Unit III. Epistemology

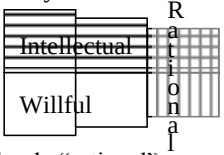
Chapter I. Introduction to Epistemology

1. Intellect in Itself

Epistemology (from Gk. *episteme*, see Glossary) is the study of how we know and come to know things. As human beings we have many ways to know things: We can know things in broad Sight, or in hidden Imagination, or by learning and being told about them, or by experience from actually *doing* them. We will study all these kinds of knowledge. However, as human beings, we are special and different from all other animals in that we possess a true, rational Intellect.[1] Consequently the main focus of this unit in Epistemology will be the study of how the human Intellect comes to know things.

Even though many people do not recognize it, Intellect is one of the most fundamental things in our world. Words permeate our world. The sound of a bird is a kind of word (though it lacks linguistic content), the sound of a thunder-clap is a kind of word; even physical things (such as plants, and animals, and humans) are in themselves 'words' (of a sort) since they come from a creator and 'bespeak' truths about their creator. Indeed, Intellect is so fundamental that it has a basis in God, the world's creator, who is sometimes Himself called "the Word." Thus it is self-evident that we live in a thoroughly rational / intellectual world.[2]

Proper Vocabulary Use:
- Mind vs. Intellect – Synonyms
- Intellect(ual) vs. Reason (rational) – These two terms are often incorrectly believed to be synonyms. However they do have a difference:



In this textbook, "rational" refers to the top layer of human nature (opposed to sensate and physical), whereas "intellectual" refers to the downward flow of Truth, which is opposed to Will.
* Note: Vertical is -->

Its Horizontal Dimension

What is Intellect and the speaking of words? Intellect is the procession of Act from Act, of a word from its speaker.[3] The speaker is in Act (by existing), and the speaker produces something that, by being predicated (or said), comes to be also in Act, proceeding from and then existing separately from the speaker. Thus once he/she has said something, it can never be taken back; it may

Proper Vocabulary Use:
"Intellect" comes from the Lat. verb *intellegere*, "to understand." This verb gives us two very similar forms: *intellectum* and *intellectus*. *Intellectum* (objective) means some *thing*—some idea—that is understood; *intellectus* (subjective) is one's own faculty of understanding. Thus one uses one's *intellectus* to understand an *intellectum*. Consequently "Intellect" can refer either to the faculty of understanding, or to the knowledge-content itself.

[1] Aquinas, *Summa*, I.79.8.ad3.
[2] Cf. Aristotle, *De Anima*, III:4 (429b25-28); cf. *Analytica Posteriora*, II:19 (100a17,b8ff).
[3] This is deducible from Aristotle, *De Anima*, III:4 (429b31-32) which says that mind is in act (rather than potency) in the moment in which it is thinking; and from III:7 (430a20, 431a1), which shows that the thing known, or rather the thing said (inasmuch as what is said is also necessarily known simultaneously) is identical with the mind at that moment, and therefore must also be in act (rather than potency). Cf. also III:7 (431a3-4).

Comment [A1]: Ask the students what sorts of truths they bespeak: [Ans: Truths about who their creator is (cf. Rom. 1:18).] In this way of looking at things, *everything* is a word.

Comment [A2]: Rom. 1:18.

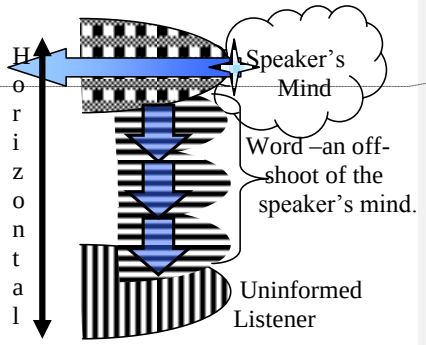
Comment [A3]: The reason we live in a rational/intellectual world is that the world itself is a word, a word spoken by God the Father to God the Son. By being 'spoken' in this way, the world has been created in God the Son, who Himself is known either as "the Eternal Word," or as "the Word" (note capitalization) in the divine Trinity. From this perspective of looking at things *everything* can be considered a word (or, in other words, nothing is empty and in vain).

Comment [A4]: You may desire to have the students recite the Nicene creed and find the sentence or phrase that best describes the event of Act proceeding from Act: [Ans: "Light from Light." The procession of God the Son, the Eternal Word (the 2nd "Light", forth from God the Father ("the first "Light") is a procession of "Light from Light," light here being a perfect example of act , rather than potency. Light is "act" because it goes in one direction, is instantaneous, and can never ever be taken back; unlike potency, which is circulating, on-going, and can be reversed and undone.]

Comment [A5]: Here we are talking about 1st Acts.

be qualified, contextualized, explained, revised, hidden, or modified, but in itself it has come to be as a new (f)act, and its substance can never be removed. As Act, it is a true and permanent representation of what the mind of the speaker briefly was, when his/her mind was also in Act and produced that word, at that point in time.

Diagram 3.1



A speaker's word comes from him as a form from his mind; it then *informs* the mind of the listener.

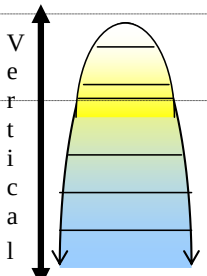
*Turn this diagram 90° to the left to make the "horizontal" appear as horizontal.

What sort of Act is this? Fundamentally, it is a form.[4] When another person hears this reported word, the word causes that person to enter into Act as well, in an either identical or similar way to the speaker's act. Thus for instance if a dog barks, the wave compressions in the air molecules model the vibrations of the dog's vocal cords. When the sound-wave arrives at the listener's ear, the listener's ear-drum is vibrated in an identical way, which is then translated into nerve impulse-waves heading to the brain. Throughout all of this, we see several distinct media (vocal-cord tissue, air, eardrum tissue, nerve-cell voltages), and these media are different kinds of matter. However, in addition to the matter, there is also present a definite and recognizable *form* that travels, without loss of data, from the source to the terminus. Along the way it may be translated, encoded, decompiled, scrambled, and recompiled as it passes through different kinds of matter, but in all of these it is the same formal knowledge and truth that is present. Thus, the knowledge travels horizontally (cf. Diagram 3.1) from speaker to hearer, even though it is itself something vertical (i.e. 'lower' than the mind of its speaker/formulator).

Thus a word's Form is the unique shape or pattern of the Act that it is in. As long as something possesses this form, it is in Act, and more precisely taking part in the Act of the one who spoke it. However when this form departs—usually because it dies out or gets muffled—from the receiver's awareness or possession, then the receiver is no longer in that Act, but merely back in potency, or in some other Act. This then is a key characteristic of knowledge: Knowledge is fundamentally Form (not Matter), and this formal knowledge is *in Act* as long as the receiver is aware of and actively considering it.

