this point to the reason given by Anaxagoras for saying that the mind, or the greater mind, is not mixed with the things over which it rules. He says that being mixed with them would prevent it from ruling over them. The ruler must be distinct from those he rules.

Anaxagoras' reason can be seen in the army, in government, in a large corporation, in the Church, even in the family and in an individual with his reason and his emotions, and in a man on a chair trying to place that chair.

A brief comparison between Anaxagoras and Einstein is in order here. Like Anaxagoras, Einstein was led to a belief in a mind greater than ours from the order in natural things rather than from religion. But unlike Anaxagoras, he does not say that this mind is separate from things, but rather mixed with them. Here is one place where Einstein speaks of this greater mind:

> Certain it is that a conviction, akin to religious feeling, of the rationality or intelligibility of the world lies behind all scientific work of a higher order. This firm belief...in a superior mind that reveals itself in the world of experience, represents my conception of God. In common parlance, this may be described as "pantheistic"(Spinoza). Denominational traditions I can only consider historically and psychologically; they have no other significance for me.[18]

But while Anaxagoras gives a good reason for saying this greater mind is not mixed with matter, Einstein does not seem to give any reason for thinking it is mixed with things. I suspect that, like so many thinkers in this and the last century, he is lead to this pantheistic notion from democratic customs. Alexis de Tocqueville devotes the seventh chapter of his discussion of the influence of democratic customs on the mind to "What Causes Democratic Nations to Incline to Pantheism". He says there, quoting his conclusion, the following:

> All their habits of thought prepare them to conceive it (pantheism) and predispose them to adopt it. It naturally attracts and fixes their imagination; it fosters their pride while it soothes the indolence of their minds. Among the different systems by whose aid philosophy endeavours to explain the universe I believe pantheism to be one of those most fitted to seduce the human mind in democratic times.[19]

Students of the third book *On the Soul* know that Aristotle refers to Anaxagoras when he reasons that the mind or reason of man must be unmixed with matter in order to know all material things. Anaxagoras is reasoning then that the greater mind is separate from matter and suggests a reason for saying that our mind is not material. This is a great advance over Empedocles who said that "the blood around the heart in men is thought" (DK 105).

But this reason of Anaxagoras seems to contradict the previous statement that the mind is self-ruling. If the ruler must be separated from the ruled, how can the mind rule itself since the mind cannot be separated from itself? Yet the existence of logic is good sign that the mind can rule itself and there are

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[18] "On Scientific Truth" in *Essays in Science*., Philosophical Library, p. 11

[19] Vol. II of *Democracy in America*, Book I, Chapter 7

excellent reasons for saying the ruler must be separated from the ruled. The untying of this contradiction is the discovery of the first step necessary for the mind to rule itself.

The solution of this difficulty can be approached through a larger picture in imitation of what Socrates does in the *Republic*. When a colony is ruled by the mother country, the colony is not said to enjoy self-rule. But when the colony is granted independence, it can begin to enjoy self-rule. But this does not mean that the ruler and the ruled are not distinct. The whole is not governing the whole, but one part, the government, is ruling the other parts. Likewise, when we say that a man rules himself or has self-control, we do not mean that the whole man is ruling the whole man, but that one part, his reason, is ruling the other parts (such as his emotions and hands). But how can this be applied to the mind or reason which does not have parts (especially if it is the thinnest of things as Anaxagoras says)?

Socrates' life gives us the clue to untying the apparent contradiction in the mind or reason ruling itself. Socrates found that all or most men have mixed up what they do not know with what they do know. Before reason can begin to rule itself, it must separate what it knows from what it does not know (but thinks it knows). Reason should be ruled in what it does not know by what it does know.

Separating the known from the unknown is the first step towards the mind ruling itself. The mind must also know how to use the known to investigate and know the unknown. Logic is about how to use the known to investigate the unknown and eventually know it.

The mind ruling itself also requires that reason separate the more known from the less known and the known through itself from the known through another. For the former in each pair should rule over the latter.

Parmenides and Socrates and Aristotle also separated the king of statements, the most known statement, from all the other more known statements and statements known through themselves. The king of statements is the statement about contradiction. Every true statement either affirms or denies, but does not do both. Hence it presupposes the statement about contradiction. Indeed the very meaning of truth and falsity cannot be grasped without the statement about contradiction being known. The statement about contradiction is the king of all statements because it rules over all other statements for their good. Socrates also used the statement about contradiction to help men

separate what they did know from what they did not know which is the first step on the road to reason ruling itself. But since most men have not separated them, the reasons of most men are unable to rule themselves. Most men cannot think for themselves.

We can see then how Socrates and Aristotle help reason to rule itself when they help it to distinguish between the known and the unknown, the more known and the less known, the known through itself and the known through another, and the most known from all the rest.

The next statement of Anaxagoras is that the mind is the thinnest of all things. (Is this said metaphorically of the immaterial mind or properly? We speak of a good mind as sharp or penetrating as if it has by antonomasia what every mind has. As the sharpness or thinness of the knife enable it to divide or separate things, so the mind must be the thinnest of all things if it can not only separate those things which can be separated in things, but also things which can be separated only in the mind. Thus the mind separates the general from the particular and numbers and shapes from sensible matter, and the concave and the convex surface, and the shape of the clay from the clay. Since the object of the mind is the what it is of things, it must be able to penetrate into them. And this is a characteristic of the thin.

The next statement of Anaxagoras, that the mind is the purest of things, seems to be saying nothing more than what was said before - that the mind is unmixed with things. But Anaxagoras could be pointing out that the mind is not only not mixed with other things, but is itself not a mixture of many things. How could it be a mixture of many things if it is the thinnest of all things?

The next statement that the mind has all knowledge about everything would seem to apply to some greater mind than our own. But it is because the mind is the thinnest of all things, that it can penetrate all things, and therefore know all things.

And if Bacon is correct in saying that knowledge is power, then the mind has the greatest power because it has all knowledge about everything. But someone might want more proof than that.

Anaxagoras now proceeds to speak of the mind's distinguishing and ordering and ruling over other things. And he first speaks of the mind in reference to living things in particular: "And the mind rules all things which have life, both the

greater and the lesser." It is significant that he singles out living things in particular, although the greater mind's causality is not limited to them. In living bodies, animals and plants, we see a distinction of parts that are well arranged while non-living bodies, like water or a stone, seem more homogenous. The distinction and order of the parts of artificial things are, of course, an effect of our mind or reason. And since like effects have like causes, it is reasonable to guess that the distinction and order of the parts of animals and plants are also an effect of some mind. Further, we call these parts *organs* which is the Greek words for *tools*. But a tool is clearly for the sake of something. Hence, the parts of living bodies, as well as what they do, seem to be for the sake of something. But it is mind that makes or acts with some end in mind. But it does not appear at first that non-living bodies, such as water or rocks, are for the sake of something or that do what they do for the sake of something. Hence, it is less apparent in them that a mind is their cause. It is thus in living things that action for an end is more manifest and action for an end would seem to require a mind.

Anaxagoras speaks of the greater mind as separating things in general by a circular motion which is also used by our mind in difficult cases from swinging a rock around our head before releasing it to the cyclotron used in splitting particles. It is reasonable that Anaxagoras speaks of the mind as separating things before he speaks of it as setting things in order for distinction or separation is naturally before order - order can be found only in those things that are distinguished. Hence, confusion, which is opposed to distinction, also implies disorder. (Hence, Aristotle speaks of opposition, the basis of distinction, in the *Categories*, before *before and after* which define order. Nothing is before or after itself.)

Everyone who has thought about the mind has seen a connection between the mind and order. Our own mind tries either to find order or to make it. But the greater mind of Anaxagoras does not find order in things since, according to Anaxagoras, all things ere mixed together or confused in the beginning, that is, all material things. But our mind or reason often finds order which is not made by it (either not made by the human reason as is the order in natural things or made by some other human mind, as when we find order in the poem or book of another man). But the greater mind does not find order, but only makes it in things.

One can ask a theological question here. What is the greater mind? What is the mind greater than our own, that Anaxagoras has arrived at by seeing the distinction and order of natural things? Is this the divine mind or the mind of an

angel? This is, of course, a question that Anaxagoras could not ask, but it is of interest to the Christian.

Anaxagoras has arrived at a mind that is separate from matter and that can act upon matter by moving it in place and separating what is in it and ordering it. But this greater mind of Anaxagoras is not responsible for the existence of matter. It does not create matter. Rather it acts upon a matter existing independently of it. Anaxagoras has arrived at an angelic mind, not the divine mind, although much of what he says could be applied in its own way to the divine mind. And although Anaxagoras might call his greater mind the divine mind since it is the highest mind known to him; yet the Christian knows that he has not arrived at a mind that creates matter. Like the mind of the *demiourgos* in the *Timaeus* of Plato, it does not create matter, but only acts upon it.

Anaxagoras and the *Timaeus* suggest that it is easier to arrive at the angelic mind than the divine mind. They also suggest that there is something wrong with the division of thinkers into those who say matter is the beginning of all things, even of mind and those who say that mind or thought is the beginning of all things, things, even of matter.[20] By leaving out the middle position (that both mind and matter are beginnings, existing independently of one another) they make impossible the movement of human reason from the first to the last position.

Although there is a great distance between our mind and the angelic mind, yet our mind is more like the angelic mind than like the divine mind. And the angelic mind is more like the divine mind than is our mind. Since our mind is also the most known to us, the beginning of our consideration of the mind is the consideration of our mind, as in the third book *On the Soul* of Aristotle. The middle of our consideration of mind is the consideration of the angelic mind. And the end of our consideration of mind is to consider the divine mind. We have seen how Anaxagoras, starting with our mind, was more able to ascend to the angelic mind than to the divine mind.

This philosophical order from the more known to us to the less known to us is, of course, the reverse of the order in theology as every student of the *Prima Pars* of the *Summa Theologiae* must know. But the orders of philosophy and theology are contrary for the reasons Thomas gives in the beginning of the

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[20] See, for example, Engels, *Ludwig Feuerbach And the End of Classical German Philosophy*, Moscow Edition of *Marx & Engels On Religion*, 1966, pp. 202-203

second book of the *Summa Contra Gentiles*.[21] In the beginning of the philosophical consideration of the mind, we consider the human mind by itself in its own nature. At the end of the theological consideration of mind, we find that our mind is part of the truth that we are made in the image and likeness of God. But it seems to me that we should first consider mind in the philosophical order.

LEUCIPPUS

> Nothing happens at random; but everything comes to be from reason and by necessity. (Leucippus, DK 2)

Leucippus has here stated what was the absolute principle of modern science in the seventeenth, eighteenth and nineteenth centuries and not challenged in the twentieth century until the Copenhagen Interpretation of quantum theory. We can see that this was the absolute principle of modern science from the way it was adopted by those trying to make biology or even psychology more "scientific" like the physical sciences. Claude Bernard, for example, saw doubt as intrinsic to the experimental method, but he excluded determinism from this doubt. To doubt determinism was to doubt science, he thought. In modern times, this seems to have come in large part from pursuing a mathematical knowledge of the natural world. For in mathematics, there is complete determinism. But in quantum theory in the twentieth century, determinism was doubted, if not rejected. Aristotle also rejected this position from his understanding of the ability of matter or that is matter.

DEMOCRITUS

> Sweet exists by custom, the bitter by custom, the warm by custom, the cold by custom, color by custom; but truly the atoms and the empty. (Democritus, DK 9)

If the sense qualities were real, then the change of these would be a different change from change of place. A mathematical study of the natural world could also make one deny the sense qualities, since there are none in mathematics.

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[21] Caput IV

Democritus is said to have arrived at the atoms by what Einstein would call a thought experiment. If we imagine bodies cut in every way they could be cut, would something uncut remain or nothing? The second is impossible because a thing is made out of what it is cut into. Hence, if a thing could be cut up into nothing, it would be made out of nothing, which is absurd. Hence, something uncut must remain. And this is what the Greek word *atom* means. *tom* means *cut* and *a* is the negative prefix. Hence, the word *atom* means uncut, but in the context of what was left uncut when a body had been cut in every possible way, it would have the sense of uncuttable or unable to be cut.

Democritus is thought to have said that the empty exists because otherwise motion would be impossible. Without the empty, everything would be full and so tightly packed that nothing could move. Since the empty is nothing, Democritus is saying that nothing exists. Like Heraclitus in words, he is admitting a contradiction in the world to save the reality of motion.

Erwin Schrödinger comments on Democritus' thought in comparison to modern science

> Matter is constituted of particles, separated by comparatively large distances; it is embedded in empty space. This notion goes back to Leucippus and Democritus, who lived in Abdera in the fifth century B.C. This conception of particles and empty space (atomoi kai kenon) is retained today (with a modification that is just the thing I want to explain now) - and not only that, there is a complete historical continuity; that is to say, whenever the idea was taken up again it was in full awareness of the fact that one was taking up the concepts of the ancient philosophers.[22]

> Man is a little universe (*Microcosm*) (Democritus, DK 34)

Man seems to have something in common with everything in the universe. With inanimate bodies, he has three dimensions. With the plants, he has growth and reproduction. With the animals, he has sensation. If there are greater minds in the universe, we have mind in common with them.

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[22] : *Science and Humanism,* p. 13

> We have become pupils in the most important things: of the spider for spinning and mending, of the swallow for building, and of the songsters, swan and nightingale, for singing, by way of imitation. (Democritus, DK 154)

Man is the most imitative of the animals and at first we learn by imitation. And since our knowledge begins with our senses we imitate natural things. Most of all, human art imitates nature

Duane H. Berquist

NATURAL THEOLOGY AND RELIGION FRAGMENTS

XENOPHANES

Homer and Hesiod have attributed to the gods all things that are shameful and blameworthy among men: stealing, adultery and deceiving each other. (Xenophanes, DK 11)

They have uttered for the most part lawless deeds of the gods: stealing, adultery and deceiving each other. (Xenophanes, DK12)

But mortals think the gods are born and have their own clothes and voice and body. (Xenophanes, DK 14)

The Ethiopians have gods snub-nosed and black; the Thracians, blue-eyed and with red [hair]. (Xenophanes, DK 16)

But if oxen and horses and lions had hands or could draw with hands and produce the works which men do, horses would draw the forms of the gods like horses and oxen, like oxen, and they would make the bodies such as the bodies which they themselves have. (Xenophanes, DK 15)

[There is] one god, among gods and men the greatest, neither in body nor in mind like mortals. (Xenophanes, DK 23)

The whole sees, the whole thinks, and the whole hears. (Xenophanes, DK 24)

He always remains in the same place, being moved in no way, nor is it fitting for him to go away to another place at another time. (Xenophanes, DK 26)

But without any work, he swayeth all things by the thought of [his] mind. (Xenophanes, DK 25)

HERACLITUS

If they did not make solemn procession and sing the shameful phallic hymn to Dionysus, their deeds would be most shameful.

But Hades is the same as Dionysus for whom they rave and have Bacchic revels. (Heraclitus, DK 15)

Night-walkers, magicians, followers of Bacchus, and initiates into the mysteries - the things after death threaten these, to these fire prophesies: the mysteries practiced by men are unholy mysteries. (Heraclitus, DK 14)

They purify themselves, staining themselves with other blood as if someone stepping into the mud should try to wash himself free from mud. He would seem to be mad if any man should observe him acting thus. And they pray to these statues as if someone were to chat with houses, not knowing what gods and heroes are. (Heraclitus, DK 5)

It is fitting that Homer be thrown out of the contest and trashed, and Archilochus likewise. (Heraclitus, DK 42)

Of all whose discourse I have heard, none has come so far as to know that the wise is set apart from all things. (Heraclitus, DK 108)

The wise is one only. It is willing and unwilling to be called by the name of Zeus. (Heraclitus, DK 32)

Human nature does not have judgment, but the divine has. (Heraclitus, DK 78)

The most beautiful ape is ugly compared to the genus of men. The wisest of men towards God appears an ape, in wisdom and beauty and all other things.
(Heraclitus, DK 82-83)

A man is called childish compared to God; just as a boy, in comparison to a man. (Heraclitus, DK 79)

Wisdom is one thing. It is to understand the mind by which all things are steered through all things. (Heraclitus, DK 41)

How could one hide from what never sets? (Heraclitus, DK 16)

EMPEDOCLES

It is not possible to draw God near within easy reach of our eyes or to take hold of him with our hands which is the broadest road of persuasion that leads into the mind of man. (Empedocles, DK 133)

For he is not furnished with a human head on a body, nor do two branches shoot from a back, nor feet, nor swift knees, nor hairy parts; but he is holy and inexpressible mind alone, darting through all things in the universe with swift thoughts. (Empedocles, DK 134)

ANAXAGORAS

Other things have a part of everything, but mind is unlimited and self-ruling and is mixed with nothing, but is itself alone by itself. For if it were not by itself, but were mixed with something other, it would have a share of all things if it were mixed with any; for there is a part of everything in everything, as has been said by me in what goes before. And the things mixed with it would hinder it, so that it would rule over nothing like it does being alone by itself.