Its Vertical Dimension

Diagram 3.2



*Turn this diagram 90° to the right to make it match the diagram above it.

Besides its horizontal dimension, Intellect also has a vertical dimension based on the sublimity of its ideas (or *concepts*).[5] Some ideas are more sublime than others. Generally

[4] Aristotle, *De Anima*, III:4 (429a15-16). Cf. the proof for this in *De Anima* III:5 (430a6-19). Cf. also *Metaphysica* XII:9 (1075a3-4).
[5] Aristotle, *Analytica Posteriora*, I:20 (82a22-23).

Comment [A6]: A fact (from Lat. *factum*) is '*a made act*.' The "f" sound suggests making.

Comment [A7]: Connection to Literature: Ask the students to explain why the good fairies (Flora, Fauna, and Merryweather) were able to alter and change the wicked witch's (named Maleficient) curse at the beginning of the fairy tale Sleeping Beauty, but not able to take it back, and remove it.

Comment [A8]: Point out to the students that in Diagram 3.1, what is really "horizontal" is drawn as vertical, and what is really vertical is drawn as horizontal. Thus, in the diagram, the transmission of the complete word or message vocally to another person is a 'horizontal' movement (moving downward in the diagram since the diagram is 'on edge,' rotated 90 degrees clockwise.). However, as the word is still being formulated in the speaker's mind or expressed and spoken into lower matter (i.e. into lower sensate or physical realms), it is then growing only by a 'vertical' movement downward (toward the left in the diagram) so as to impact lower levels or degrees of Being.

Comment [A9]: Translations and encodings are just *modifications* of the form (as if the form has something put down on top of it), not removals of the form.

Comment [A10]: There can be many—indeed infinite—shapes or patterns of Acts. The word "the" has a different sound-pattern than the word "a." The word that is the Gettysburg Address has a different content (matter) and organization-of-ideas (vertical form) than the word that is the Declaration of Independence.

Comment [A11]: Many times a receiver will not be directly thinking about something, but will still 'pick it up' subconsciously, so that (s)he can then recall it again later, if necessary.

Comment [A12]: You can think of form as "the data itself" (as opposed to the whole program or machine or medium in which the data appears).

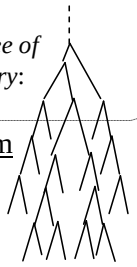
an idea is more sublime the simpler, more abstract, more universal, more applicable to many things, more unchanging, and more eternal it is.[6] Such ideas (e.g. Life, Being, Oneness, Justice, etc.) are unchanging and eternal, in comparison to lower ideas (e.g. fun, jokes, political positions, fashion fads, particular laws, industrial procedures, etc.) which are transitory and the expression of just a particular moment in time. Thus just as different elements naturally separate out (fire on top, then air, then water, then earth[7]), so the various truths naturally separate out with the sublimer ones existing higher than the lower ones. Consequently we draw them in this way (see Diagram 3.2).

However this is not all there is to the vertical dimension. We find in nature that higher ideas nearly always *include* lower ideas. Thus the idea of Justice includes distributive justice and commutative justice and rectifying justice, etc.; however Justice itself is included in the idea of Virtue, and the idea of Virtue includes hundreds of other virtues (since "Virtue" calls for different things—e.g. courage, or temperance, or modesty—in different situations). At the highest level, the idea of Being includes absolutely everything![8]

When we chart these relationships, we see that the patterns of inclusion form a kind of upside-down 'tree', known classically as the Tree of Porphyry.[9] Beginning simply at the top with the idea of "Being" (or "Substance") it repeatedly divides into many categories of Being, which themselves again split and divide into more and more sub-and sub-sub-categories of being and eventually arrive at all the various individual species of Being that we know of: cat, dog, olive tree, etc. We can diagram this in different ways, depending on how many concepts we include in our tree (see Diagram 3.3), but the fundamentals all hold the same, namely, that there is an objective ordering to the ideas in the universe, with the lower ideas coming from and included in the higher ideas.

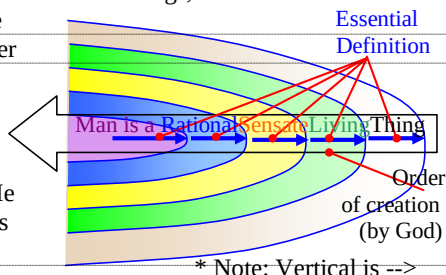
The Tree of Porphyry:

Diagram 3.3



We might ask ourselves why Being splits and divides like this. The answer is that this is how God Himself knows things, when He creates them. First God knows the simplest ideas, and then He knows complexer ideas as special kinds of those simple ideas: First He knows Being; and then He knows that Being which is substantial (substance); then He knows that Being which is Substantial and living (life); then He knows that Being which is substantial, and is living, and is sensate, etc.

Diagram 3.4



Man's essential definition is the formula that expresses his essence.[10]

Thus too when we fully define a thing, we have to reverse direction and proceed as high up into its source as we possibly can, until

Comment [A13]: Diagram 3.3 will look more like a tree, if you turn it upside down. Cf. also diagrams 1.14 and 1.19 (esp. the human tree).

Comment [A14]: God's knowledge is creative: When He *knows* you, that creates you. Now God knows you (from all eternity) by knowing your *name*. Thus the essential name for something would be the reverse of its essential definition: Thus the essential name for "man" would be "that-living-sensate-rational-one" (i.e. Diagram 3.4, in reverse). Here the "one"—the Hypostasis where the transcendental of Unity is reached—can be substituted by any real name (e.g. "Socrates" or "Mark."). However, since the rest of the essence can usually be taken for granted, we often summarize the whole string with just the last determination "Mark," and thus names are best visualized at the bottom of an essence (cf. Diagram 1.11); however if there should ever be any ambiguity about what we mean by a certain name, we can always have recourse to enumerating the full string of characteristics. After all, passing downward through the Tree of Porphyry, and designating one thing, as opposed to another, is essentially what we are doing when we name (cf. Diagram 3.20).

Comment [A15]: By "then," we mean next in logical order, not next in the order of time. After all, God, who is eternal, knows everything instantaneously, at once.

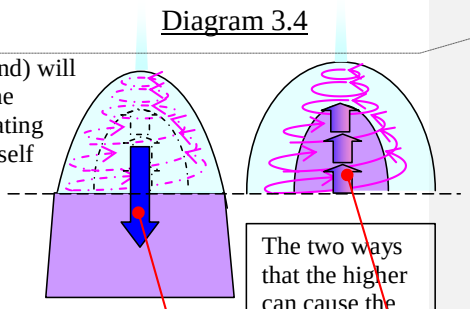
Comment [A16]: We can debate the finer points of precisely what ordering to pick. The ordering of characteristics chosen here is one that seems to follow the course of evolution. However, it is entirely possible that since God may have created, planned, and foreknown angels and man long before the rest of the world (cf. Rom. 11:2, but also Acts 15:18), that "rational" should come before "sensate."

[6] Aristotle, *Metaphysica*, I:2 (982a21-b7); II:1 (993b26-30); *Analytica Posteriora*, I:2 (72a1-5).
[7] This is at the base of the classical Ptolemaic description of the universe.
[8] Aristotle, *Metaphysica*, III:3 (998b20-21).
[9] Robert Audi, ed., "tree of Porphyry," *The Cambridge Dictionary of Philosophy* (Cambridge University Press, Cambridge: 1995), 810.
[10] Aristotle, *Analytica Posteriora*, II:10 (93b39).

we eventually arrive at the word "thing."[11]

Of course sometimes a higher idea (or mind) will generate a lower idea that—though included in the higher idea at first (as when the person is formulating it in his/her mind)—yet soon comes to exist by itself and not be included within the higher. For instance, when an architect produces a set of plans, he eventually forgets about them, but the plans continue to exist in themselves—e.g. in a filing cabinet somewhere, or even in the physical structure that he leaves behind. The same thing happens when someone speaks: The word he/she produces exits from his/her mind and exists by itself in the world. Thus there is a second way that the lower can come from the higher: By generation or 'speaking forth.'

Diagram 3.4



The two ways that the higher can cause the lower are when a mind conceives another idea (as part of itself), or when it then generates it and speaks it forth (as separate from itself).

Diagram 3.5

Questions:

1. The fact that a word is an Act from an Act enables it to be what quality? Ans: True (A true reflection of what its speaker's mind was at the moment that he spoke it).
2. If the speaker made a mistake, or even intentionally lied, was the word still 'true' of his mind? Ans: Yes! It was still true of the fact that the speaker was at that point in time either making a mistake or lying.
3. Is the horizontal aspect something metaphysical or spatial? Ans: Spatial.
4. Is the vertical aspect metaphysical or spatial? Ans: Metaphysical.
5. Which dimension is the dimension of communication and networking? Ans: Horizontal (A network is like a horizontal 'web.')
6. Which dimension is the dimension of programming, categorizing, and ordering? Ans: Vertical. (A computer program is like a hierarchy of commands in which some take precedence over others.)
7. What are the two ways that the lower can come to exist from the higher? Ans: By generation/begetting/speaking, and conceiving.
8. Analyze: What differences can you note between the generation of words and the conception of ideas? Use Diagram 3.5 in your answer. Ans: Generation occurs as Act from Act; conception as Potency within Potency. Generation is transient, downward (the begotten is lower than the begetter), and all at once—that is, the offspring's Act is already complete from the first moment that it exits the begetter. Conception however occurs immanently, upwardly, and gradually, as the offspring's Act is constructed 'from the ground up,' with lower elements built before higher elements can be built, all the while supplying and nourishing the Act with circulating potency around it. Thus generation is vertical

[11] On this manner of defining, which Aristotle called "definition by division," see *Analytica Posteriora*, II:5 (esp. 91b35-a5), cf. II:13 (96b25-a6).

Comment [A17]: "Thing" is the essence (essence) of Being (existence).

Comment [A18]: On the left half of Diagram 3.5, demonstrate to the students how the begetter's matter *ends* [draw a horizontal circle around the line separating blue from purple] and then the offspring's matter then begins *separately* from the begetter's matter [draw another horizontal circle around the baseline at the bottom of the purple]. Contrast this with the right half of Diagram 3.5, in which the conceiver's matter [Draw a horizontal circle around the base of the blue] continues to include and offspring's matter [Draw a smaller horizontal circle just around the base of the purple, *inside* of the blue's circle].

This diagram may have something to do with the differences by which men and women tend to think. Men have a slightly greater tendency to speak and spontaneously throw their ideas out into the public arena (sometimes without forethought), whereas women tend to work-over and digest their ideas more, before they speak them. This difference, however, probably has more to do with differences in men's and women's sensate levels, than with differences in their rational levels.

Comment [A19]: i.e. from the begetter's form.

Comment [A20]: i.e. from the conceiver's matter.

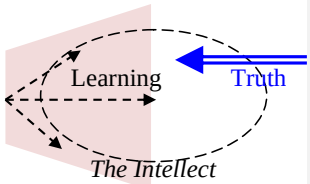
and formal, whereas conception has an added horizontal component that circulates, supplying material and energy.

9. Do you note any similarities between the causing of ideas and the reproduction of living organisms? What is the unique relationship between these two realms in this respect (i.e. mere coincidence / symbolism / indirect causality / direct causality)? Ans: The two ways of reproducing (male/female) match the two ways of generating ideas. Indeed, it is eminently fitting, and thus likely that that the two ways of creating ideas directly *caused* (either by God's choice or somehow in the mysterious process of the evolutionary unfolding of life) the two ways of reproducing living organisms.
10. Surmise: It has often been said that men and women think differently. What difference(s) would you note (beginning with that shown in Diagram 3.5)? Ans: Women tend to formulate their ideas immanently, within themselves; men tend to formulate their ideas by speaking them forth, and then seeing how they sound.

2. The Intellectual Realm

The Intellect is composed of two main elements: Learning (to be replaced by Understanding) and Truth. These two elements form as-it-were a 'box' or 'space' within which knowledge (Truth) can exist.[12] When Truth is learned and then internal to Learning (existing in the learner's mind) it is then *inside of* his/her Intellect. This Truth is then known as an Act *inside of* the Act of the speaker's mind. However, when Truth is purely outside of someone's Intellect then it is still able to be accessed and learned by the Intellect.[13] In this situation it is itself in Act (since it is an unalterable fact), but it is not yet known and so it is only *potentially* in the learner's mind.[14]

Diagram 3.6



* Note: Vertical is -->

As stated earlier, Truth is the true correspondence or belonging of something lower—an image or word—to something higher which spoke it, and of which it is a reflection. The higher and lower forms might be a speaker and his sentence, or a subject and its predicate, or a man and his offspring. All of these are forms of Truth, because what the lower says/is can (and must) truly reflect the higher.[15] When the speaker speaks this thing, he/she produces it as a *word*, which is an extension or offshoot of part of his Form (i.e. as a product of his own formal cause, be it a product of his mind or a product of his body), so that it stands by itself, in its own individual aspect, as separate from its

[12] Aristotle, *De Anima*, III:4 (429a15-16, 28-29; 429a32-430a2).
[13] Cf. Aristotle, *Analytica Posteriora*, I:1 (71a26-30).
[14] This is the second of the two types of potency mentioned in Aristotle, *De Anima*, III:4 (429b5-9).
[15] Cf. Aristotle, *De Anima*, II:8 (420b33-34).