For it is the thinnest of all things and the purest, and it has all knowledge about everything and has the greatest power. And mind rules all things which have life, both the greater and the lesser. And mind ruled over the whole revolution, so that it began to revolve in the beginning. And first it began to revolve from something small, but now it revolves over a greater distance, and it will revolve over more. And mind knows all the things mixed together and those separated off, and those divided. And mind set in order all things that were to be, and all things that were but now are not, and whatever is now and whatever things will be, and this revolution in which the stars and the sun and the moon and the air and the aether go round, having been separated off. This revolution has caused them to be separated. The thick is separated from the thin, and the warm from the cold, and the bright from the dark, and the dry from the moist. There are

many parts of many things. Nothing is separated off nor divided entirely the one from the other, except mind.

Every mind is similar, both the greater and the lesser. Nothing else is like anything else, but each thing is and was most clearly those things of which it has the most. (Anaxagoras, DK 12)

Duane H. Berquist

NATURAL THEOLOGY FRAGMENTS

Three beliefs at least would seem to belong to natural religion: (1) There is something more powerful than man; (2) Something more powerful than man has mind and will; and (3) This something more powerful than man which has mind and will is concerned with the lives and actions of men.

From these beliefs follows the reasonableness of prayer and sacrifice. And vice-versa, from the existence of prayer and sacrifice, we can infer the existence of the above three beliefs in those who sincerely pray and sacrifice.

We can distinguish perhaps three stages of natural religion. The first stage is the personification of natural forces. Man recognized his dependence on natural forces (for example, the earth, sun, rain, rivers) and attributed mind and will to these natural forces.

The second stage of natural religion is an anthropomorphic conception of gods separated more or less from natural forces and in control of them. Man recognizes that the natural forces do not have mind and will so he makes these natural forces tools of the gods who have mind and will. However, these gods are imagined to have human form although they are immortal and immensely more powerful and wiser than men. Homer has already advanced to this stage (for example, Zeus is not identified with his thunderbolt but uses it) although there are remnants of the first stage (for example, the river in the *Iliad* which is angry with Achilles).

The third stage of natural religion is the separation of a mind and will more powerful than man from a body in human form. The early Greek philosophers (in particular Xenophanes, Heraclitus, Empedocles and Anaxagoras) take us into this third stage. In this stage, it is also clearly recognized that there is one supreme God although this is also found somewhat in the second stage (for example, Homer's conception of Zeus).

The gods of the poets are based more on the imagination than upon reason. And the philosophers are able to point this out and introduce a more reasonable understanding of the gods or of God.

XENOPHANES

> Homer and Hesiod have attributed to the gods all things that are shameful and blameworthy among men: stealing, adultery and deceiving each other. (Xenophanes, DK 11)
>
> They have uttered for the most part lawless deeds of the gods: stealing, adultery and deceiving each other. (Xenophanes, DK12)

One way in which the philosophers recognized the unreasonable thinking of the poets is in seeing how the poets attributed human faults and wrongdoing to the gods. This is unreasonable whether the poets thought that these actions were acceptable because done by the gods or just because they imagined that the gods were like us in their faults.

> But mortals think the gods are born and have their own clothes and voice and body. (Xenophanes, DK 14)
>
> The Ethiopians have gods snub-nosed and black; the Thracians, blue-eyed and with red [hair]. (Xenophanes, DK 16)
>
> But if oxen and horses and lions had hands or could draw with hands and produce the works which men do, horses would draw the forms of the gods like horses and oxen, like oxen, and they would make the bodies such as the bodies which they themselves have. (Xenophanes, DK 15)

Here the anthropomorphic misunderstanding of the gods is attacked by Xenophanes. The poets have not investigated by reason what things greater than us would be, but they have imagined them to be just like us in form. A sign of this is the different ways the Ethiopians and the Thracians represent them. The fact that the Ethiopians give them bodies like Ethiopians in particular have, and the Thracians, bodies like Thracians in particular, is a sign that they have not investigated by reason what these higher beings are in themselves, but they have blindly assimilated them to themselves. The absurdity of this is brought out by the proportion that if the other animals did the same as us, horses would make the gods like horses and oxen, like oxen and so on.

> [There is] one god, among gods and men the greatest, neither in body nor in mind like mortals. (Xenophanes, DK 23)

Since reason naturally seeks order and order is based on something one, Xenophanes is reasonably inclined to think that there is one supreme god. But

he also thinks this one highest god is unlike the other gods and men both in body and mind.

> The whole sees, the whole thinks, and the whole hears. (Xenophanes, DK 24)

Xenophanes also reasonably thinks that this highest god, who is the first cause, must be simple or not composed. What we do by different parts in our composed body, the supreme god can do by his one simple nature. The first cause we would reasonably guess to be simple since the simple is a cause of the composed. Hence, both the first natural philosophers and modern physicists seek simplicity in the beginning of things and in their fundamental equations.

> He always remains in the same place, being moved in no way, nor is it fitting for him to go away to another place at another time. (Xenophanes, DK 26)

The changing depends upon something unchanging. Plato and Aristotle were to bring this out fully. Change cannot be understood without something that remains the same. The first natural philosophers thought that the first matter was eternal. The modern physicist bases all his understanding upon the conservation laws.

> But without any work, he swayeth all things by the thought of [his] mind. (Xenophanes, DK 25)

Even in human society, we see that the greatest changes are the result of the thinking of one man or of a few men, percolating down to others.

HERACLITUS

> If they did not make solemn procession and sing the shameful phallic hymn to Dionysus, their deeds would be most shameful. But Hades is the same as Dionysus for whom they rave and have Bacchic revels. (Heraclitus, DK 15)

> Night-walkers, magicians, followers of Bacchus, and initiates into the mysteries - the things after death threaten these, to these fire prophesies: the mysteries practiced by men are unholy mysteries. (Heraclitus, DK 14)

Like Xenophanes, Heraclitus sees how unreasonable it is to do bad things in honor and imitation of the gods. In the first of these fragments, Heraclitus expresses himself ironically: these things would be shameful if we did not have the gods in mind in doing them.

> They purify themselves, staining themselves with other blood as if someone stepping into the mud should try to wash himself free from mud. He would seem to be mad if any man should observe him acting thus. And they pray to these statues as if someone were to chat with houses, not knowing what gods and heroes are. (Heraclitus, DK 5)

Here Heraclitus attacks other irrational things done in honor of the gods and the unreasonable praying to our own artifacts which are, of course, inferior to us.

> It is fitting that Homer be thrown out of the contest and trashed, and Archilochus likewise. (Heraclitus, DK 42)

Most Greeks admired the poets like Homer and regarded them as wise and the teachers of the Greeks. But Heraclitus here speaks of what they deserve for propagating these absurd images of the gods.

> Of all whose discourse I have heard, none has come so far as to know that the wise is set apart from all things. (Heraclitus, DK 108)

> The wise is one only. It is willing and unwilling to be called by the name of Zeus. (Heraclitus, DK 32)

Heraclitus thinks that there is one who is wise by antonomasia, one only and distinct from all other things. Again, this is reasonable because reason naturally looks for order and order is based on something one. And that this one is *wise* is also reasonable for it belong to the wise to order. Hence, the culmination of Aristotle's six-part description of the wise man in the beginning of the *Metaphysics* is that he orders others. And this is reasonable since wisdom is the highest perfection of reason of which it is proper to look for order. Reason is the ability for large discourse, looking before and after; and before and after is what order is. This wise one could be called Zeus if the poets had not abused the name.

> Human nature does not have judgment, but the divine has. (Heraclitus, DK 78)

Man is not able by his nature to judge between the true and the false and between the good and the bad. His ability to judge is acquired. He judges imperfectly by his senses and by the common. But the divine is simple as Xenophanes also thought so that by its nature it has judgment.

> The most beautiful ape is ugly compared to the genus of men. The wisest of men towards God appears an ape, in wisdom and beauty and all other things.
> (Heraclitus, DK 82-83)

> A man is called childish compared to God; just as a boy, in comparison to a man. (Heraclitus, DK 79)

In these two magisterial proportions, Heraclitus helps us to understand by likeness how man is towards God in wisdom and other things. The modern biologist calls man the wise ape (*homo sapiens*) because in comparison to the ape, man is wise. But Pythagoras said "don't call me wise; God alone is wise." In comparison to God, man is not wise. Hence, as the ape is to man so is man to God. Likewise, a man seems wise to a child, but compared to God, a man does not seem wise. Hence, as a child is to man so is man to God. This is why man must learn from God, just as a child must learn from the man. The child first learns from the man by imitating him. And this is also the way in which man first learns from God which is by imitating His works, natural things. Later the child learns more perfectly from the words of the man. Has God also spoken to us so that we might learn from His words in a more perfect way? The philosophers learned from God through natural things, but perhaps (if God has spoken to us or some men) there is another later way of learning from God through His words.

> Wisdom is one thing. It is to understand the mind by which all things are steered through all things. (Heraclitus, DK 41)

Here Heraclitus speaks of what wisdom would be even for us. It is not a heap of many kinds of knowledge, but the knowledge of one thing. This is to know "the mind by which all things are steered through all things".

> How could one hide from what never sets? (Heraclitus, DK 16)

The sun is sometimes metaphorically called the "eye of heaven". As Shakespeare says in the Sonnets: *sometimes too hot the eye of heaven doth*

shine. But if we apply this *eye of heaven* metaphorically to God's mind, it is a sun that never sets. Unlike our mind which is only sometimes in act, the divine mind is always in act and all things are seen by it. Hence, we are being urged by Heraclitus to be good since we cannot escape being seen by the divine mind. Boethius ends the *Consolation of Philosophy* with a similar observation

EMPEDOCLES

> It is not possible to draw God near within easy reach of our eyes or to take hold of him with our hands which is the broadest road of persuasion that leads into the mind of man. (Empedocles, DK 133)

Empedocles speaks of the difficulty of knowing God for our mind which follows the road from the senses into reason. We cannot judge the nature of God by what we can sense. He mentions the sense of sight and the sense of touch in particular. The sense of sight is the clearest of the senses and the sense of touch the most certain. And only these two senses know form.

> For he is not furnished with a human head on a body, nor do two branches shoot from a back, nor feet, nor swift knees, nor hairy parts; but he is holy and inexpressible mind alone, darting through all things in the universe with swift thoughts. (Empedocles, DK 134)

Empedocles also rejects the anthropomorphic images of God in the poets. And following Heraclitus and Xenophanes, he thinks of God as a mind, going though the universe, not as a body does, but with his thoughts.

ANAXAGORAS

> Other things have a part of everything, but mind is unlimited and self-ruling and is mixed with nothing, but is itself alone by itself. For if it were not by itself, but were mixed with something other, it would have a share of all things if it were mixed with any; for there is a part of everything in everything, as has been said by me in what goes before. And the things mixed with it would hinder it, so that it would rule over nothing like it does being alone by itself.

> For it is the thinnest of all things and the purest, and it has all knowledge about everything and has the greatest power. And mind rules all things which have life, both the greater and the lesser. And mind ruled over the whole revolution, so that it began to revolve in the beginning. And first it began to revolve from something small, but now it revolves over a greater distance, and it will revolve over more. And mind knows all the things mixed together and those separated off, and those divided. And mind set in order all things that were to be, and all things that were but now are not, and whatever is now and whatever things will be, and this revolution in which the stars and the sun and the moon and the air and the aether go round, having been separated off. This revolution has caused them to be separated. The thick is separated from the thin, and the warm from the cold, and the bright from the dark, and the dry from the moist. There are many parts of many things. Nothing is separated off nor divided entirely the one from the other, except mind.
>
> Every mind is similar, both the greater and the lesser. Nothing else is like anything else, but each thing is and was most clearly those things of which it has the most. (Anaxagoras, DK 12)

This is the great fragment on the mind by Anaxagoras. Since "Every mind is similar, both the greater and the lesser", what is said here about the greater mind can be understood somewhat through our own mind. And some things said about mind here are applicable to both the greater and the lesser mind proportionally. A full exposition of this fragment is given in the consideration of it among the natural fragments. But what is said here of the greater mind is a stepping-stone to understanding God.

Although the greater mind of Anaxagoras is responsible for the distinction of the parts of the natural world and their order, it is not responsible for the existence of matter. Anaxagoras has not yet arrived at a God who creates.

Duane H. Berquist

PRACTICAL FRAGMENTS OF THE FIRST PHILOSOPHERS

The Seven Wise Men of Greece
(second half of 7th century B. C. to beginning of 6th)

Four of the Seven were universally agreed upon: Thales of Miletus (the first philosopher), Pittacus of Mytilene (who said *it is difficult to be good*), Bias of Priene (who said *the many are bad while few are good*) and Solon of Athens. The earliest list of seven is that given given by Plato in the *Protagoras*, 343A-B, which adds Cleobulus of Lindus, Myson of Chen, and Chilon of Sparta. The following words at Delphi are attributed to them:

Know thyself

Nothing too much.

HERACLITUS OF EPHESUS (prime about 500 B. C.)

It belongs to all men to know themselves and to be moderate (Heraclitus, DK 116)

I have sought out myself. (Heraclitus, DK 101)

Moderation is the greatest virtue and wisdom is to speak the truth, and to act, according to nature, giving ear thereto. (Heraclitus, DK 112)

In Priene was born Bias, son of Teutamos, who has more reason than the rest. (Heraclitus, DK 39)

The best men choose one thing rather than all else: everlasting fame [glory] among mortal men. The many are satisfied like beasts. (Heraclitus, DK 29)

The shortest way to honor [glory] is to become good. (Heraclitus, DK 135)

Character for man is a daemon. (Heraclitus, DK 119)

Gods and men honour those slain in war. (Heraclitus, DK 24)

Souls of men slain in war are purer than those who die of disease. (Heraclitus, DK 136)

Honours enslave gods and men. (Heraclitus, DK 132)

If happiness were in the pleasures of the body, we would call oxen happy when they find vetch to eat. (Heraclitus, DK 4)

Asses prefer sweepings to gold. (Heraclitus, DK 9)

Pigs wash themselves in mud, birds in dust or ashes (Heraclitus, DK 37)

Do not delight in filth. (Heraclitus, DK 13)

A man, when he gets drunk, is led stumbling [staggering] along by a beardless boy, not knowing where he is going, having the soul wet. (Heraclitus, DK 117)

The dry soul is wisest and best. (Heraclitus, DK 118)

It is not better for men to obtain as much as they wish. (Heraclitus, DK 110)

Disease makes health pleasant and good; hunger, satisfaction; weariness [toil, labor], rest. (Heraclitus, DK 111)

It is hard to fight against anger; whatever it wishes, it buys at the expense of the soul. (Heraclitus, DK 85)

It is not proper to be so a jester that you yourself appear laughable. (Heraclitus, DK 130)

One should quench [put out] arrogance [insolence] rather than a conflagration. (Heraclitus, DK 43)

Bad men are the adversaries of the true. (Heraclitus, DK 133)

May wealth not fail you, men of Ephesus, so that you may be convicted of being wicked. (Heraclitus, DK 125a)

Conceit [opinion forming] is the interruption [a hindrance] of progress. (Heraclitus, DK 131)

What understanding or mind is in them? They believe the poets of the people and take the crowd as their teacher, not knowing that "the many are bad while few are good." (The quote is attributed to Bias of Priênê.) (Heraclitus, DK 104)

It would be right for all the Ephesians above age to strangle themselves and leave the city to beardless lads; for they cast out Hermodorus, the best man among them, saying “Let no man among us be the best; if there is one, let it be elsewhere and among others.” (Heraclitus, DK 121)

One man is ten thousand to me if he be the best. (Heraclitus, DK 49)

Law is also to obey the counsel of one. (Heraclitus, DK 33)

The people should fight for the law as if for their city-wall. (Heraclitus, DK 44)

Those who speak with understanding must be strong in what is common to all, as much as a city is strong in its law, and much more strongly. For all human laws are fed by one divine law which governs as far as it wishes and is enough for all and is left over and above all. (Heraclitus, DK 114)

One's lot in life [one's fortune] is a child playing a game of draughts; the kingdom belongs to a child. (Heraclitus, DK 52)

EMPEDOCLES (prime about 450 B. C.