Comment [A21]: This is why woman is a "help" to man (Gen. 2.18): Whereas man concerns himself only with the vertical component of begetting the child, the woman provides both the vertical component (in that she supplies her own DNA, as well) and the further operation of horizontally furnishing material and potency to the offspring (i.e. nourishment, and waste removal), thus allowing the man to go and concern himself with other things (e.g. work, campaigning, defense, hunting, etc.).

Comment [A22]: The left half of Diagram 3.5 is unique male, and the right half is uniquely female.

Comment [A23]: Alternatively, it could just be the mere fact that the two ways of production (inside or outside the creature) are the only two ways possible (no matter which realm you're in), and so it would be a mere coincidence that the physical realm mirrors the spiritual in this respect. However, even if this is the case, it is still true, that the man—because of his biological role—still tends to take the lead in the production and articulation of ideas within the family. God seems to honor this as best for each of the sexes, as shown by the fact that men are ordained to preach, but women aren't. Thus it is the author's opinion that there is at least a symbolism or 'fitting-ness' of the lower for the higher, or even an indirect causality, whereby the lower level is meant to facilitate the higher (i.e. in accord with the principle that "grace builds upon nature").

Comment [A24]: Bl. Anne Catherine Emmerich writes that reproduction in the garden of Eden would've been not by physical intercourse, but by *the spoken word* (Anne Catherine Emmerich, *Life of Christ and Biblical Revelations*, vol. 1, 8-9). Thus there is a way in which the physical realm of creation reflects the spiritual realm of ideas/minds etc.

Comment [A25]: For instance, St. Edith Stein, as a philosopher, explored extensively the different ways that men and women think, and drew from this an idea of the slightly different qualities within men's and women's souls, as well as their personalities.

Comment [A26]: Thus 'begetting' is also a kind of 'speaking' of a word. When we say "God from God, Light from Light, true God from True God" (cf. Comment on "Act from Act" at the start of the previous section's paragraph on "The Horizontal Dimension"), we follow it with the statement "begotten not made." So the above description of Act coming from Act, was—at least in this case—also an act of *begetting*.

Comment [A27]: Cf. Diagram 3.1. This word is a true separation or offshoot of his form because it always reflects what the state of his mind was when he spoke/generated it.

Because it is a separation of form from form (rather than a separation of matter from matter), its speaking does not decrease or remove part of the speaker's form. After all, only matter has quantity, and so only matter can suffer loss. It is just as-it-were a 'copy' or 'replication' of his form's quality, but not a lost part.

cause.[16] We see then that words are usually less than the one who produces them, and in no way detract or decrease the speaker's own form.

Error can be characterized as a sentence in which the predicate doesn't truly apply or belong to the subject (as if I should say "cars are living").[17] Therefore Truth is when the predicate does correctly correspond, belong, or 'be suitable to' the subject, whereas Error is when what is said somehow does not correspond or belong to the subject. Therefore Truth and Error are properties of predications; henceforth we shall draw them as moving in the same direction as the direction of predication (here, right to left). *Note Vertical is -->

Error is a deviation, disconnect, or non-correspondence in the truth of what is said.

Learning is the reception and imbibing of such truth.[18] In Learning we 'imbibe' both or all of these spoken forms all at once, and comprehend them as well as their connection(s) in a single act of recognition.

One special kind of Learning—indeed the fundamental kind of all Learning—is Believing. When we believe something, before we imbibe it, we first (or at least simultaneously) speak a word from ourselves—a word of assent—over top of it, pre-confirming its truth in our mind.[19] Then when we imbibe it, it is already 'solid' and 'sure' in our mind. This could seem a little presumptive, unfounded, and/or risky. However, even believing can be reasonable when we consider the criteria, or basis, for believing. What are the criteria for believing? To believe, you must trust that the one revealing to you is *knowledgeable* (about the matter), and *trustworthy* (in his/her speaking, that he/she would only speak to you words that are true).[20] In believing then, because you trust your teacher, his/her own background understanding (gray in diagram) substitutes for your own lack of understanding, and so you simply accept the truths in the intuitive order in which they are presented to you. Thus you grow in knowledge and arrive at conclusions at a very fast rate.

In believing, you accept truth upon truth, rather than needing to fully justify and support each one along the way.

Diagram 3.7

Once something has been learned, it then exists as a structure (gray area) in

Comment [A28]: When God speaks His Word, however, that Word is fully equal in substance, dignity, and divinity to himself (cf. the enumeration of equalities in the Athanasian Creed, a.k.a. the "Quicumque Creed.") .

Comment [A29]: It is fundamental because we cannot learn anything unless we—at least contingently—believe it. Even when someone is telling us a bald-faced lie, we still 'believe' the sound of their voice, the significations of their words, and that the fact that they're saying what they're saying. We just don't believe that the heart of what they're saying corresponds to the real, true reality, which they are representing it as correspond to, but only instead to a hypothetical or false reality, concocted within their own mind. Thus we believe the circumstances, but not the substance.

Comment [A30]: We will study assent/consent more in Section 4.5.2.

Comment [A31]: In the diagram above, ask the students how you might visualize the revealer's knowledgableness and trustworthiness. [Ans: His knowledgability is about 'where the truths are going', and so that can be visualized as an upward arrow above the stack of bricks leading to some goal. His trustworthiness, is trustworthiness that he wouldn't lay a brick which would cause the whole structure to crash down, and so that can be visualized as either a scaffold on either side holding the bricks up, or as the quality itself of the bricks along the way, or as a kind of promise that this stack of bricks will lean against and be buttressed up and solidly supported by other stacks of bricks (and the holes can be filled in later).]

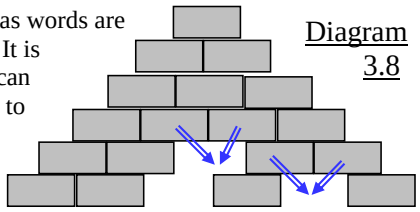
Comment [A32]: Notice how the inverted column of white bricks arives at the top level with much less masonry than if it were including all the gray ones, too.

Comment [A33]: We call it a "structure" in which the higher truths are resting upon lower truths because often when higher truths are not certain but only hypothetical, a higher truth will be supported by nothing other than the few lower instances in which we have tangible evidence of it. For instance, we might theorize a major fold deep within the North-American plate, based on seeing similar rock outcroppings on either side of the fold. If greenstone is found 50 miles from the fold, on either side, and coal is found 30 miles from the fold on either side, etc., then the higher theory that the fold exists (i.e. the top brick), is supported by the facts of each of the lower bricks (i.e. that greenstone straddles, that coal straddles, etc.).

[16] This is inferable from Aristotle, *De Anima*, III:7 (431a1-4). Aristotle says that potential knowledge is prior in time to its object (the thing known), but actual knowledge is not. If actual knowledge is not prior in time to the thing known, then the only reason can be because somewhere someone (if nobody else, at least God) is already knowing the things that you are going to learn. Actual knowledge is not prior in time because "all things come into being [into Act], arise from what actually is [in Act]." Thus the Act of the spoken and then known word comes directly as a carbon-copy from the Act of the mind that produced it. Cf. III:5 (430a20-25).
[17] Aristotle, *De Interpretatione*, 14 (23b14); *De Anima*, III:3 (427b4); III:6 (430a34-b2).
[18] Aristotle, *De Anima*, III:4 (429a13-17).
[19] This gives conviction. Aristotle, *De Anima*, III:3 (22-23).
[20] For this, I am grateful to my Doctrine Professor, Mr. Raymond O'Herron, Doctrine 101 class notes,

the mind.[21] At the point it becomes not just Act (as words are Act from Act), but also part Potency (or Power). It is potent because at any moment, any learned truth can either indicate or (if it was already learned) recall to mind truths that are lower than it, that is, truths that *follow logically* from it.[22] The word for being able to figure out the lower from the higher is to <u>infer</u>. Thus if you are a mechanic who studied only on domestic cars, then you would still probably be able to figure out how a particular foreign car's engine functions, even if you had never seen it before. Why? Because in knowing the higher, more general truths about engine design, you could be able to infer how a particular new example functions. Thus higher truths can re-generate those lower truths that logically follow from them.

<u>Diagram 3.8</u>



A person who knows higher truths can 'figure out' unknown or forgotten lower truths. Here, blue arrows show what logically follows from what.

<u>Questions:</u>

1. How are truths produced? Ans: By speaking (a word) that correctly corresponds to some higher reality.
2. What is Truth packaged in, and/or how does it arrive at the hearer? Ans: In/as a *word* (or message).
3. What is a word? Ans: It is a separation or extension or offshoot of part of one's own form out from oneself.
4. What are the two things necessary for Belief? Ans: One must believe that the revealer is (1) knowledgable and (2) trustworthy. The first is in regard to what is higher (i.e. where we're going, or what we're arguing to); and the second is in regard to what is lower (i.e. the reliability of what has already been said, both in itself as true, and as relevantly supporting higher conclusions).
5. Circle one: The (higher/lower) follows from the (higher/lower), and so we can infer the (higher/lower) from the (higher/lower). In Diagram 3.7 above, drawn an arrow showing this direction of logical flow. Ans: The lower follows from the higher; and so we can infer the lower from the higher. The arrow drawn should point downward, as shown in Diagram 3.8
6. In diagrams 3.7 and 3.8, what does a single brick represent? Ans: Some particular fact, statement, or principle of knowledge.
7. Discuss: To learn a science well, do you need to know and have memorized everything about it? Ans: It helps to have learned and seen everything at least once. However, after that initial learning, you don't need to perfectly know everything about it. So long as you remember just the higher, more important truths. From these you can later recall and 're-figure-out for yourself' all the rest of the science. Having a good understanding of the general nature and structure of a science is

[21] Aristotle, *Analytica Posteriora*, II:17 (99a22-23); I:12 (78a13-16).
[22] Aristotle, *De Anima*, III:4 (429b5-7), III:8 (431b24-27).

much more important than knowing every single fact.

8. Looking forward: Read Section 4.3.1 on the two kinds of Goodness. Connect the two requirements of belief here to the two kinds of Goodness there. How are they related? If necessary, diagram your answer. Ans: Knowledgability is a kind of *Proportio*; Trustworthiness is a kind of *Integritas*. The former two are external qualities of the situation—of oneself relative to something else (ad extra); the latter two are internal qualities within oneself (ad intra)
9. Further Study: Research the Correspondence Theory of Truth as well as another theory of truth. Write a paragraph listing and assessing the relative merits and/or weaknesses of these theories.

Comment [A34]: Examples of other theories of Truth would be the Coherence Theory of Truth, the Deflationary Theory of Truth, and the Identity Theory of Truth.

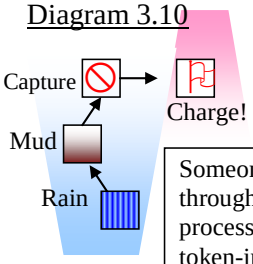
3. The Entering of Intellect into Lower Realms

When we humans visualize, we manipulate an image in our Imagination.[23] For humans (and animals too, though they don't realize it) these images contain intellectual values implicit within them.[24] Thus I may have a certain amount of fencing and be manipulating the possible dimensions of a field in my mind. I can go from a long, thin field to a more-and-more square field. At a certain stage the dimensions become such that the fact arises that the field's area is suddenly 'big enough' to plant all my seeds in. The fact of 'big-enough-ness' doesn't really 'arise' from within, so much as *flow into* the new, visualized situation. Animals would not be aware that it is so 'flowing into,' in this way, but humans are aware. Why are humans aware of this? Because when they feel it, they can *say* it, and then a simple check of the mind will either prove it true or false.

Diagram 3.9

Comment [A35]: Using Diagram 3.9, ask the students, "Where does the new form come from?" [Ans: Everything in Diagram 3.9 is horizontal, having to do with matter and quantity, so it can't come from anywhere within Diagram 3.9. Rather, it comes from some higher dimension outside of this picture, and in the order of Being.] Perhaps have the students draw a blue cascade—a flow of Being—coming from above and entering into only the pink area. They might even want to label horizontal and vertical axes to make it absolutely clear that the idea of the Being of 'big-enough-ness' comes from somewhere else, somewhere outside.

Diagram 3.10



Someone might go through a reasoning process using single token-images.

Why does the mere altering of an accident (e.g. dimensional size) affect something as great as the presence or absence of an entire intellectual concept (i.e. 'big-enough-ness')? The answer goes back to the fact that the word by which things are created is at one with the word(s) by which we know them. Thus by altering the thing's status as created (manipulating the field's dimensions), you simultaneously alter its status as known. At some point the matter becomes disposed to a new form, and that new form subtly, instantaneously, and automatically enters/infuses into the situation.