Happy is he who has acquired the wealth of divine thoughts, but wretched the man in whom dwells dark [doubtful] opinions about the gods. (Empedocles, DK 132)

But that which is lawful for all is ordered far-stretching through the wide-ruling air and through the boundless light. (Empedocles, DK 135)

Will ye not cease from this harsh-sounding slaughter? Do you not see that you are devouring one another with careless mind? (Empedocles, DK 136)

The father, changing form, having lifted up the beloved son, slaughters him offering a blind prayer. But they are troubled, sacrificing one who begs for mercy. But he, on the other hand, not hearing the one shouting, slaughters him in his halls and prepares the evil feast. Likewise son takes father, and children their mother, and tearing out the life, eat their own flesh. (Empedocles, DK 137)

DEMOCRITUS OF ABDERA (fl.. 420 B.C.)

ETHICAL FRAGMENTS

Good things scarcely come to those seeking, but bad things even to those not seeking. (Democritus, DK 108)

Learning with labours makes beautiful things, but ugly things are reaped by themselves without labours. (Democritus, DK 182)

For men, bad things come out of what is good, if one does not know how to guide and drive easily good things. It is not right to place such things among the bad, but in the good. It is possible also to use what is good for what is bad if one strongly wishes to do so. (Democritus, DK 173)

From the same from which good things come to us, we also partake of bad things, or else we can avoid the bad things. For example, deep water is useful for many purposes, and yet again bad; for there is danger of being drowned. A way out has been found: to teach swimming. (Democritus, DK 172)

But the gods give to men all good things, both in the past and now. They do not, however, bestow things which are bad, harmful or useless, either in the past or now. But men themselves fall into these through blindness of mind and lack of sense. (Democritus, DK 175)

For the foolish, not reason but misfortune becomes the teacher. (Democritus, DK 76)

Those without understanding are shaped by the tricks of fortune, but those who know these things by the wiles of wisdom. (Democritus, DK 197)

Those without understanding, suffering misfortune, learn sense. (Democritus, DK 54)

Education is an ornament for the fortunate, but a refuge for the unfortunate. (Democritus, DK 180)

Men have made up a phantom of fortune as an excuse for their own lack of counsel. For chance rarely conflicts with foresight, and most things in life can be set right by a quickly grasping sharpsightedness. (Democritus, DK 119)

Fortune is munificent but uncertain. Nature, however, is sufficient in itself. Therefore it is victorious, by its lesser and sure means, over the greater promise of hope. (Democritus, DK 176)

The man who wishes to have serenity of spirit should not engage in many activities, either private or public, nor choose activities beyond his ability and nature. He must guard against this, so that when good fortune strikes him and leads him on to excess by means of seeming, he must put it aside, and not fasten upon things beyond his powers. A moderate amount is safer than a huge one. (Democritus, DK 3)

The hopes of right-thinking men are easy to reach, but those of men without understanding are impossible. (Democritus, DK 58)

The hopes of the educated are better than the wealth of the unlearned. (Democritus, DK 185)

The hopes of those without understanding are unreasonable. (Democritus, DK 292)

It is unreasonableness not to submit to the necessary things in life. (Democritus, DK 289)

The man using exhortation and reasonable persuasion leads better to virtue than he who uses law and force. For the man who is prevented by law from wrongdoing will likely do wrong in secret, whereas the man led towards what is right by persuasion is not likely to do something out of tune either secretly or openly. Therefore the man who acts rightly with understanding and knowledge becomes at the same time brave and judges rightly. (Democritus, DK 181)

Reason is far stronger than gold in persuasion. (Democritus, DK 51)

Many not learning reason live according to reason. (Democritus, DK 53)

Happiness

Happiness and unhappiness belong to the soul. (Democritus, DK 170)

Happiness does not dwell in flocks of cattle or in gold. The soul is the dwelling-place of the daemon. (Democritus, DK 171)

Men find happiness neither by means of the body nor through possessions, but through uprightness and fullness of understanding. (Democritus, DK 40)

Goods of the Soul, Goods of the Body, and Outside Goods

He who chooses the goods of the soul choses things more divine, but he who chooses those of the body, chooses human things. (Democritus, DK 37)

The beauty of the body is animalistic if understanding is not present. (Democritus, DK 105)

The wrongdoer is more wretched than the man wronged. (Democritus, DK 45)

It is fitting that men should take more account of the soul than of the body; for perfection of soul corrects the badness of the body, but strength of the body without reason does nothing to make the soul better. (Democritus, DK 187 or 36)

It belongs to a divine understanding to be always thinking over something beautiful. (Democritus, DK 112)

The good things of youth are strength and beauty, but the flower of old age is moderation. (Democritus, DK 294)

The old man has been young; but the young man cannot know if he will reach old age. Further, the perfect good is better than the future and uncertain good. (Democritus, DK 295)

Pleasure

The measure of the useful and the useless is pleasure and lack of pleasure. (Democritus, DK 188)

Pleasure and absence of pleasure are the measure of what is useful and what is useless. (Democritus, DK 4)

Accept no pleasure that is not useful. (Democritus, DK 74)

Good and true are the same for all men; but the pleasant differs for different men. (Democritus, DK 69)

Pigs revel in rubbish. (Democritus, DK 147)

The best way for a man to lead his life is to have been as cheerful as possible and to have suffered as little as possible. This could happen if one did not make his pleasures in mortal things. (Democritus, DK 189)

Those without understanding live without enjoyment of life. (Democritus, DK 200)

Those without understanding yearn for long life without pleasure in long life. (Democritus, DK 201)

If one oversteps the due measure, the most pleasurable things become most unpleasant. (Democritus, DK 233)

Moderation multiplies pleasures, and makes pleasure still greater. (Democritus, DK 211)

All who make their pleasures from the stomach, overstepping due measure in foods or drinks or sexual pleasures, have pleasures that are but brief and short-lived, so long as they are eating and drinking, but pains that are many. For this desire is always present for the same things, and when people get what they desire, the pleasure passes quickly, and they have nothing good for themselves except a brief enjoyment; and then again they have need for the same things. (Democritus, DK 235)

Men get pleasure from scratching themselves: they feel an enjoyment like that of lovemaking. (Democritus, DK 127)

Men ask in their prayers for health from the gods, but do not know that the power to attain this lies in themselves; and by doing the opposite through lack of control, they themselves become the betrayers of health to their desires. (Democritus, DK 234)

Untimely pleasures bring forth unpleasantness. (Democritus, DK 71)

Of pleasures, those that come most rarely please the most. (Democritus, DK 232)

The great pleasures come from looking at noble works. (Democritus, DK 194)

One should not choose every pleasure, but only that concerned with the beautiful [the noble]. (Democritus, DK 207)

They think divine things with their mind. (Democritus, DK 129)

The reason itself accustomed to take its pleasures from itself. (Democritus, DK 146)

All labours are pleasanter than rest, when men attain that for which they labour, or know that they will attain it. But likewise labour is annoying and distressing in failure. (Democritus, DK 243)

Cheerfulness [or tranquillity] comes to be in men through moderation of pleasure and due proportion of life. Things that are in defect or in excess like to change and cause great disturbance in the soul. Souls which are moved by great differences are neither cheerful nor stable. Therefore one must keep one's mind on what is possible and be satisfied with what one has, little remembering things envied and admired, and not dwelling on them in thought. Rather must you consider the lives of those suffering much, reflecting on what they undergo so much, so that what is present and belongs to you may seem great and enviable, and you may no longer suffer in your soul by desiring more. For he who admires those who have, and who are called happy by other men, and who dwells on them in his mind every hour, is always forced to undertake something new and attempt, through his desire, doing something irreparable among those things which the laws prohibit. Hence one must not seek the latter, but must be content with the former, comparing one's own life with that of those passing though worse things, and must consider oneself blessed, keeping in mind what they suffer, in doing and living better than they. If you keep to this way of thinking, you will live more serenely, and will expel those not small curses in life, envy, jealousy and ill-will. (Democritus, DK 191)

The envious man torments himself like an enemy. (Democritus, DK 88)

Some men, not knowing the dissolution of mortal nature, but conscious of evil-doing in life, distress the time of life with disturbances and fears, fabricating false myths about the time after the end of life. (Democritus, DK 297)

They are without understanding who hate life and yet wish to live through fear of Hades. (Democritus, DK 199)

Those without understanding cannot please anyone in the whole of life. (Democritus, DK 204)

Those without understanding long for life because they fear death. (Democritus, DK 205)

Those without understanding, fearing death, want to live to be old. (Democritus, DK 206)

Old age is a complete mutilation. It has all and lacks in all. (Democritus, DK 296)

Good and Bad Deeds

If any man gives ear to my maxims with understanding, he will do many things worthy of a good man, and not do many bad things. (Democritus, DK 35)

To praise noble deeds is noble; for to do so over bad deeds is the work of a base and deceiving man. (Democritus, DK 63)

One must either be good, or imitate a good man. (Democritus, DK 39)

It is a grievous thing to imitate the bad, and not even wish to imitate the good. (Democritus, DK 79)

Those naturally suited for noble deeds know and emulate them. (Democritus, DK 56)

One should emulate the deeds and actions of virtue, not the words. (Democritus, DK 55)

Speech is the shadow of action. (Democritus, DK 145)

The false and the seeming-good are those who do all in word, not in deed. (Democritus, DK 82)

Many doing the most shameful things practise the best words. (Democritus, DK 53a)

Neither can fine speech hide base action, nor can good action be disfigured by slander. (Democritus, DK 177)

The cheerful man, who is led toward works that are just and lawful, rejoices by day and by night, and is strong and free from care. But the man who takes no heed of justice, and does not do what he ought, to him all such things displeasing when he remembers any of them, and he is afraid and reproaches himself. (Democritus, DK 174)

They alone are dear to the gods to whom wrongdoing is hateful. (Democritus, DK 217)

Good is not to avoid wrongdoing, but not to wish it. (Democritus, DK 62)

Refrain from bad deeds not through fear but through duty. (Democritus, DK 41)

To yield to the law, the ruler, and the wiser man is moderate [wellordered]. (Democritus, DK 47)

It is better to deliberate before action than to repent afterwards. (Democritus, DK 66)

To be always thinking of doing makes actions unfinished. (Democritus, DK 81)

It is better to censure one's own faults than those of others. (Democritus, DK 60)

It is shameful to be so busy over the affairs of others that one does not know one's own. (Democritus, DK 80)

The man who does shameful deeds must first feel shame himself. (Democritus, DK 84)

One must not respect the other men more than one's self; nor must one be more ready to do wrong if no one will know than if all men will know. One must respect oneself especially and lay down as the law for the soul, to do nothing unfit. (Democritus, DK 264)

Neither say nor do what is base, even when you are alone. Learn to feel shame by yourself much more than before others. (Democritus, DK 244)

One must avoid even speech about bad deeds. (Democritus, DK 190)

It is a great thing in misfortune to think of what one ought [to do]. (Democritus, DK 42)

It is noble to prevent the wrongdoer; but if one cannot, one should not join him in wrongdoing. (Democritus, DK 38)

To live badly is not to live badly, but to spend a long time dying. (Democritus, DK 160)

Repentance over shameful deeds is the saving of life. (Democritus, DK 43)

The cause of wrong-doing is ignorance of the better. (Democritus, DK 83)

The Virtues

The worthy and the unworthy man *are to be known* not only from what they do, but also from what they wish. (Democritus, DK 68)

Right love is to desire without insolence the fair. (Democritus, DK 73)

It is easy to praise and blame what one should not, but both belong to a corrupt character. (Democritus, DK 192)

When bad men find fault, the good man takes no account. (Democritus, DK 48)

Honours are worth much to right-thinking men, who understand why they are being honoured. (Democritus, DK 95)

In all things, the equal is fair, overshooting and falling short not so it seems to me. (Democritus, DK 102)

Those whose character is well-ordered have also a well-ordered life. (Democritus, DK 61)

Nobility of birth in cattle depends on the health of the body, but in that of men on the good disposition of character. (Democritus, DK 57)

More men become good through practice than by nature. (Democritus, DK 242)

Nature and teaching are similar; for teaching transforms the man, and in transforming him, makes a [second] nature. (Democritus, DK 33)

Continuous association with base men increases a disposition to wickedness [badness]. (Democritus, DK 184)

Toils undertaken willingly make the endurance of those done unwillingly easier. (Democritus, DK 240)

Continuous labor becomes easier by being accustomed to it. (Democritus, DK 241)

There is an understanding in the young, and a lack of understanding in the old. For time does not teach foresight, but early bringing up and nature. (Democritus, DK 183)

Medicine heals diseases of the body, but wisdom frees the soul of passions. (Democritus, DK 31)

Courage makes difficulties small. (Democritus, DK 213)

Forgetfulness of one's own ills breeds boldness. (Democritus, DK 196)

Boldness is the beginning of action, but Fortune is the lord of the end. (Democritus, DK 269)

Men, fleeing death, pursue it. (Democritus, DK 203)

To desire without measure belongs to a child, not to a man. (Democritus, DK 70)

Violent desires for one thing blind the soul to all others. (Democritus, DK 72)

For self-sufficiency in food, a little night never comes. (Democritus, DK 209)

The animal needing something knows how much it needs, the man does not. (Democritus, DK 198)

The brave man is not only he who is stronger than the enemy, but he who is stronger than pleasures. Some men are masters of cities, but are enslaved to women. (Democritus, DK 214)

If the body brought a suit against the soul, for all the pains it had endured throughout this life, and the badly suffered, and I were to be judge of the accusation, I would vote in condemnation of the soul, in that it had partly ruined the body by its neglect and dissolved it with drunkenness, and partly destroyed it and torn it in pieces with its love of pleasure - as if, when a tool or a vessel were in bad condition, I blamed the man who was using it carelessly. (Democritus, DK 159)

Sleep in the daytime signifies disturbance of the body or distress of the soul or laziness, or lack of education (Democritus, DK 212)

Fame and wealth without understanding are not safe possessions. (Democritus, DK 77)

The employment of money with understanding is useful towards being liberal and the common good, but without understanding, it is a common means. (Democritus, DK 282)

Thrift and fasting are useful; so too is expenditure at the right time. But to know this belongs to a good man. (Democritus, DK 229)

To procure money is not without use, but if it comes from wrong-doing, nothing is worse. (Democritus, DK 78)

Wealth derived from evil doing makes the disgrace more evident. (Democritus, DK 218)

Evil gains bring loss of virtue. (Democritus, DK 220)

The hope of evil gain is the beginning of damage[loss]. (Democritus, DK 221)

The generous man is not the one looking for a return, but the one choosing to do good. (Democritus, DK 96)

Little favours at the right time are greatest to those receiving. (Democritus, DK 94)

When you do a favour, first examine the one receiving, lest being false, he give back evil for good. (Democritus, DK 93)