Comment [A36]: Size is a kind of quantity, which is one of the nine categories of accidents (recall Section 1.5.5).

Comment [A37]: In the diagram, this new form is represented in Diagram 3.9 by pinkness.

Comment [A38]: It might seem that first a thing would have to be created, before you could know it. After all, this is indeed how our eyes work: You cannot see something unless it first exists. However, this is not the case when it comes to knowledge. Whereas sight *follows* existence in the orders of time and causality, knowledge *precedes* (or at least simultaneously accompanies) existence: God creates things by knowing them; we create ideas by knowing them. Since knowledge precedes (or accompanies) existence, the moment that a new situation is created and 'takes hold,' we already know it. Indeed, right at the moment that the last step was about to take hold, we had probably already imagined what that last step would be and therefore pre-created it in our own mind. This happens in a moment of realization, a moment of epiphany (an "Aha!"-moment), when its new status of existence arises as an epiphenomenon over top of the accidental circumstances and parts from which it was made.

Human Reason can only think with the assistance of visual or audible stimuli (phantasms), and this is because the human soul has been joined to a body;[25] however, it isn't enslaved to images. For instance, reason can enter into a single image without having to see the whole filmstrip. Why? Because Reason recognizes a concept in even just a split-second image, or in a rough, look-alike representation, and doesn't need to

Comment [A39]: These are as-it-were the matter with which our mind works, and from which our ideas are created, as form.

[23] Cf. Aristotle, *De Anima*, III:3 (427b19, 429a1-2).
[24] Aristotle, *De Anima*, III:8 (432a3-6).
[25] Aristotle, *De Anima*, III:7 (431a16); III:8 (432a7,14).

fully experience it in order to recall the entire concept. This shows that Reason may perform acts of ordering of single independent pictures, and doesn't have to consider only what the eyes/Imagination are in the process of viewing.

In short, Reason really operates on its own entirely separate level, and *precedes* (in the order of causality) any activity of the nervous system that might accompany it.[26] We may briefly see things that we don't yet understand (e.g. seeing only the foot of the elephant), or confront events that take us by surprise, but we cannot deny that each of these already pre-possesses some intellectual character (put into it by its maker/inventor/doer), and it is only a matter of time until we *re*-create it for ourselves (in our own mind), and then put ourselves in the position of its maker, controller, and user. Once we do this we will then not just see-it but understand it as that which it is, and this understanding will be experienced as simultaneous with (though really preceding) its imagery.

Overlapping

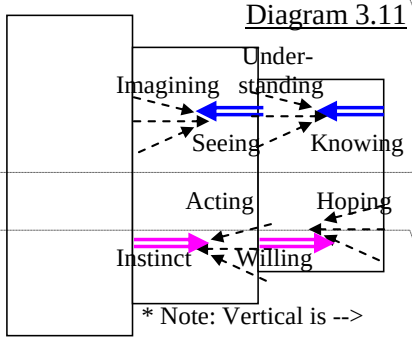
Once reason does enter into something, it then overlaps with it.[27] We heard at the beginning of Unit II that the three levels of human nature overlap with one another, and we shall now study this in more detail.

By means of overlapping, rationality can exist inside of sensate imagery, and also in physical objects. Thus when you experience a sensate image or perform a sensate action you know or intend some rational value. Indeed for every sensate act, there is an analogous rational act that is present in it. For instance, the presence of pigment molecules that reflect light between 520-560nm (i.e. green light) contains within it the concept 'greenness.' The two are identical in location (in the diagram) and nature (direction of growth). 520-560 nm light occurs in the realm of Sight, and "greenness" occurs in the realm of Knowledge, and when these two overlap (cf. Diagram 3.11) it is extremely difficult to tell the one from the other, since they're both experienced at once. Likewise, one doesn't just perform the action of moving one's hand toward another shoulder; no, inside of that movement there is the idea and character of *punching*. Indeed rational acts often occur as a finer dimension (or infinite singularity) within[28] their sensate and physical analogs.

In particular the way the various sensate faculties match up with the various rational faculties follows the following chart:

Sensate analog	Rational analog
To Look / See (5 senses)	To Know
To Imagine	To Learn/Understand
To Instinctively Respond	To Will
To Act	To Hope

Diagram 3.11



[26] Ibid.

[27] This is stated explicitly in Thomas of Erfurt, *De Modis Significandi*, Chs. 3-4. This fact may however be difficult to be explicitly found in Aristotle's corpus, but perhaps can be inductively indicated by exhaustive enumeration of instances where the sensate overlaps or parallels the rational: Aristotle, *De Interpretatione*, 1 (16a3); 9 (19a33); 14 (23a31); *De Anima*, III:8 (432a14); *Analytica Posteriora*, I:18 (81a38).

[28] Note the use of "within" in Aristotle, *Analytica Posteriora*, II:19 (100a7).

Comment [A40]: In the order of causality.

Comment [A41]: This is the same thing as saying that Reason/the rational content is present inside of the Sensate (cf. second footnote at the head of this section).

Comment [A42]: For instance, once you build a building, the idea of that building stays in the arrangement of the physical brick and mortar, even if nobody is at this moment looking at it. If a tree falls in the forest and nobody hears, does it still fall? [Ans: Yes, because God, who is infinite, knows all the rational ideas that He or we put into things, and so God and his angels still recognize it as that which it is, even if none of us have any awareness of it.]

Comment [A43]: The sensate act is here becoming in time; the rational act is as-it-were a thing that remains simply (not becoming, but just being). See the two meanings of Act in the Glossary.

Comment [A44]: Using Diagram 3.11, demonstrate to the students how the top layer (rightmost) slides leftward over the middle layer, causing the two blue arrows to overlap. Ask the students: What other things overlap? [Ans: Imagining and Understanding overlap; Instinct and Willing overlap; and Acting and Hoping overlap.]

Comment [A45]: Recall Diagram 2.21.

Comment [A46]: If the students want to know why the sensate faculties shown here are located in different positions (i.e. catty-cornered) from where they were shown in Diagram 2.14, tell them that the full answer will become clear in Unit V, but that the positions shown here are the faculties' *natural positions* as experienced by animals who do not have any higher rational 'control' over their senses. The positions shown in Diagram 2.14 were how the faculties were experienced when being 'forcefully used' by the rational layer.

Comment [A47]: The dotted lines representing Imagination in Diagram 3.11 represent imagery as-it-were building itself up, as it comes from the objects themselves located down in the physical level.

Thus we will see that Knowledge is analogous to Sight, Learning/Understanding is analogous to Imagination, Will is analogous to Instinct, and Hope is analogous to Action. When a human *consciously* performs one of the sensate actions, the rational analog overlaps with it and is necessarily present within it. In this unit and the next unit, we will learn much more about these four rational analogs.