Accept favours foreseeing that you will have to give back greater gifts for them. (Democritus, DK 92)

Luck supplies an extravagant table, but foresight a sufficient one. (Democritus, DK 210)

The things which the body needs are easily available to all without toil or hardship. But the things which require toil and hardship and distress life, are not desired by the body, but by the bad-disposition of the mind. (Democritus, DK 223)

One should realize that human life is weak and brief and mixed with many cares and hardships, in order that one may care only for moderate possessions, and that hardship may be measured by necessities. (Democritus, DK 285)

Living abroad one's life teaches self-sufficiency; for bread and bed are the sweetest cures for hunger and fatigue. (Democritus, DK 246)

He is fortunate who is cheerful with moderate possessions, but unfortunate who is melancholy with great possessions. (Democritus, DK 286)

If your desires are not for much, little will seem much to you; for small desire makes poverty equivalent to wealth. (Democritus, DK. 284)

The desire for wealth, unless limited by satisfaction, is far harder to bear than extreme poverty; for greater desires make greater needs [lacks]. (Democritus, DK 219)

Poverty and wealth are names for lack and satiety; so that he who lacks is not wealthy, and he who does not lack is not poor. (Democritus, DK 283)

Those who yearn for what is absent, but neglect what is present being more profitable than what has gone, are without understanding. (Democritus, DK 202)

The reasonable man is he who is not saddened by what he has not, but enjoys what he has. (Democritus, DK 231)

The desire for more loses what one has, having become like the dog in Aesop. (Democritus, DK 224)

Misers have the fate of the bee; they work as if they were going to live for ever. (Democritus, DK 227)

The children of misers, if they are reared in ignorance, are like those dancers who leap between swords: if they miss, in their leap downwards, a single place where they must plant their feet, they are destroyed. But it is hard to alight upon the one spot, because only the space for the feet is left. So too with the children of misers: if they miss the paternal character of carefulness and thrift, they are apt to be destroyed. (Democritus, DK 228)

To bear poverty well belongs to a a sensible man. (Democritus, DK 291)

It is greatness of soul to bear mildly offence. (Democritus, DK 46)

It is hard to fight anger; but to control it belongs to a reasonable man. (Democritus, DK 236)

Drive back well the anger continuing in thy breast, and take care not to disturb thy soul, and do not let all things come always to the tongue. (Democritus, DK 298a)

Cast forth unmastered grief from your benumbed soul by reason. (Democritus, DK 290)

One should tell the truth, not speak at length. (Democritus, DK 44 or 225)

The life without festival is a long road without an inn. (Democritus, DK 230)

Justice is to do what should be done; injustice is to fail to do what should be done, and to put it aside. (Democritus, DK 256)

The cheerful man, who is impelled toward works that are just and lawful, rejoices by day and by night, and is strong and free from care. But the man who neglects justice, and does not do what he ought, finds all such things disagreeable when he remembers any of them, and he is a afraid and torments himself. (Democritus, DK 174)

The glory of justice is confidence of judgment and imperturbability, but the end of injustice is the fear of misfortune. (Democritus, DK 215)

The man completely enslaved to wealth can never be just. (Democritus, DK 50)

Bad men, when they escape, do not keep the oaths which they make in time of necessity. (Democritus, DK 239)

It is the work of foresight to guard against a threatened injustice, but it is the mark of insensibility not to avenge it when it has happened. (Democritus, DK 193)

Imperturbable wisdom is worth everything. (Democritus, DK 216)

Friendship

Life is not worthwhile for the one who has not even one good friend. (Democritus, DK 99)

It is fitting, being men, not to laugh at the misfortunes of others, but to lament them. (Democritus, DK 107a)

Those to whom their neighbours' misfortunes give pleasure do not understand that the things of fortune are common to all; and also they lack cause for their own joy. (Democritus, DK 293)

All relatives are not friends, but those agreeing about the useful. (Democritus, DK 107)

The enmity of relatives is much worse than that of strangers. (Democritus, DK 90)

The man who loves nobody is, it seems to me, loved by no one. (Democritus, DK 103)

Many who seem to be friends are not so, and those who do not seem so, are. (Democritus, DK 97)

In prosperity it is easy to find a friend, in adversity nothing is so difficult. (Democritus, DK 106)

Many avoid their friends when they fall from wealth to poverty. (Democritus, DK 101)

An enemy is not he who injures, but he who wishes to do so. (Democritus, DK 89)

The friendship of one who understands is better than that of all who do not understand. (Democritus, DK 98)

Animals flock together with animals of the same kind, as doves with doves, and cranes with cranes, and similarly with the rest of the animals. So it is with inanimate things, as one can see it is with sifted seeds and with the pebbles on the beaches. In the former, through the circulation of the sieve, beans are separated and ranged with beans, barley-grains with barley, and wheat with wheat; in the latter, with the motion of the wave, oval pebbles are driven to the same place as oval, and round to round,

as if the likeness in these things had a sort of power over them which had brought them together. (Democritus, DK 164)

Like thinking makes friendship. (Democritus, DK 186)

Those loving to find fault are not well-fitted for friendship. (Democritus, DK 109)

The man whose tested friends do not stay long with him is hard to turn. (Democritus, DK 100)

An old man is pleasant if wily and his speech serious. (Democritus, DK 104)

It is better to be praised by another than by oneself. (Democritus, DK 114)

Those who praise men without understanding do great harm. (Democritus, DK 113)

If you do not understand the praise, believe that you are being flattered. (Democritus, DK 115)

Fear practises flattery, but it has no good will. (Democritus, DK 268)

DOMESTIC FRAGMENTS

Disease of the home and of the life comes about in the same way as that of the body. (Democritus, DK 288)

It is better for those without understanding to be ruled than to rule. (Democritus, DK 75)

Rule belongs by nature to the stronger [better]. (Democritus, DK 267)

It is hard to be ruled by one's inferior. (Democritus, DK 49)

To be ruled by a woman is the ultimate outrage for a man. (Democritus, DK 111)

A woman is far sharper than a man in bad counsel. (Democritus, DK 273)

A woman must not practise argument: this is dreadful. (Democritus, DK 110)

Speaking little is adornment for a woman. Simplicity of ornament is also beautiful. (Democritus, DK 274)

I do not think that one should have children. I observe in the possession of children many and great risks and also many griefs, a harvest is rare, and even then thin and weak. (Democritus, DK 276)

The rearing of children is perilous. One gains success full of anguish and care, failure means grief beyond all others. (Democritus, DK 275)

Whoever needs to have children should, it seems to me, make them from his friends. He will thus obtain a child such as he wishes, for he can select the kind he wants. And the one that seems to be fit will be most apt to follow according to his nature. And this differs so much as that here it is possible to take the child out of many who is according to one's mind; but if one begets a child from himself, the risks are many; for it is necessary to accept whoever is generated. (Democritus, DK 277)

For men, it is one of the necessities of life to have children, arising from nature and ancient institution. It is clear in the other animals too: they all have offspring by nature, not for the sake of any advantage. And when they are born, the parents work hard and bring up each as best they can and are very fearful for them while they are small; and if they suffer something, the parents are grieved. But for man it has now become an established custom that there should be also some enjoyment from the offspring. (Democritus, DK 278)

The moderation of the father is the greatest instruction for the children. (Democritus, DK 208)

If children are allowed not to work, they will learn neither letters nor music nor gymnastic, nor what is above all virtue, to feel shame. For shame especially is apt to come from these. (Democritus, DK 179)

Idleness is the worst of all to teach youth; for this is what breeds those pleasures from which badness comes. (Democritus, DK 178)

It is possible without spending much of one's own money to educate one's children, and to throw around their property and their persons a wall and a safeguard. (Democritus, DK 280)

The excessive accumulation of wealth for one's children is an excuse for covetousness, which thus displays its own way. (Democritus, DK 222)

One should, as far as possible, divide out one's property among one's children, at the same time watching over them to see that they do nothing ruinous when they have it in their hands. At the same time, they thus become much more thrifty over money, and more eager to acquire it and compete with one another. Payments made in a communal establishment do not irk so much as those in a private one, nor does the income please but much less. (Democritus, DK 279)

The man who is fortunate in a son-in-law finds a son; the man unfortunate, loses his daughter also. (Democritus, DK 272)

Use slaves as parts of the body: each to his own function. (Democritus, DK 270)

POLITICAL FRAGMENTS

Learn the political art which is the greatest, and pursue its toils, from which great and brilliant things come to be for men. (Democritus, DK 157)

One must hold that what concerns the city is the greatest matter among the rest; how it may be well run; neither pursuing

disputes contrary to right, nor giving a power to oneself contrary to the common good. The well-run city is the greatest direction, and in this all things are contained; when this is saved, all is saved; when this is destroyed, all is destroyed. (Democritus, DK 252)

Communal distress is harder than that of individuals; for there remains no hope of aid. (Democritus, DK 287)

The greatest deeds and wars between cities are achieved by means of oneness of mind: there is no other way. (Democritus, DK 250)

When the powerful undertake to give to those not having, and to help them, and show kindness to them, herein at last is pity, and not being alone, and becoming companions[friends], and aiding one another, and oneness of mind among citizens; and other goods things such as no man could recount. (Democritus, DK 255)

In a shared fish, there are no bones. (Democritus, DK 151)

All love of strife is without understanding; for in considering the harm of one's enemy, one does not see what is useful to oneself. (Democritus, DK 237)

Civil war is bad to both parties; for there is like destruction both to the conquerors and the conquered. (Democritus, DK 249)

The laws would not hinder prevent each man from living according to his own authority, if one individual did not harm another; for ill-will makes the beginning of strife. (Democritus, DK 245)

The law wishes to benefit the life of men; and it is able to do so, when they themselves wish to undergo it well; for it shows to those persuaded to obey it, their own virtue. (Democritus, DK 248)

It is necessary to punish wrong-doers so far as possible, and not neglect it. To do such is just and good, but to not do so is unjust and bad. (Democritus, DK 261)

Those who do what is deserving of exile or imprisonment or are worthy of some other punishment, must be condemned and not let off. Whoever contrary to the law acquits a man, judging according to profit or pleasure, does wrong, and this is bound to be on his conscience. (Democritus, DK 262)

One must kill all those harming contrary to justice. The man who does this has the greater share of cheerfulness and justice and courage and shares a greater part of property in every ordered society. (Democritus, DK 258)

With animals, the rule for killing them and not killing is thus: any that do wrong and wish to do so may be killed with impunity, and it conduces to well-being to do so rather than not. (Democritus, DK 257)

Just as has been written regarding beasts and snakes which are hostile to man, so it seems to me it is necessary to do with regard to human beings: one should, according to the laws of our fathers, kill an enemy of the city in every ordered society, in which a law does not forbid it. But there are prohibitions in every State: sacred customs and treaties and oaths. (Democritus, DK 259)

The one killing a highway robber and plunderer shall be exempt from penalty, whether he do it by his own hand, or by urging, or by vote. (Democritus, DK 260)

There is no way under the present constitution by which magistrates can be prevented from wrong-doing, even if they are altogether good. For it is not likely for anyone else than for oneself, that he will become the same in different circumstances. Whence It is necessary that such things be ordered so that the one doing no wrong, and convicting wrong-doers, shall not fall under the power of the latter; rather, something, a law or some other means, must defend the one doing what is just. (Democritus, DK 266)

To good men, it is not advantageous that, neglecting their own affairs, they do other things; for their private affairs suffer. But if a man neglects public affairs, he becomes ill spoken of, even if he steals nothing and does no wrong. And if he is not negligent and does wrong, he is liable not only to be ill-spoken of

but also to suffer something. To make mistakes is inevitable, but it is not easy for men to forgive. (Democritus, DK 253)

Men remember mistakes more than things done well. This is just; for as the one who returning deposit does not deserve praise, but the one not returning is ill-spoken of and suffers whereas those who do not do so deserve blame and punishment, so with the ruler: he was elected not to make mistakes but to do things well. (Democritus, DK 265)

It is necessary to be on one's guard against the bad man, lest he seize his opportunity. (Democritus, DK 87)

When the bad enter upon office, the more unworthy they are, the more they become careless, and are filled with folly and rashness. (Democritus, DK 254)

He has the greatest share of justice and virtue who awards the greatest offices to the most deserving. (Democritus, DK 263)

Rule belongs by nature to the stronger [better]. (Democritus, DK 267)

It is hard to be ruled by an inferior. (Democritus, DK 49)

The man measuring himself against the stronger [better] ends in disgrace. (Democritus, DK 238)

Poverty in democracy is as much to be preferred to so-called prosperity under an oligarchy of a few powerful families, as freedom to slavery. (Democritus, DK 251)

Freedom of speech is characteristic of freedom; but the danger is in discerning the right occasion. (Democritus, DK 226)

Duane H. Berquist

PRACTICAL FRAGMENTS OF THE FIRST PHILOSOPHERS

The Seven Wise Men of Greece
(second half of 7th century B. C. to beginning of 6th)

Four of the Seven were universally agreed upon: Thales of Miletus (the first philosopher), Pittacus of Mytilene (who said *it is difficult to be good*), Bias of Priene (who said *the many are bad while few are good*) and Solon of Athens (the famous lawgiver). The earliest list of seven is that given given by Plato in the *Protagoras*, 343A-B, which adds Cleobulus of Lindus, Myson of Chen, and Chilon of Sparta. The following words at Delphi are attributed to them:

Know thyself

Nothing too much.

The exhortation *Know thyself* is addressed to men and not to angels or beasts. A beast cannot know what a beast is and the angel knows most of all himself. But man is capable of knowing himself, but at first he does not. The reason why man does not know himself at first belongs to the study of the soul. The soul is turned outwards to knowing what can be sensed, the things around our body. And only after knowing these things can it know its knowing of them and only after that its ability to know and from this the kind of thing it must be to have such ability. The understanding soul is more me than my body. And the body does not know what a body is, let alone what a soul is. But the soul can know what a body is and eventually what a soul is. Hence, the exhortation is more addressed to the soul than to the body for the former can know itself but not the latter. In a special way, the exhortation is also addressed to reason. For it is this part or ability of the soul by which it knows itself and its other parts or abilities. And reason can know what reason is. But reason also more than anything else is man. Thus to know yourself means most of all (but not only) to know the soul and especially reason. Since wisdom is the highest perfection of reason, it is not strange that the wise men should think of man as most of all reason. Other men might seem at first to identify themselves more with their emotions and with their body, but a little reflection will show that this is not so. When anger or lust or some other strong emotion is in control of a man, we all say that he has lost control of himself. But when reason is in control, we think

the man is in control. Hence, we identify ourselves more with reason than emotion. We tend to judge pre-meditated murder more severely than a murder of sudden passion. Since the man has had time to think about it, *he* seems more to have freely done it. (If he couldn't think at all about what he was doing, we wouldn't hold *him* responsible at all.) Without reason, man would be no more than a beast. When someone dies we commonly say *he* or *she* is gone because the soul has gone.

The exhortation is addressed more to the soul than the body and to reason more than the other parts of the soul. And what it is addressed more to, is also more me. But why is this exhortation addressed to man, his soul and his reason? Not only because these are able to know themselves and do not know themselves. One cannot know what is good for oneself without knowing oneself; for what is good for a thing must fit that thing. If there is truth in the exhortation which Polonius gives his son, *This above all: to thine own self be true*, one cannot achieve one's greatest good without knowing oneself. And the good of man is more the good within himself than the goods outside of him, and more the good of the soul than the good of the body, and most of all the good of reason. The distinction of human goods into the goods of the soul, the goods of the body and exterior goods is in seed here and the order of these goods as to which are better.

There is also a connection between the two exhortations. If you do not know yourself in general and in particular, you cannot know what is too much for you.

The first question that arises about their exhortation *Nothing too much* is why they said this and not (or also) *nothing too little.* For surely the wise men saw that the bad happens not only by too much, but also by too little.