Comment [A48]: Thus when you correctly imagine something you, by that very act, understand it (in a way). When you Act you, by that very act, reveal what your hope is which that act is accomplishing. When you see you, through that very act, simultaneous know what it is you are seeing. And your Instinct, by its very tendency, also expresses the Will of your body (to survive) or spirit.

Comment [A49]: Emphasize to the students that when you see a rational faculty, if you are having trouble understanding what is going on, it often helps to imagine its sensate analog in its place, instead.

Questions:

1. Does Reason control the eyes, or do eyes control the Reason? Ans: Reason controls the eyes.
2. Correct the following statement: "In order to know something, first it must be created." Ans: By knowing something, you thereby create / re-create it in your own mind.
3. Is Reason causative of, or consequent upon physical situations? Ans: Reason is Causative (at least, *someone's* Reason, though not necessarily mine). Thus it is prior in time (since you must plan before you act) and causality (since nothing physical happens except what is also rational).
4. Describe: What is the unique manner in which Reason enters into the lower realms? Ans: It enters into particular situations or arrangements of objects that are currently conforming themselves to that idea/concept. For instance, the matter of this pencil is currently conforming itself to the idea of a pencil (graphite at the bottom, rubber at the top, thin shaft in between), doing what a pencil does, and so even if someone should say that it is a stick, I have a better basis for knowing it as a pencil.
5. Pick two of the pairs of analogs from Diagram 3.11, and for each explain how the lower (sensate) is like the higher (rational). Ans: Sight is like knowledge, because when you see something, your sight passes through something clear and transmitting light (usually air) to something opaque; likewise, in knowledge you're mind passes through something clear and combining (a form) to something not combining (a distinct term for it). Imagination is like Understanding, because when you understand you have a framework connecting lots of facts; likewise, when you imagine you have a progression or 'filmstrip' of images that passes from one image to another. Instinct is like willing because they are both operative, and when you instinctively respond or react, you always do it directly in relation to some sensate and attractive good; likewise in willing, you always will directly that some good and rationally-attractive goal be accomplished. Acting is like hoping because when you act, you see what you are doing here, and you get pulled along by your focus on how you imagine or foresee yourself to continue carrying out the action there in front of you; in hoping, you know the current situation here and now, and you get pulled away from willing and giving your heart to seeking other good things because of your understanding of just how it has

to happen for the best outcome to occur. Thus in hoping you focus and concentrate on your ultimate goal just as you focused on your unfinished action, when acting.

6. Pick two of the pairs of analogs from Diagram 3.11, and for each explain the difference between just the sensate one occurring, and how it happens when the rational one enters into and combines with the sensate one. Ans: When Knowledge enters into Sight, you don't just look but look consciously. When Understanding enters into Imagination, one doesn't just imagine random images in a random order, but imagines things in a logical order traveling up and along the frameworks of what one understands. When Will enters into Instinct, one trains oneself not just to quickly react in order to survive, but to quickly perform other rationally-beneficial tasks. When Hope enters into Action, one acts not spontaneously and passionately (with single-minded tunnel-vision), but controlledly and cognizantly because one is aware of the greater situation and other surrounding concerns (e.g. what needs to be done next or simultaneously, and how to cooperate or make a smooth transition to win the larger battle).

Comment [A50]: For instance, one may pass from imagining a duck to fuzzily imagining just any generic animal (not concerned for which one).

Comment [A51]: For instance, one may pass from imagining a duck to imagining a goose.

Comment [A52]: This is why humans can order one act (and goal) to another, whereas animals can only focus on one action-to-be-performed at a time.

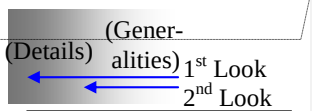
Chapter II. Coming to Know from Sense-data

The overlapping of Reason into the sensate and physical realms has an important consequence for human beings, namely, that *all rational knowledge comes to humans through the senses*. We will now consider how this rational knowledge arises within us, and to do this, we will first study abstraction.

1. Abstraction:

Abstraction means in Latin "to hold back." Abstraction is a method by which a person can travel backwards to the source of what has been seen.

Diagram 3.12



Abstraction involves two 'takes' or 'looks': A 1st take—which is *erased*—and then a 2nd take (more general)

Abstraction is an activity of the brain and optic nerves and/or Intellect (blue in diagram), not the heart. When you abstract, you wipe away or erase the image that you had in front of your eyes—whether it had been put there by physical Sight or by Imagination—and you replace it by a newly imagined one that fills the same general scope and shape, but has fewer determinations (i.e. less detail). In this way you might abstract, for example, from a seen image to just its bare, essential, geometrical outline.[29]

Comment [A53]: Point to Diagram 3.13 below and ask the students: "What direction does Intellect normally flow?" [Ans: Left]. Then tell them that we are going to discover a way in which it can flow 'in reverse' and 'upstream,' i.e., *toward the right*.

Comment [A54]: Thus abstraction would be a function primarily of the faculty of Knowledge and Sight, and since Sight shines through Imagination, then abstraction can also seem to occur in Imagination, as well.

Comment [A55]: Try to abstract willfully (i.e. by means of Imagination, which is willful), and you will find that you just can't do it. Thus abstraction is a controlled 'backing up' in the intellectual order, not a joyous 'shooting forward' in the willful order.

Comment [A56]: Mental Exercise to model abstraction – Abstraction occurs when you cease thinking about something in one lower (physical) way and instead merely think about it in a higher way. It is like turning off an overlay in a planetarium. I can be thinking of imagined images over stars, but then when I cease to think of them, and just think of the straight lines and angles connecting the stars, I've abstracted from the physical/sensate to the rational.

As long as I was thinking about the constellations as fleshed-out images I was using my rationality AND my sensate faculty of Imagination (looking through Sight in the physical mindset). When I abstract, I cease looking at them with my Imagination, and instead look at them only with Reason (technically, still through Sight as well, though). Here Sight is like the sensate analog or 'place-holder' of Reason.

[29] Aristotle, *De Anima*, III:7 (431b13-17).