Three reasons come to mind why they said *nothing too much* rather than *nothing too little* (which they left to the reader to supply). First, more harm is probably done by too much than by too little in this world. More harm is done by drinking too much than by drinking too little. More harm is done by getting too angry than not angry enough. More harm is done by seeking one's own good too much than not enough. Second, men are more apt to err by too much than by too little. This is seen especially in the matter of temperance where men are apt to go to excess in the pursuit of what is pleasing to their senses. Men are apt to think they know more than they do rather than less than they do. Third, as Sherlock Holmes said, the chief gift of the artist is knowing when

to stop. Hence, Hamlet's advice to the players warns more about overdoing something than underdoing it.

It is difficult to be good said Pittacus. And perhaps this is the reason why, as Bias says, most men are bad and few are good. And Aristotle was to say later that virtue is about the good and the difficult. Someone might draw the conclusion that it is better to be ruled by the few than by the many if it is better to be ruled by the good than by the bad. However, if the few who rule are among the bad or even the worst, it is not better to be ruled by the few.

HERACLITUS OF EPHESUS (prime about 500 B. C.)

> It belongs to all men to know themselves and to be moderate (Heraclitus, DK 116)

In this fragment, Heraclitus combines the two exhortations of the Seven Wise Men. Shakespeare represents these two (knowing oneself and moderation or temperance) as going together in the Duke (*Measure for Measure*, Act III, Sc. 2):

Duke (in disguise):	I pray you, sir, of what disposition was the Duke?
Escalus:	One that, above all other strifes, contended especially to know himself.
Duke (in disguise):	What pleasure was he given to?
Escalus:	Rather rejoicing to see another merry, than merry at anything which professed to make him rejoice: a gentleman of all temperance.

> I have sought out myself. (Heraclitus, DK 101)

Here Heraclitus touches upon the *difficulty* of obeying the exhortation to know yourself. It is not easy to know what one is in general (what is a man, what is the soul, what is reason) or in particular (the individual dispositions of one's body, soul or reason).

> Moderation is the greatest virtue and wisdom is speak the truth and to act according to nature, giving ear thereto. (Heraclitus, DK 112)

This has been called *The Royal Fragment*. One cannot begin to do justice to it in a few words. We have considered it at length among the beginning fragments. But here we note the importance of moderation which fits the emphasis of the exhortation *Nothing too much.* And we cannot act in accord with our nature if we do not know ourself.

> In Priene was born Bias, son of Teutamos, who has more reason than the rest. (Heraclitus, DK 39)

Heraclitus would seem to follow in the footsteps of the seven wise men for he continues their exhortations. And he praises one of them in particular, Bias of Priene, in this fragment. And he also follows a statement attributed to Bias (*the many are bad while few are good.*).

> The best men choose one thing rather than all else: everlasting fame [glory] among mortal men. The many are satisfied like beasts. (Heraclitus, DK 29)

If the many are satisfied like beasts, they pursue no good greater than those shared with the beast. Hence, they act as if they were no more than beasts. They do not know themselves. If the best pursue honor or glory, they seem more than beasts. Yet this is not yet to pursue the goods of the soul or reason, unless there is a connection between outward honor or glory and the inward goods of the soul. Do the best pursue honor or glory, or those goods of the soul from which true honor and glory are derived or to which they are due? The contrast of the best men pursuing honor or glory with other men can be seen in the *Iliad* of Homer.

> The shortest way to honor [glory] is to become good. (Heraclitus, DK 135)

Here, a connection is made between being good and honor or glory. But is the end to be good or to be honored for being good? Aristotle was to address this question in the first book of the *Nicomachean Ethics*. We first see human virtue as a praiseworthy quality.

> Character for man is a daemon. (Heraclitus, DK 119)

Some Greek words for happiness and misery are derived from the word *daemon* with *good* added for happiness and *bad* for misery. Perhaps, Heraclitus intends to insinuate here that our happiness or misery depends upon our (ethical) character, upon our human virtue or vice.

> Gods and men honour those slain in war. (Heraclitus, DK 24)

The most honored virtue is courage. It is also the first one considered in the *Nicomachean Ethics.* Both the Greek and Latin words for virtue seem connected with courage.

> Souls of men slain in war are purer than those who die of disease. (Heraclitus, DK 136)

Is this because they die quicker or is it because they die more nobly? The soldier dies for his country and so that others might live.

> Honours enslave gods and men. (Heraclitus, DK 132)

If men are honored for serving their country and others rather than themselves, they appear to be servants of others, if not slaves. Or perhaps the pursuit of honor as an end enslaves one to honor, just as the pursuit of money as an end enslaves one to money.

> If happiness were in the pleasures of the body, we would call oxen happy when they find vetch to eat. (Heraclitus, DK 4)

Happiness is the chief good of man who is more than a beast. Hence, it cannot consist in something we have in common with the beast. If the chief good of man were no more than the chief good of a beast, man would be no more than a beast.

> Asses prefer sweepings [litter] to gold. (Heraclitus, DK 9)

> Pigs wash themselves in mud, birds in dust or ashes (Heraclitus, DK 37)

> Do not delight in filth. (Heraclitus, DK 13)

Heraclitus forcefully urges us not to descend to the level of a beast.

> A man, when he gets drunk, is led stumbling along by a beardless boy, not knowing where he is going, having the soul wet. (Heraclitus, DK 117)

The boy again is the one deficient in the use of reason. Hence, excess of the bottle is against the good of man since reason, more than anything else, is man.

> The dry soul is wisest and best. (Heraclitus, DK 118)

The wet, although it easily receives a form, cannot hold a form. A wet soul cannot be formed in virtue or knowledge, but a dry one can. It is significant that Heraclitus couples the wisest soul and the best soul. Wisdom is the highest perfection of reason and reason is the best part of the soul. Hence, the wisest soul is also the best soul.

> It is not better for men to obtain as much as they wish. (Heraclitus, DK 110)

> Disease makes health pleasant and good; hunger, satisfaction; weariness [toil, labor], rest. (Heraclitus, DK 111)

The first statement would seem to be true for the goods of the body. The pleasures of the body seem to be preceded and made greater by something painful or disagreeable. Socrates talks about this in the *Phaedo* and elsewhere. It says something about the impurity or deficiency of these goods that they go with or after something bad.

> It is hard to fight against anger; whatever it wishes, it buys at the expense of the soul. (Heraclitus, DK 85)

Moderation of anger is very important. Excessive anger is a temporary madness which is the badness of the soul. And anger in conversation prevents the soul from seeing clearly. More heat than light is generated. And anger can corrupt the rendering of justice.

> It is not proper to be so a jester that you yourself appear laughable. (Heraclitus, DK 130)

There is a virtue in regard to the laughable. Men are apt to go to excess in the pursuit of the laughable.

> One should quench arrogance rather than a conflagration. (Heraclitus, DK 43)

This excess comes from pride which is a spiritual intemperance, more in the will than in the emotions. Pride is a disordered or excessive desire for one's own excellence and contempt or scorn for others is a result of this.

> Bad men are the adversaries of the true. (Heraclitus, DK 133)

Since good and bad are contraries, they are opposed. But the bad are more the adversaries of the good than the reverse. For the bad seek to harm the good while the good seek to change the bad for the better.

> May wealth not fail you, men of Ephesus, so that you may be convicted of being wicked. (Heraclitus, DK 125a)

Wealth is used by the bad for bad things so that their possession of wealth helps to make known their badness by the use of it. Likewise, strength or power in a bad man will reveal his wickedness even more; for he will do many bad things with the help of this strength or power that he could not do without them.

> Conceit [opinion forming] is the interruption [a hindrance] of progress. (Heraclitus, DK 131)

The proud man rests on his laurels, on the good opinion which he has formed of his work so far.

> What understanding or mind is in them? They believe the poets of the people and take the crowd as their teacher, not knowing that "the many are bad while few are good." (The quote is attributed to Bias of Priênê.) (Heraclitus, DK 104

To follow the poets is to take the imagination as your teacher rather than reason. And if the crowd prefer a life suitable to beasts (as Aristotle notes in the first book of the *Nicomachean Ethics*) in that they seek no good higher than that had by the beasts (the pleasures of eating, reproducing and sleeping), to

take the crowd as a teacher is to adopt the life of the beast. And aristocracy is better than democracy if the few are good and the many bad. But in the life of the mind, one can surely learn more from the few than from the many.

> It would be right for all the Ephesians above age to strangle themselves and leave the city to beardless lads; for they cast out Hermodorus, the best man among them, saying "Let no man among us be the best; if there is one, let it be elsewhere and among others." (Heraclitus, DK 121)

This is an example of the many, and presumably the bad, opposing the good. But it is more particularly an example of the pride or envy of the little against the great. Heraclitus shows the unreasonableness of their action by a proportion. If they should cast out Hermodorus just because he is better than they are, they should cast themselves out because they are better than the beardless lads of the city. (And then the lads should turn it over to the beasts since they are better than the beasts.) This is a kind of reduction to the absurd of the democratic desire for complete equality among men.

> One man is ten thousand to me if he be the best. (Heraclitus, DK 49)

Hermodorus would seem to be an example for Heraclitus of a man who is worth a whole city. Or Bias of Priene. When Plato thanked the gods for having met Socrates and left Athens after their condemnation of Socrates, he must have had similar thoughts. One can learn more from one great mind than from ten thousand ordinary minds.

> Law is also to obey the counsel [advice, plan, design] of one. (Heraclitus, DK 33)

It is lawful to obey that one man who is worth ten thousand.

From the last few fragments, one might guess that Heraclitus is open more to an aristocratic government than to a democratic one. This would seem to follow from the beginning that few are good and the many are bad. Hence, rule by the many must be rule by the bad while only a government by the few could be government by the good. However, it is also possible that the few could be the worst among the many bad. Thus to be ruled by the few would either be better

or worse than to be ruled by the many. *Aristocracy* however means rule by the few best (*aristos* in Greek means *best*)

> The people should fight for the law as if for their city-wall. (Heraclitus, DK 44)

It is easier to see how the city-wall protects the people than its law. But a little reflection will bring out the primacy of the law. It is not by chance that those who take office in the United States are first sworn to uphold the Constitution which is the fundamental law of the land.

> Those who speak with understanding must be strong in what is common to all, as much as a city is strong in its law, and much more strongly. For all human laws are fed by one divine law which governs as far as it wishes and is enough for all and is left over and above all. (Heraclitus, DK 114)

This fragment is considered more properly with the road of reason. But it can be considered here insofar as Heraclitus sees in it that the law of the city or the written law is fed by a higher law which he here calls the *divine* law. The law of the city or nation should be measured by a higher law. If it is not, it may actually harm the people.

> One's lot in life [or one's fortune] is a child playing a game of draughts; the kingdom belongs to a child. (Heraclitus, DK 52)

Perhaps Heraclitus compares fortune to a child because the child lacks the use of reason found in the man. Insofar as human life is subject to fortune, it seems to be without reason.

EMPEDOCLES (prime about 450 B. C.

> Happy is he who has acquired the wealth of divine thoughts, but wretched the man in whom dwells dark [doubtful] opinions about the gods. (Empedocles, DK 132)

Since reason is the best part of the soul (which is better than the body) and the gods are the best thing reason considers, necessarily happiness consists chiefly

in knowing the truth about the gods. Hence, the opposite of this in reason must be most wretched or miserable.

> But that which is lawful for all is ordered far stretching through the wide-ruling air and through the boundless light. (Empedocles, DK 135)

Like Heraclitus, Empedocles thinks there is a higher law for all men. He also sees it as dwelling perhaps in the higher elements, air and fire or light, not in the baser elements of water and earth.

> Will ye not cease from this harsh-sounding slaughter [murder]? Do you not see that you are devouring one another with careless mind? (Empedocles, DK 136)

> The father, changing form, having lifted up the beloved son, slaughters him offering a blind prayer. But they are troubled, sacrificing one who begs for mercy. But he, on the other hand, not hearing the one shouting, slaughters him in his halls and prepares the evil feast. Likewise son takes father, and children their mother, and tearing out the life, eat their own flesh. (Empedocles, DK 137)

These last two fragments seem to be condemnations by Empedocles of unnatural or bestial vices, vices which Aristotle considers to be below even human vice in the seventh book of the *Nicomachean Ethics*.

DEMOCRITUS OF ABDERA (fl. 420 B.C.)

ETHICAL FRAGMENTS

> Good things scarcely come to those seeking, but bad things even to those not seeking. (Democritus, DK 108)

> Learning with labours makes beautiful things, but ugly things are reaped by themselves without labours. (Democritus, DK 182)

In these two fragments, Democritus speaks of how special effort and learning are necessary to achieve good and beautiful things while bad and ugly things come without any effort on our part. Thus since everyone seeks, or should seek, good and beautiful things in life and should try to avoid bad and ugly things, special effort and even learning on our part are acquired.

> For men, bad things come out of what is good, if one does not know how to guide and drive easily good things. It is not right to place such things among the bad, but in the good. It is possible also to use what is good for what is bad if one strongly wishes to do so. (Democritus, DK 173)

> From the same from which good things come to us, we also partake of bad things, or else we can avoid the bad things. For example, deep water is useful for many purposes, and yet again bad; for there is danger of being drowned. A way out has been found: to teach swimming. (Democritus, DK 172)

Even from good things, bad things happen to man through his ignorance of how to use them or his desire to misuse them.

> But the gods give to men all good things, both in the past and now. They do not, however, bestow things which are bad, harmful or useless, either in the past or now. But men themselves fall into these through blindness of mind and lack of sense. (Democritus, DK 175)

The gods are not responsible for the bad things that happen to men. Men, through their mental blindness and lack of judgment, are responsible for the bad things which happen to them.

> For the foolish, not reason but misfortune becomes the teacher. (Democritus, DK 76)

> Those without understanding are shaped by the tricks of fortune, but those who know these things by the wiles of wisdom. (Democritus, DK 197)

> Those without understanding, suffering misfortune, learn sense. (Democritus, DK 54)

Fortune or luck is an accidental cause of what happens rarely as a result of actions done by reason for an end. Hence, fortune and reason are sometimes distinguished as causes in that what happens by fortune or luck is outside what is intended by reason while to the extent that something is subject to reason it is not by fortune or luck. Hence, the foolish who have a defect of reason are said to be taught by fortune rather than by reason. And since wisdom is the perfection of reason, one can similarly contrast those who are shaped by wisdom and those who are shaped by fortune. But the school of fortune is the proverbial school of hard knocks. To the extent that we live by reason, however, our life is not left to luck or fortune.

> Education is an ornament for the fortunate, but a refuge for the unfortunate. (Democritus, DK 180)

Even the educated cannot escape misfortune, but they have a remedy for it from their education.

> Men have made up a phantom of fortune as an excuse for their own lack of counsel. For chance rarely conflicts with foresight, and most things in life can be set right by a quickly grasping sharp-sightedness. (Democritus, DK 119)

Foresight is the virtue of reason which directs us in our actions. Counsel is a part of foresight. Men exaggerate the extent to which they are not responsible for the results of their lack of counsel and try to pass the responsibility over to fortune. But we are the cause of opposites by our counsel or the lack of it.

> Fortune is munificent but uncertain. Nature, however, is sufficient in itself. Therefore it is victorious, by its lesser and sure means, over the greater promise of hope. (Democritus, DK 176)

A reason for trusting nature more than fortune. The foolish hope in fortune more.

> The man who wishes to have serenity of spirit should not engage in many activities, either private or public, nor choose activities beyond his ability and nature. He must guard against this, so that when good fortune strikes him and leads him on to excess by means of seeming, he must put it aside, and not fasten upon things

> beyond his powers. A moderate amount is safer than a huge one. (Democritus, DK 3)

Fortune bestows too much upon some and this leads them to attempt foolishly things beyond their powers. Again, we see the wisdom of the exhortation *Nothing too much.*

> The hopes of right-thinking men are easy to reach, but those of men without understanding are impossible. (Democritus, DK 58)

The hopes of reasonable men are based on nature and foresight, but those without understanding are based on fortune and imagination. Hence, the former are often possible and the latter often impossible to be realized.

> The hopes of the educated are better than the wealth of the unlearned. (Democritus, DK 185)

The uneducated do not even know how to use the wealth they may happen to have. But the hopes of the educated are founded on nature and reason and therefore more possible.

> The hopes of those without understanding are unreasonable. (Democritus, DK 292)

They are unreasonable because they are based, not on nature, but on fortune and imagination and come from unreasonable desire.

> It is unreasonableness not to submit to the necessary things in life. (Democritus, DK 289)

Reason must accept what cannot be changed. It pertains to wisdom to discern what can and what cannot be changed.

> The man using exhortation and reasonable persuasion leads better to virtue than he who uses law and force. For the man who is prevented by law from wrongdoing will likely do wrong in secret, whereas the man led towards what is right by persuasion is not likely to do something out of tune either secretly or openly. Therefore the man who acts rightly with understanding and

> knowledge becomes at the same time brave and judges rightly. (Democritus, DK 181)

The classical reason why persuasion is better than force in becoming good and avoiding what is bad.

> Reason is far stronger than gold in persuasion. (Democritus, DK 51)

Gold does not persuade us within even if it helps to get outward cooperation. But reason persuades within.

> Many not learning reason live according to reason. (Democritus, DK 53)

The man who has been brought up well has acquired reasonable habits whereby he is disposed to live reasonably without thinking about it. To be reasonable has become second nature to him.

Happiness

> Happiness and unhappiness belong to the soul. (Democritus, DK 170)

If happiness is to live well and unhappiness to live badly, and we live by the soul, then happiness and unhappiness must be chiefly in the soul. And if the living body is better than the non-living body by its soul, then the soul is what is best in living bodies. Therefore, the chief or greatest good of man which is happiness will be found primarily in the best part of man, the soul. Hence, also his greatest evil, unhappiness, will be found in his soul.

> Happiness does not dwell in flocks of cattle or in gold. The soul is the dwelling-place of the daemon. (Democritus, DK 171)

The Greek word for happiness here (*eudaimonia*) includes the word *daemon*. If the daemon is in the soul, then happiness is also there. Socrates often refers to his daemon. This bears some likeness to what Christians call a guardian angel. A consequence of happiness being where the daemon is, is that happiness cannot be in our exterior possessions.

> Men find happiness neither by means of the body nor through possessions, but through uprightness and fullness of understanding. (Democritus, DK 40)

Underlying this statement is the division of all human goods into those of the soul, those of the body and exterior or outside goods. If happiness is in the soul, we will achieve happiness chiefly through the goods of the soul. If happiness is our greatest good and the goods of the soul are greater than the goods of the body and outside goods, then it is also reasonable to see happiness as achieved primarily through the goods of the soul. Hence, ethics, which is about happiness, considers most of all the goods of the soul. This involves the good of reason (fullness of understanding) and perhaps the good of the will (uprightness).

Goods of the Soul, Goods of the Body, and Outside Goods

> He who chooses the goods of the soul chooses things more divine, but he who chooses those of the body, chooses human things. (Democritus, DK 37)

No one thinks that the body is more godlike than the soul. If the soul is more like God than the body (hence, some say that the soul is made in the image of God), then the goods of the soul are more godlike than the goods of the body. Hence, too, since God is thought by all to be better than us, the goods of the soul must also be better than those of the body.

> The beauty of the body is animalistic if understanding is not present. (Democritus, DK 105)

Since reason or understanding is what distinguishes man from the beast or mere animal, the subtraction of understanding leaves man a mere animal. But when the body's emotions and movements are directed by reason, they seem to share in something of the higher.

> The wrongdoer is more wretched than the man wronged. (Democritus, DK 45)

This is the surprising conclusion from the goods of the soul being so much greater than the goods of the body and outside goods. The wrongdoer suffers in his soul the loss of the greatest goods while the man wronged suffers the loss of the much lesser goods, either of the body or outward goods. This conclusion (which Socrates also brings out so often) is paradoxical and seems unlikely to the man in the street.

> It is fitting that men should take more account of the soul than of the body; for perfection of soul corrects the badness of the body, but strength of the body without reason does nothing to make the soul better. (Democritus, DK 187 or 36)

The medical art and the virtue of moderation are goods of the soul which benefit the body. But the strength of the body is not incompatible with a foolish and intemperate soul. This is a secondary reason for preferring the good of the soul over the good of the body.

> It belongs to a divine understanding to be always thinking over something beautiful. (Democritus, DK 112)

The beautiful is found only in the higher senses, the senses of sight and hearing. The lower senses are tied to the pleasures which we share with the other animals. But the beautiful introduces us to something higher.

> The good things of youth are strength and beauty, but the flower of old age is moderation. (Democritus, DK 294)

The young rejoice in the goods of their body but the old have more to rejoice in if they have acquired the goods of the soul.

> The old man has been young; but the young man cannot know if he will reach old age. Further, the perfect good is better than the future and uncertain good. (Democritus, DK 295)

The fool says to Lear that he is old before his time because he was old before he was wise. One must not delay till old age the pursuit of the goods of the soul.

Pleasure

> The measure of the useful and the useless is pleasure and lack of pleasure. (Democritus, DK 188)
>
> Pleasure and absence of pleasure are the measure of what is useful and what is useless. (Democritus, DK 4)

The consideration of pleasure is close to the consideration of happiness. In Book Ten of the *Nicomachean Ethics*, Aristotle considers pleasure and then happiness, both of which seem to be a result of virtue. In the above two fragments, Democritus seems close to those like the Epicureans in ancient times and the utilitarians in modern times who make pleasure the measure of good and bad.

> Accept no pleasure that it is not useful. (Democritus, DK 74)

How should one understand *useful* here? If in the narrow sense, then why should one be interested in the beautiful? Or does Democritus merely want us to avoid pursuing pleasures that harm us or that are connected with something that harms us, either in body or soul?

> Good and true are the same for all men; but the pleasant differs for different men. (Democritus, DK 69)

Here Democritus distinguishes between the pleasant and the good and the true. The former is not the same for all men, but the good and the true are. This is easier to see about the true. The same statement cannot be true for one man and false for another. By *same* we mean with the same subject and predicate and copula. A statement such as *two is half of four* or *Socrates is sitting* is either true or false. Some may know that it is true or false and some may not. But in itself the statement is either true (because it says what-is is or what-is-not is not) or false (because it says what-is is not or what-is-not is.) Some statements like *Socrates is sitting* may be true at one time and false at another time, but there is never a time when it is *both* true and false. Since what fits a thing is good for it, and men have a common nature, what fits this common nature is good for all men. Thus to be reasonable is good for all men. And to be wise and to be just and to be moderate and to be courageous is also good for all men. But there are individual differences among men so that what is good for one man may not be altogether the same for another man. But what is pleasant

for one man and for another man may be different, not only because of their individual inborn differences, but also because of the dispositions of soul they have acquired. Those who have acquired dispositions that fit our common nature and those who have acquired dispositions that are not in harmony with our common nature will delight also in different things.

This fragment also raises the question of whether Democritus sees pleasure as the ultimate criterion of action.

Pigs revel in rubbish. (Democritus, DK 147)

This also makes one wonder whether Democritus thinks pleasure is the ultimate criterion of good and bad.

> The best way for a man to lead his life is to have been as cheerful as possible and to have suffered as little as possible. This could happen if one did not make his pleasures in mortal things. (Democritus, DK 189)

The first statement in this fragment seems to make pleasure and the absence of pain the measure of the best life, something to which neither Plato nor Aristotle would agree. In the second statement on how the maximum of pleasure and the minimum of pain is to be achieved, we are given the negative advice not to seek our pleasures in mortal things. This refers to human rather than divine things and therefore to the pleasures of the body. Aristotle was to say in the tenth book of the *Nicomachean Ethics*, that we should strive after the immortal so far as possible.

> Those without understanding live without enjoyment of life. (Democritus, DK 200)

Those without understanding do not know where true pleasure is to be found. Hence, they live without true enjoyment of life

> Those without understanding yearn for long life without pleasure in long life. (Democritus, DK 201)

If pleasure is the measure of the good life, then it seems foolish to want to live without pleasure. However, there seems to be a desire for life in man which he does not easily forego even when his life is difficult.

> If one oversteps the due measure, the most pleasurable things become most unpleasant. (Democritus, DK 233)

> Moderation multiplies pleasures, and makes pleasure still greater. (Democritus, DK 211)

These truths about pleasure and moderation seem to be especially applicable to the pleasures of the body.

> All who make their pleasures from the stomach, overstepping due measure in foods or drinks or sexual pleasures, have pleasures that are but brief and short-lived, so long as they are eating and drinking, but pains that are many. For this desire is always present for the same things, and when people get what they desire, the pleasure passes quickly, and they have nothing good for themselves except a brief enjoyment; and then again they have need for the same things. (Democritus, DK 235)

This applies the previous two fragments to the pleasures of the body. And how quickly these pleasures diminish and pass away.

> Men get pleasure from scratching themselves: they feel an enjoyment like that of lovemaking. (Democritus, DK 127)

Plato has the reduction to the absurd of pursuing, as much as one can, pleasures like that of scratching.

> Men ask in their prayers for health from the gods, but do not know that the power to attain this lies in themselves; and by doing the opposite through lack of control, they themselves become the betrayers of health to their desires. (Democritus, DK 234)

Often the excessive pursuit of the pleasures of the body leads to sickness. It is laughable for such men to pray for health when the remedy lies in their own power of being moderate.

> Untimely pleasures bring forth unpleasantness. (Democritus, DK 71)

This is another warning of the folly of pursuing pleasure out of order or without moderation. Aristotle in the second book of the *Nicomachean Ethics* also warns us about pleasure in his three rules for acquiring moral virtue.

> Of pleasures, those that come most rarely please the most. (Democritus, DK 232)

This complicates life for those trying to maximize their pleasures. It points perhaps to the need to have many kinds of pleasure in life. Variety is the spice of life.

> The great pleasures come from looking at noble works. (Democritus, DK 194)

This is good advice on where to look for pleasure.

> One should not choose every pleasure, but only that concerned with the beautiful [the noble]. (Democritus, DK 207)

There are pleasures concerned with the necessities of life. Since one *must* eat and sleep etc., one can enjoy the pleasures associated with these activities. But one should not choose such pleasures for their own sake apart from these necessary acts. Such pleasures diminish as the body's need is satisfied and trying to prolong them easily leads to pain or discomfort. But one should choose more for their own sake the immaterial or spiritual pleasures tied to the beautiful and noble.

> They think divine things with their mind. (Democritus, DK 129)

> The reason itself accustomed to take its pleasures from itself. (Democritus, DK 146)

The educated reason can take pleasure in itself or by itself. Hence, those who want to maximize their pleasures should educate their reason. These pleasures have the least dependence upon the exterior.

> All labours are pleasanter than rest, when men attain that for which they labour, or know that they will attain it. But likewise labour is annoying and distressing in failure. (Democritus, DK 243)

Who are more pleased: the idle or those who labor? The pleasure of success is enjoyed only by those who labor. And this success or the anticipation of it also diminishes the pain of labor. But the idle are without activity while pleasure seems to accompany good acts.

> Cheerfulness [or tranquility] comes to be in men through moderation of pleasure and due proportion of life. Things that are in defect or in excess like to change and cause great disturbance in the soul. Souls which are moved by great differences are neither cheerful nor stable. Therefore one must keep one's mind on what is possible and be satisfied with what one has, little remembering things envied and admired, and not dwelling on them in thought. Rather must you consider the lives of those suffering much, reflecting on what they undergo so much, so that what is present and belongs to you may seem great and enviable, and you may no longer suffer in your soul by desiring more. For he who admires those who have, and who are called happy by other men, and who dwells on them in his mind every hour, is always forced to undertake something new and attempt, through his desire, doing something irreparable among those things which the laws prohibit. Hence one must not seek the latter, but must be content with the former, comparing one's own life with that of those passing though worse things, and must consider oneself blessed, keeping in mind what they suffer, in doing and living better than they. If you keep to this way of thinking, you will live more serenely, and will expel those not small curses in life, envy, jealousy and ill will. (Democritus, DK 191)

> The envious man torments [pains] himself like an enemy. (Democritus, DK 88)

In these fragments, Democritus warns against envy as a source of pain. We must train ourselves not to envy those better off than us, but rather we must consider how we are better off than others and be satisfied with our lot in life.

> Some men, not knowing the dissolution of mortal nature, but conscious of evil-doing in life, distress the time of life with disturbances and fears, fabricating false myths about the time after the end of life. (Democritus, DK 297)

> They are without understanding who hate life and yet wish to live through fear of Hades. (Democritus, DK 199)

Democritus would seem to differ from Plato and Aristotle who held that the soul of man is immortal. Socrates in the *Phaedo* investigates whether the soul is immortal and, if so, whether it is better off then. Plato also has Socrates speak of a judgment of souls after death.

> Those without understanding cannot please anyone in the whole of life. (Democritus, DK 204)

This would seem to include even themselves. They have no true pleasures.

> Old age is a complete mutilation. It has all and lacks in all. (Democritus, DK 296)

> Those without understanding long for life because they fear death. (Democritus, DK 205)

> Those without understanding, fearing death, want to live to be old. (Democritus, DK 206)

Life without pleasure does not seem worth living for Democritus. But is it unreasonable to fear death? Death is the loss of life. Some have tried to say, of course, that when we are dead, nothing bad can come to us. For we are not and nothing can happen to what is not. Yet reason naturally sees that it is good to be.

Good and Bad Deeds

> If any man gives ear to my maxims with understanding, he will do many things worthy of a good man, and not do many bad things. (Democritus, DK 35)

The instructions of Democritus here have something in common with proverbs which contract much experience in a few words.

> To praise noble deeds is noble; for to do so over bad deeds is the work of a base and deceiving man. (Democritus, DK 63)

Men first come to know the goodness or badness of a deed by what is outside it – the praise or dispraise of it. This is especially true for the child. Only later, if ever, do we know it inwardly, why it is good or bad. Hence, the great importance of praising good deeds, but not bad deeds.

> One must either be good, or imitate a good man. (Democritus, DK 39)

> It is a grievous thing to imitate the bad, and not even wish to imitate the good. (Democritus, DK 79)

Man is the most imitative of the animals and, at first, we learn by imitation. This is true of virtue as well as of other things. And indeed the virtuous man is the measure. But it is a terrible thing when we imitate the bad. Hence, one's companions, or those with whom one associates, must be carefully chosen.

> Those naturally suited for noble deeds know and emulate them. (Democritus, DK 56)

There is a natural inclination for (at least some) virtues more in some men than in others.

> One should emulate the deeds and actions of virtue, not the words. (Democritus, DK 55)

The word *indeed* is perhaps a sign of the truth of this statement. Friendship is shown, for example, more in deeds than in words. Hence, there is a kind of pun to be seen in the saying that *a friend in need is a friend indeed*. Virtue consists more in the doing than in the words.

> Speech is the shadow of action. (Democritus, DK 145)

> The false and the seeming-good are those who do all in word, not in deed. (Democritus, DK 82)

> Many doing the most shameful things practise the best words. (Democritus, DK 53a)

Speech is not the substance of good action. Rather it is to good action as a shadow is to a body. A shadow bears a likeness to the body, but is not the body. One should not be deceived by likeness, either in ourselves or in others. We must not mistake our good words, or their good words, for the substance of good action.

> Neither can fine speech hide base action, nor can good action be disfigured by slander. (Democritus, DK 177)

It is said that *actions speak louder than words*. We eventually judge a man by what he does, not by what he says, when this is in contradiction with what he does.

> The cheerful man, who is led toward works that are just and lawful, rejoices by day and by night, and is strong and free from care. But the man who takes no heed of justice, and does not do what he ought, to him all such things displeasing when he remembers any of them, and he is afraid and reproaches himself. (Democritus, DK 174)

Good deeds are naturally more pleasing than bad deeds. And one's mind or conscience is more at rest after the former than after the latter.

> They alone are dear to the gods to whom wrongdoing is hateful. (Democritus, DK 217)

If it is important that man be pleasing to the gods or the friendship of the gods is helpful to man, then man must in his heart hate wrongdoing.

> Good is not to avoid wrongdoing, but not to wish it. (Democritus, DK 62)

A man is good, not alone because he does not do what is wrong, but because he has no desire to do so.

> Refrain from bad deeds not through fear but through duty. (Democritus, DK 41)

The man who refrains from bad deeds through fear of being caught and punished is not really a good man. Hence, Plato in the *Republic*, Book II (359D

seq.) tells the story of the ring of Gyges. If one could become invisible by turning the ring, would one refrain from evil-doing?

> To yield to the law, the ruler, and the wiser man is moderate [well ordered]. (Democritus, DK 47)

There are different reasons for obeying each of these.

> It is better to deliberate before action than to repent afterwards. (Democritus, DK 66)

This is a similar truth to that in the saying *Act in haste, repent at leisure.*

> To be always thinking of doing makes actions unfinished. (Democritus, DK 81)

This is to avoid the *Hamlet* complex.

> It is better to censure one's own faults than those of others. (Democritus, DK 60)

This is so because it increases one's humility rather than one's pride and also because it will lead one to correct one's faults.

> It is shameful to be so busy over the affairs of others that one does not know one's own. (Democritus, DK 80)

One must set one's own house in order before one's neighbour's house.

> The man who does shameful deeds must first feel shame himself. (Democritus, DK 84)

Although shame is more naturally felt in the presence of others, if one does not feel shame before oneself, one will not be apt to be good by oneself. One will be good in appearance only

> One must not respect the other men more than one's self; nor must one be more ready to do wrong if no one will know than if all men will know. One must respect oneself especially and lay down as the law for the soul, to do nothing unfit. (Democritus, DK 264)

> Neither say nor do what is base, even when you are alone. Learn to feel shame by yourself much more than before others. (Democritus, DK 244)

This is part of what it means to be ruled by reason. One must listen to reason and not to oneself.

> One must avoid even speech about bad deeds. (Democritus, DK 190)

St. Paul gives similar advice in the *Epistles*.

> It is a great thing in misfortune to think of what one ought [to do]. (Democritus, DK 42)

Misfortune is often an excuse for wrong-doing.

> It is noble to prevent the wrongdoer; but if one cannot, one should not join him in wrongdoing. (Democritus, DK 38)

The latter is always in our power, but the former many times is not.

> To live badly is not to live badly, but to spend a long time dying. (Democritus, DK 160)

The one who lives badly is more dying than living. He does not know how to live. Sin is nothing said Augustine and the man who sins becomes nothing. The bad is always a lack, the non-being of something one should have.

> Repentance over shameful deeds is the saving of life. (Democritus, DK 43)

If doing shameful or bad deeds is more dying than living, only repentance can turn one away from such deeds and back to life.

> The cause of wrong-doing is ignorance of the better. (Democritus, DK 83)

Everyone who does wrong is mistaken. However, this does not mean that virtue is knowledge as Socrates thought. Moreover, we are often the cause of our own ignorance in choice.

The Virtues

> The worthy and the unworthy man (*are to be known*) not only from what they do, but also from what they wish. (Democritus, DK 68)

Virtue consists not only in outward actions, but also and even more in the inward rectitude of the heart.

> Right love is to desire without insolence the fair. (Democritus, DK 73)

The Greek word for love here is *eros* which names a need-love. Such love should be humble for desire, as Socrates explains in the *Symposium*, is for what one lacks.

> It is easy to praise and blame what one should not, but both belong to a corrupt character. (Democritus, DK 192)

> When bad men find fault, the good man takes no account. (Democritus, DK 48)

> Honours are worth much to right-thinking men, who understand why they are being honoured. (Democritus, DK 95)

Virtue is an honorable or praiseworthy quality and vice is a dishonorable or blameworthy quality. However, one must take into account who is being honored or praised by whom and for what.

> In all things, the equal is fair, overshooting and falling short not so it seems to me. (Democritus, DK 102)

> Those whose character is well-ordered have also a well-ordered life. (Democritus, DK 61)

Virtue lies in the middle or mean between excess and defect. Virtue is also a well-ordered character. Those who have virtue are then apt to have a well-ordered life (and one that avoids unreasonable extremes).

> Nobility of birth in cattle depends on the health of the body, but that of men on the good disposition of character. (Democritus, DK 57)

> More men become good through practice than by nature. (Democritus, DK 242)

> Nature and teaching are similar; for teaching transforms the man, and in transforming him, makes a [second] nature. (Democritus, DK 33)

Men are more made good by practice than born good. Their goodness is more a second nature than the nature in which they are born. Thus moral virtues and vices are *customary* virtues or vices (that is, by custom) more than *natural* virtues or vices (that is, inborn or by birth).

> Continuous association with base men increases a disposition to wickedness [badness]. (Democritus, DK 184)

Men also become bad by being accustomed to it in the company of bad men. Man is by nature a social animal and acquires virtues or vices to some extent from those with whom one lives or associates.

> Toils undertaken willingly make the endurance of those done unwillingly easier. (Democritus, DK 240)

Doing what is difficult even when it is not necessary prepares one for doing what is difficult when it is necessary.

> Continuous labor becomes easier by being accustomed to it. (Democritus, DK 241)

Virtue is a habit which makes activity in accord with it easier.

> There is an understanding in the young, and a lack of understanding in the old. For time does not teach foresight, but early bringing up and nature. (Democritus, DK 183)

Foresight, the virtue that directs us in our actions, depends upon an understanding gotten in part by nature and in part by how we have been brought up in life.

> Medicine heals diseases of the body, but wisdom frees the soul of passions. (Democritus, DK 31)

Wisdom is the perfection of reason which Shakespeare calls the physician to our soul. Hence, Wisdom personified visits Boethius in the *Consolation of Philosophy* and proceeds to free him from his passions.

> Courage makes difficulties small. (Democritus, DK 213)

> Forgetfulness of one's own ills breeds boldness. (Democritus, DK 196)

> Boldness is the beginning of action, but Fortune is the lord of the end. (Democritus, DK 269)

> Men, fleeing death, pursue it. (Democritus, DK 203)

The first virtue considered in the *Nicomachean Ethics* is courage which also seems to be the one most honored. Courage is about what is most difficult, to stay and fight for the good of one's country. But virtue makes what is in accord with it easier. Hence, true courage makes the difficulty seem small. The courageous man thinks of the good of his country rather than of his own danger and becomes bold in the defense of his country. But the boldness does not determine necessarily the outcome of his action. Fortune plays a large role in war. However, as Caesar says in Shakespeare's play, the brave taste of death but once, but cowards die many times.

> To desire without measure belongs to a child, not to a man. (Democritus, DK 70)

The second virtue considered in the *Nicomachean Ethics* is temperance or moderation (in the pleasures of eating and drinking and reproducing). A child

left to himself is apt to desire these pleasures to excess. But reason, which is more developed in the man, should moderate the desire for these pleasures. But just as a child left to his own will becomes unruly, so too our ability to desire these pleasures becomes unruly if we do not deny ourself.

> Violent desires for one thing blind the soul to all others. (Democritus, DK 72)

This blindness is voluntary in that it is in our power to learn moderation.

> For self-sufficiency in food, a little night never comes. (Democritus, DK 209)

Does this touch upon a Greek saying? It is usually not difficult to get enough.

> The animal needing something knows how much it needs, the man does not. (Democritus, DK 198)

The animals are taught moderation more by nature than man. Man needs upbringing and practice.

> The brave man is not only he who is stronger than the enemy, but he who is stronger than pleasures. Some men are masters of cities, but are enslaved to women. (Democritus, DK 214)

Since courage is the virtue most known and admired, Democritus here assimilates moderation in a way to courage. Every virtue seems to involve some strength of soul.

> If the body brought a suit against the soul, for all the pains it had endured throughout this life, and the badly suffered, and I were to be judge of the accusation, I would vote in condemnation of the soul, in that it had partly ruined the body by its neglect and dissolved it with drunkenness, and partly destroyed it and torn it in pieces with its love of pleasure – as if, when a tool or a vessel were in bad condition, I blamed the man who was using it carelessly. (Democritus, DK 159)

> Sleep in the daytime signifies disturbance of the body or distress of the soul or laziness, or lack of education (Democritus, DK 212)

Intemperance is bad for the body as well as for the soul.

> Fame and wealth without understanding are not safe possessions. (Democritus, DK 77)

After the virtues which concern our body in some way (either what endangers it or pleases it), courage and moderation, one should consider the virtues which concern exterior or outside goods such as money and honor. These are not good without a well disposed reason. Hence, as in the *Nicomachean Ethics*, we need to consider the virtues concerned with money and honor.

> The employment of money with understanding is useful towards being liberal and the common good, but without understanding, it is a common means. (Democritus, DK 282)

The reasonable use of money pertains to the virtue of liberality or generosity and also it pertains to the common good (and the virtue of munificence), but without understanding, it is a very ordinary means.

> Thrift and fasting are useful; so too is expenditure at the right time. But to know this belongs to a good man. (Democritus, DK 229)

Both the conserving of money and its expenditure belong to the man of virtue.

> To procure money is not without use, but if it comes from wrong-doing, nothing is worse. (Democritus, DK 78)

> Wealth derived from evil doing makes the disgrace more evident. (Democritus, DK 218)

> Evil gains bring loss of virtue. (Democritus, DK 220)

> The hope of evil gain is the beginning of damage. (Democritus, DK 221)

It also pertains to the virtues concerned with money that it be acquired as it should and not from any bad source.

> The generous man is not the one looking for a return, but the one choosing to do good. (Democritus, DK 96)

The truly liberal man is pleased more in giving as he should then in expecting a return.

> Little favours at the right time are greatest to those receiving. (Democritus, DK 94)

> When you do a favour, first examine the one receiving, lest being false, he give back evil for good. (Democritus, DK 93)

> Accept favours foreseeing that you will have to give back greater gifts for them. (Democritus, DK 92)

Many things must be observed in giving money to others. One must give to the good and at an opportune time. And in receiving favors, the liberal man will give back more than he has received.

> Luck supplies an extravagant table, but foresight a sufficient one. (Democritus, DK 210)

Foresight is not concerned with extravagance, but it does provide enough for one's circumstances.

> The things which the body needs are easily available to all without toil or hardship. But the things which require toil and hardship and distress life, are not desired by the body, but by the bad-disposition of the mind. (Democritus, DK 223)

The man with rectified desire for material goods does not need to labor excessively.

> One should realize that human life is weak [feeble] and brief and mixed with many cares and hardships, in order that one may care only for moderate possessions, and that hardship may be measured by necessities. (Democritus, DK 285)

> Living abroad one's life teaches self-sufficiency; for bread and bed are the sweetest cures for hunger and fatigue. (Democritus, DK 246)

One should have moderate desires for material goods. One way this can be learned is by living abroad.

> He is fortunate who is cheerful with moderate possessions, but unfortunate who is melancholy with great possessions. (Democritus, DK 286)

Content need not be proportional to what one has. The one who has less may be more contented than the one who has more.

> If your desires are not for much, little will seem much to you; for small desire makes poverty equivalent to wealth. (Democritus, DK. 284)

> The desire for wealth, unless limited by satisfaction, is far harder to bear than extreme poverty; for greater desires make greater needs [lacks]. (Democritus, DK 219)

> Poverty and wealth are names for lack and satiety; so that he who lacks is not wealthy, and he who does not lack is not poor. (Democritus, DK 283)

Poverty and wealth, insofar as they affect human beings, depend upon our desires and supposed needs.

> Those who yearn for what is absent, but neglect what is present being more profitable than what has gone, are without understanding. (Democritus, DK 202)

> The reasonable man is he who is not saddened by what he has not, but enjoys what he has. (Democritus, DK 231)

> The desire for more loses what one has, having become like the dog in Aesop. (Democritus, DK 224)

Men who always desire more are less satisfied with what they have. Such souls are in a way a torment to themselves.

> Misers have the fate of the bee; they work as if they were going to live forever. (Democritus, DK 227)

> The children of misers, if they are reared in ignorance, are like those dancers who leap between swords: if they miss, in their leap downwards, a single place where they must plant their feet, they are destroyed. But it is hard to alight upon the one spot, because only the space for the feet is left. So too with the children of misers: if they miss the paternal character of carefulness and thrift, they are apt to be destroyed. (Democritus, DK 228)

The miser, who has excessive desire for material goods, torments himself and endangers his own children's happiness.

> To bear poverty well belongs to a sensible man. (Democritus, DK 291)

But if the reasonable man should fall into poverty without his fault, he will bear this better than other men.

> It is greatness of soul to bear mildly offence. (Democritus, DK 46)

Greatness of soul is a virtue concerned with great honors or with that which is greatly honored. What is here said by Democritus seems contrary to Homer's representation of Achilles and Agamemnon in their anger as magnanimous men.

> It is hard to fight anger; but to control it belongs to a reasonable man. (Democritus, DK 236)

> Drive back well the anger continuing in thy breast, and take care not to disturb thy soul, and do not let all things come always to the tongue. (Democritus, DK 298a doubtful)

Another passion which must be moderated by reason is anger.

> Cast forth unmastered grief from your benumbed soul by reason. (Democritus, DK 290)

Here we are urged to free ourselves by reason from being enslaved to the passion of grief. Sadness can cause anger that Reason cannot do this if our ability to feel passions has not been somewhat disposed to hear and obey reason.

After the virtues concerned with exterior goods such as money and honor, one can consider the virtue concerned with exterior evils, like insults, which arouse anger.

> One should tell the truth, not speak at length. (Democritus, DK 44 or 225)

> The life without festival is a long road without an inn. (Democritus, DK 230)

After the virtue concerned with anger, Aristotle in the *Nicomachean Ethics* considers three virtues about what is pleasant in human acts and words or with truth in them. One of the virtues concerned with the pleasant is in laughable matters. This is necessary in human life: one must relax and pause on our journey at some time.

> Justice is to do what should be done; injustice is to fail to do what should be done, and to put it aside. (Democritus, DK 256)

Justice here seems to mean all virtue.

> The cheerful man, who is impelled toward works that are just and lawful, rejoices by day and by night, and is strong and free from care. But the man who neglects justice, and does not do what he ought, finds all such things disagreeable when he remembers any of them, and he is a afraid and torments himself. (Democritus, DK 174)

> The glory of justice is confidence of judgment and imperturbability, but the end of injustice is the fear of misfortune. (Democritus, DK 215)

Plato devotes the *Republic* to showing the different results for men from justice and injustice.

> The man completely enslaved to wealth can never be just. (Democritus, DK 50)

The man who desires wealth too much will take more than his share which is unjust.

> Bad men, when they escape, do not keep the oaths which they make in time of necessity. (Democritus, DK 239)

The keeping of oaths is a matter of justice.

> It is the work of foresight to guard against a threatened injustice, but it is the mark of insensibility not to avenge it when it has happened. (Democritus, DK 193)

After the moral virtues, we should consider in ethics the virtues of reason. Foresight is the virtue of reason that directs us in our actions

> Imperturbable [without amazement] wisdom is worth everything. (Democritus, DK 216)

The greatest virtue of reason is wisdom.

Friendship

> Life is not worthwhile for the one who has not even one good friend. (Democritus, DK 99)

Aristotle's second reason for considering friendship in the eighth book of the *Nicomachean Ethics* begins with a similar statement. Man is by nature a social animal. His greatest good, happiness, is something he wants not only for himself, but also for other men, especially for those close to him. We want to share a joke with others; and if we see something beautiful, we want others to see it with us.

> It is fitting, being men, not to laugh at the misfortunes of others, but to lament them. (Democritus, DK 107a)

> Those to whom their neighbours' misfortunes give pleasure do not understand that the things of fortune are common to all; and also they lack cause for their own joy. (Democritus, DK 293)

It is natural to love and therefore pity other men. For likeness is the cause of love and pity. Aristotle in the *Nicomachean Ethics*, Book Two, gives rejoicing in the misfortune of others as something that is always bad. But to rejoice at the misfortune of others is also to forget that we are subject to misfortune as well. Hence, in tragedy, the emotions moved are both pity and fear.

> All relatives are not friends, but those agreeing about the useful. (Democritus, DK 107)

All friendship seems to be based on some good that is common to the friends.

> The enmity of relatives is much worse than that of strangers. (Democritus, DK 90)

One reason why it is worse is that we are not on guard, or less on guard, against our relatives than strangers. We expect good from our relatives, but do not know what to expect from strangers.

> The man who loves nobody is, it seems to me, loved by no one. (Democritus, DK 103)

Nothing so invites love for another as the experience of the other's love for oneself. And this also would seem to pertain to friendship that there is mutual love. If love is not returned, there cannot be friendship.

> Many who seem to be friends are not so, and those who do not seem so, are. (Democritus, DK 97)

Many would rather appear to be our friends than be our friends. But are those friends in the full sense who do not know their mutual good will?

> In prosperity it is easy to find a friend, in adversity nothing is so difficult. (Democritus, DK 106)

> Many avoid their friends when they fall from wealth to poverty. (Democritus, DK 101)

Democritus here describes those who love themselves and not truly their "friend". They love another, not for the other's own sake, but insofar as the other is useful to them. Hence, the truth of the saying *A friend in need is a friend indeed.* And Boethius says that one of the advantages of misfortune over fortune is that it enables one to know who is one's real or true friend. Useful friends are not friends in the full sense.

> An enemy is not he who injures, but he who wishes to do so. (Democritus, DK 89)

Friendship, like virtue, is not only in the exterior act, but also in the interior desire. And perhaps more so in that the exterior act is not always in one's power.

> The friendship of one who understands is better than that of all who do not understand. (Democritus, DK 98)

One good friend is better than many bad friends. With fools as friends, one does not need enemies.

> Animals flock together with animals of the same kind, as doves with doves, and cranes with cranes, and similarly with the rest of the animals. So it is with inanimate things, as one can see it is with sifted seeds and with the pebbles on the beaches. In the former, through the circulation of the sieve, beans are separated and ranged with beans, barley-grains with barley, and wheat with wheat; in the latter, with the motion of the wave, oval pebbles are driven to the same place as oval, and round to round, as if the likeness in these things had a sort of power over them which had brought them together. (Democritus, DK 164)

> Like thinking makes friendship. (Democritus, DK 186)

Likeness *as such* is a cause of liking or loving and of friendship. Since *reason* more than anything else is man, among men *like thinking* especially is the likeness that causes friendship.

> Those loving to find fault are not well-fitted for friendship. (Democritus, DK 109)

> The man whose tested friends do not stay long with him is hard to turn. (Democritus, DK 100)

> An old man is pleasant if wily and his speech serious. (Democritus, DK 104)

Since living together is characteristic of friends, and it is hard to live together with someone who is unpleasant and fault-finding, whether due to temperament or old age, there are some who for these reasons are not well-fitted for friendship.

Friendship involves mutual good will. Flattery is not a sign of good will. Brutus (in *Julius Caesar*) distinguishes between a true friend and a flatterer.

> It is better to be praised by another than by oneself. (Democritus, DK 114)

One can be easily deceived about how good one is and often another can more clearly see the good or bad in us.

> Those who praise men without understanding do great harm. (Democritus, DK 113)

A true friend understands what is good and bad in us and encourages the one and discourages the other.

> If you do not understand the praise, believe that you are being flattered. (Democritus, DK 115)

This is a rule to be followed in winnowing deserved praise from flattery.

> Fear practises flattery, but it has no good will. (Democritus, DK 268)

We often flatter people rather than tell the truth out of fear of what will happen if we say what we really think. A true friend is not a flatterer. A true friend does

not praise where such praise is not deserved and especially where he sees a fault in his friend. Rather he would try to improve his friend where this is possible. When Democritus says it has no good will, he is clearly seeing such flattery as not a part of true friendship.

DOMESTIC FRAGMENTS

> Disease of the home and life comes about in the same way as that of the body. (Democritus, DK 288)

Disease of the body is a result of the lack of harmony of the parts or of their being disproportioned to each other. Likewise, the harmony and proportion of husband and wife and of parents and children preserves the health of the family.

> It is better for those without understanding to be ruled than to rule. (Democritus, DK 75)

The children need to be ruled, especially when young.

> Rule belongs by nature to the stronger [better]. (Democritus, DK 267)

The Greek word could be translated as stronger or better. These are not the same. But perhaps the closer a rule is by nature, the more these two are joined. If the better is stronger, the one who *should* rule is also *able* to rule. The family is closer to nature than the city. Hence, the parents are by nature stronger than the young children so that they can rule them as they should. So too the husband is stronger than the wife so that he is by nature the head of the family.

> It is hard to be ruled by one's inferior. (Democritus, DK 49)

> To be ruled by a woman is the ultimate outrage for a man. (Democritus, DK 111)

It is a great disorder in the family when the man is ruled by the woman. As Augustine says (*In Ioannem,* Tract. 2) *Quid enim peius est domo ubi femina habet imperium super virum?*

> A woman is far sharper than a man in bad counsel [folly}. (Democritus, DK 273)

A woman is more persuasive than a man. Hence, the danger of the defect in their thinking.

> A woman must not practise argument: this is dreadful. (Democritus, DK 110)

A woman should be the heart of the family. Practising argument disturbs her place or role.

> Speaking little is adornment for a woman. Simplicity of ornament is also beautiful. (Democritus, DK 274)

This is also the classical example of a woman's virtue in Sophocles (and Aristotle who quotes Sophocles) and in Shakespeare.

> I do not think that one should have children. I observe in the possession of children many and great risks and also many griefs, a harvest is rare, and even then thin and weak. (Democritus, DK 276)

> The rearing of children is perilous. One gains success full of anguish and care, failure means grief beyond all others. (Democritus, DK 275)

In these fragments, Democritus considers the reasons against having children. But since having children is the very end or purpose of marriage, it seems that one must take the risk.

> Whoever needs to have children should, it seems to me, make them from his friends. He will thus obtain a child such as he wishes, for he can select the kind he wants. And the one that seems to be fit will be most apt to follow according to his nature. And this differs so much as that here it is possible to take the child out of many who is according to one's mind; but if one begets a child from himself, the risks are many; for it is necessary to accept whoever is generated. (Democritus, DK 277)

If one still insists upon having children despite the warning in the previous fragment, Democritus proposes here that one adopt rather than generate them. He seems to be making the having of children more a work of reason than of nature. He is starting in this respect to resemble some of our contemporaries.

> For men, it is one of the necessities of life to have children, arising from nature and ancient institution. It is clear in the other animals too: they all have offspring by nature, not for the sake of any advantage. And when they are born, the parents work hard and bring up each as best they can and are very fearful for them while they are small; and if they suffer something, the parents are grieved. But for man it has now become an established custom that there should be also some enjoyment from the offspring. (Democritus, DK 278)

Democritus seems closer to the truth here when he recognizes the family as a work of nature and ancient institution rather than a work of reason.

One should not underestimate the difficulty of rearing children correctly. Nor should one be unprepared for the terrible things beyond our control that can happen to our children.

> The moderation of the father is the greatest instruction for the children. (Democritus, DK 208)

Since the children learn more by imitation even than by words and moderation is so important in life, this is excellent advice. What terrible example is given by fathers who do not moderate their sensual desires and anger.

> If children are allowed not to work, they will learn neither letters nor music nor gymnastic, nor what is especially virtue, to feel shame. For shame especially is apt to come from these. (Democritus, DK 179)

There are many reasons why children must be taught to work hard when young. Without a sense of shame, the child cannot become good.

> Idleness is the worst of all to teach youth; for this is what breeds those pleasures from which badness comes. (Democritus, DK 178)

Some of us can still remember hearing our teachers say that *An idle mind is the devil's workshop*.

> It is possible without spending much of one's own money to educate one's children, and to throw around their property and their persons a wall and a safeguard. (Democritus, DK 280)

> The excessive accumulation of wealth for one's children is an excuse for covetousness, which thus displays its own way. (Democritus, DK 222)

Many fathers exaggerate the amount of money necessary for good family life and even to educate their children. They mistake the role of material goods in enabling us to live well. This is due to not knowing what it is *to live well*

> One should, as far as possible, divide out one's property among one's children, at the same time watching over them to see that they do nothing ruinous when they have it in their hands. At the same time, they thus become much more thrifty over money, and more eager to acquire it and compete with one another. Payments made in a communal establishment do not irk so much as those in a private one, nor does the income please but much less. (Democritus, DK 279)

Nevertheless, children must be taught, as it is said, the value of money so as not to waste it.

> The man who is fortunate in a son-in-law finds a son; the man unfortunate, loses his daughter also. (Democritus, DK 272)

This is an important observation for men who have daughters to keep in mind.

> Use slaves as parts of the body: each to his own function. (Democritus, DK 270)

Slaves were a normal part of a Greek household. This is good advice and was observed by our prudent forefathers.

POLITICAL FRAGMENTS

> Learn the political art which is the greatest, and pursue its toils, from which great and brilliant things come to be for men. (Democritus, DK 157)

The political art is the greatest in that it aims at the common good of the city or nation. This is the greatest human good. But the political art or political foresight has its end, not to know, but to act and this is with toil. But where it leads one to act well, "great and brilliant things" can be achieved for the city or nation.

> One must hold that what concerns the city is the greatest matter among the rest; how it may be well run; neither pursuing disputes contrary to right, nor giving a power to oneself contrary to the common good. The well-run city is the greatest direction, and in this all things are contained; when this is saved, all is saved; when this is destroyed, all is destroyed. (Democritus, DK 252)

The city or nation contains all the goods necessary for living well. But the city or nation should be ruled for the sake of the common good, the good of the whole. If the city or nation is directed to the good of one part, it is unjust. Since the city or nation contains all the good things that are necessary to live well, in its safety or destruction all our goods are bound up.

> Communal distress is harder than that of individuals; for there remains no hope of aid. (Democritus, DK 287)

If one part or member of the city is in trouble, the other parts can come to its aid. But if the whole city is in trouble, all would seem to be lost for there is nothing outside of it to fall back on.

> The greatest deeds and wars between cities are achieved by means of oneness of mind: there is no other way. (Democritus, DK 250)

Oneness of mind in the citizens is something that the political art must especially aim at for nothing great in peace or war can be accomplished by a city without this.

> When the powerful undertake to give to those not having, and to help them, and show kindness to them, herein at last is pity, and not being alone, and becoming companions [friends], and aiding one another, and oneness of mind among citizens; and other goods things such as no man could recount. (Democritus, DK 255)

Those who have more must consider and help those who have less, using their power and goods as if they were entrusted to them not only for their own private good, but also for the good of the whole. When they are so disposed, one cannot begin to enumerate all the good things which come to the city.

> In a shared [common] fish, there are no bones. (Democritus, DK 151)

Perhaps this touches upon some Greek proverb about friendship among men when material goods are shared.

> All love of strife is without understanding; for in considering the harm of one's enemy, one does not see what is useful to oneself. (Democritus, DK 237)

> Civil war is bad to both parties; for there is like destruction both to the conquerors and the conquered. (Democritus, DK 249)

All love of strife or war is unreasonable for in harming another one does not see how one is harming oneself. But civil war is especially destructive of both parties.

> The laws would not prevent each man from living according to his own authority, if one individual did not harm another; for ill-will makes the beginning of strife. (Democritus, DK 245)

> The law wishes to benefit the life of men; and it is able to do so, when they themselves wish to undergo it well; for it shows to those persuaded to obey it, their own virtue. (Democritus, DK 248)

Law is not just to coerce the bad, but also to help those who are persuaded by it to become better men. This is, of course, much more true of something like the Rule of St. Benedict than of the law of the city.

> It is necessary to punish wrongdoers so far as possible, and not neglect it. To do such is just and good, but to not do so is unjust and bad. (Democritus, DK 261)

> Those who do what is deserving of exile or imprisonment or are worthy of some other punishment, must be condemned and not let off. Whoever contrary to the law acquits a man, judging according to profit or pleasure, does wrong, and this is bound to be on his heart [conscience]. (Democritus, DK 262)

The punishment of wrongdoers is a matter of justice and not to do so is unjust. It is not revenge or hatred of others.

> One must kill all those harming contrary to justice. The man who does this has the greater share of cheerfulness and justice and courage and shares a greater part of property in every ordered society. (Democritus, DK 258)

> With animals, the rule for killing them and not killing is thus: any that do wrong and wish to do so may be killed with impunity, and it conduces to well-being to do so rather than not. (Democritus, DK 257)

> Just as has been written regarding beasts and snakes which are hostile (*to man*), so it seems to me it is necessary to do with regard to human beings: one should, according to the laws of our fathers, kill an enemy of the city in every ordered society, in which a law does not forbid it. But there are prohibitions in every State: sacred customs and treaties and oaths. (Democritus, DK 259)

> The one killing a highway robber and plunderer shall be exempt from penalty, whether he does it by his own hand, or by urging, or by vote. (Democritus, DK 260)

The punishment of wrongdoers should include the death penalty for certain crimes. The comparison to animals that should be killed is perhaps not only a proportion or likeness. The killing of a human being can be justified only when that man has made himself less than a man by his crime.

> There is no way under the present constitution by which magistrates can be prevented from wrongdoing, even if they are altogether good. For it is not likely for anyone else than for oneself, that he will become the same in different circumstances. Whence It is necessary that such things be ordered so that the one doing no wrong, and convicting wrong-doers, shall not fall under the power of the latter; rather, something, a law or some other means, must defend the one doing what is just. (Democritus, DK 266)

Democritus could be speaking here of the age-old problem that those who administer the law may disobey it. Or he may have in mind that in enforcing the law, they may make mistakes. Those who enforce the law must be protected from wrongdoers.

> To good men, it is not advantageous that, neglecting their own affairs, they do other things; for their private affairs suffer. But if a man neglects public affairs, he becomes ill spoken of, even if he steals nothing and does no wrong. And if he is not negligent and does wrong, he is liable not only to be ill-spoken of but also to suffer something. To make mistakes is inevitable, but it is not easy for men to forgive. (Democritus, DK 253)

There are problems in not engaging in public affairs and in so doing.

> Men remember mistakes more than things done well. This is just; for as the one who returning deposit does not deserve praise, but the one not returning is ill-spoken of and suffers whereas those who do not do so deserve blame and punishment, so with the ruler: he was elected not to make mistakes but to do things well. (Democritus, DK 265)

Men are criticized more for their mistakes in office than they are praised for doing well. This is in some way reasonable.

> It is necessary to be on one's guard against the bad man, lest he seize his opportunity. (Democritus, DK 87)

> When the bad enter upon office, the more unworthy they are, the more they become careless, and are filled with folly and rashness. (Democritus, DK 254)

One must on his guard against the bad and especially when they gain office.

> He has the greatest share of justice and virtue who awards the greatest offices to the most deserving. (Democritus, DK 263)

Because of the above dangers, the worthy or correct distribution of offices is a great work.

> Rule belongs by nature to the stronger [better]. (Democritus, DK 267)

> It is hard to be ruled by an inferior. (Democritus, DK 49)

The Greek word here (kresswn), as has been said before in the domestic fragments, can be translated as stronger or better. The latter meaning seems more reasonable, but that there are those with whom Socrates discusses in the dialogues who seem to maintain this statement in the former sense.

> The man measuring himself against the stronger [better] ends in disgrace. (Democritus, DK 238)

There is much truth in this as can be seen in history.

> Poverty in democracy is as much to be preferred to so-called prosperity under an oligarchy of a few powerful families, as freedom to slavery. (Democritus, DK 251)

Democracy is better than oligarchy and especially better than a narrow oligarchy.

> Freedom of speech is characteristic of freedom; but the danger is in discerning the right occasion. (Democritus, DK 226)

We are still wrestling with the danger involved in freedom of speech and the abuse of it.

Duane H. Berquist