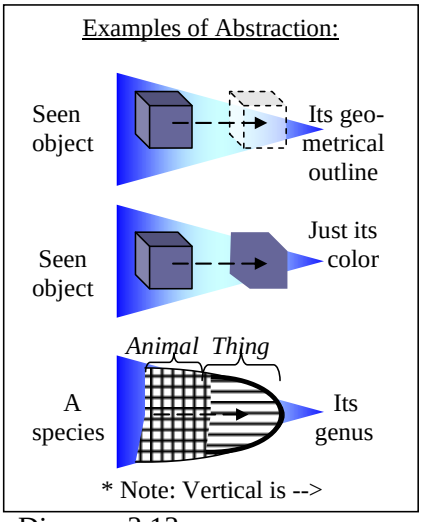
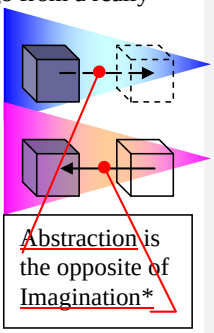


Diagram 3.13

Normally, when you abstract you abstract to what is more essential. However, this is not always the case. For instance, you could abstract from a seen image to just its color (purple-ness), which is accidental to it, and not essential at all. Thus the only reason we often abstract to more essential things is simply because it is useful, and we choose to.

Abstraction is really the direct opposite of Imagining. If you were to take a real, uncolored outline and visually fill it with color, you would be imagining: You would be imagining colors within its outline. Conversely, if you were to go from a really colorful thing and mentally superimpose upon it just its bare outline-shape, you would be abstracting: You would be abstracting *from* color. Thus abstraction and Imagination are inverse to one another. One should note however, that abstraction can, at times, seem to occur in or by means of Imagination. Why is this? Because inasmuch as Sight shines through and is an integral part of Imagination, one can use one's Imagination as an aid-by-which and an environment-within-which to controlledly 'model' abstracting.



* in the physical mindset .

Diagram 3.14

Questions:

1. Using vocabulary: If Force in the physical realm, is equivalent to Sight in the sensate realm, how might you 'abstract' in the physical realm? Ans: Hold back, and don't force as hard.
2. Give an example of how you might abstract in the rational realm. Ans: Stop thinking about something, and start thinking about what is more general in it. For instance, if you go from thinking about a thing's 'robin-ness' to just its 'thing-ness,' then you have abstracted in the rational realm.
3. In Diagram 3.13 above, decide which abstractions occur in the sensate level, and which occur in the rational level. Ans: The first two (coming from a "seen object") occur in the sensate level. The last one (going from idea to idea) occurs in the rational level.
4. How has the human eye evolved over time to facilitate abstraction? Ans: It has evolved the ability to re-focus, either far-away or up-close.
5. Think. What are some other kinds of abstraction (you may use the word "abstraction" loosely)? Ans: Abstracting from using two, three, or five senses in interacting with somebody to only using one

Comment [A57]: In the examples at left, ask the students which one(s) of them are abstractions *to what is more essential* (rather than just accidental). [Ans: Definitely the last, and maybe the first as well (This is debatable—it would seem that geometry is of the essence of physical matter, so that math is a higher science than physics).]

Comment [A58]: We often want to figure out what is essential to something in order to figure out alternative possibilities and ways of doing it.

Comment [A59]: That Force is like Sight, see Diagram 5.2.

important sense; abstracting from uncertainties back to what you know is sure. Physical level abstraction in which you reduce your force / intensity. Abstracting from one's natural Instinct by deliberately restraining it from its inclinations.

6. What are the two faculties in which abstraction can occur? Draw something representing these faculties at the tips of the blue cones in Diagram 3.13. Ans: Sight and Knowledge. Perhaps draw an eye (at the start of the top two) and a thought bubble (around the bottom one).
7. Can animals abstract? If so, give an example. Ans: Yes they can; a sheep dog can come up with one course of action in the event of many scattering sheep. The sheep-dog does this by ceasing to look at them as individual sheep, and instead looking at them as a herd.
8. Think: Does abstraction enable you to leave an object and arrive at just the idea of it? Ans: No. Abstraction occurs entirely within one faculty (by that faculty 'revising' what it did. Consequently, abstraction does not enable you to pass entirely from one faculty (Sight) and realm (sensate) into another (Intellect / rational).

Comment [A60]: We will consider how to do in the next section.

2. Transition to human rationality: the Agent Intellect

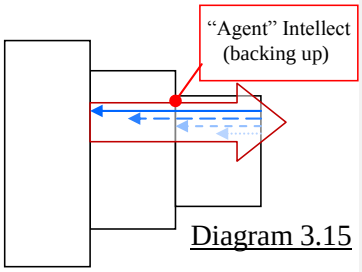


Diagram 3.15

Animals can abstract sensate ideas, but cannot abstract all the way into the rational realm; only humans can do this. The passing of willful abstraction from the sensate realm into the intellectual realm was such an unusual occurrence that philosophers gave it a special name: the Agent Intellect, called "Agent" (from Lat. *agere*, "to do") because it would seem to 'actively' cause *ideas* to come from sensed things or sensed situations.[30] In reality, the Agent Intellect is not an actual faculty; it is only the effect of leaving behind the sensate component of a dual sensate-rational image.

The Agent Intellect is really just a result of the fact that Intellect is in the physical world,[31] is more fundamental than sensate or physical things, and so tends to remain when these other things are dissolved or removed. Intellect is there because things are made according to determinate formulae (e.g. the DNA for an organism, or the blueprints for a building, or the map of the constellations, etc.). When Sight sees something, Sight acts according to the directions and inclinations of one's spirit (see Diagram 4.14). Now one's spirit is both rational and sensate, and so the

Proper Vocabulary Use: The opposite of the Agent Intellect, is the "Potential/Passive/Patient Intellect," which is what we normally mean by the term "the Intellect." It is called passive/potential because it has the potential and capacity to be passively filled with—and store—knowledge and information. Agent and Patient are then the two parts of the Intellect.

Comment [A61]: In a certain sense, the Agent Intellect, can be thought of as the power which enables a person to convert between the physical and spiritual mindsets (Recall Section 2.2.4). In this sense, the Agent Intellect is nothing more than the Will (to be studied in Unit IV).

Comment [A62]: The fact that it is only the difference, rather than an actual faculty can be seen in the fact that when you abstract, it takes a slight moment to pause and reflect on what you abstracted from and what you abstracted to, to make sure that the former is a true instance of the latter. This brief intellectual 'mental check' is necessary for abstraction to be certain and sure, and the fact that you need to perform such an intellectual thought to connect higher and lower points of what should be purely willful, proves that the abstraction in itself really involves two separate willful acts.

Comment [A63]: In Diagram 3.15 at right, ask the students which of the blue arrows represents more specific knowledge, and which represents more abstract, general knowledge. [Ans: Specific knowledge is represented by the long, darker arrow; general knowledge is represented by the shorter, hazier arrow.]

Comment [A64]: Everything was made at some time, and so whenever it was made, the one who made it must have been aware of and acted according to some determinate formula in making it. Even electrons and forces such as gravity act according to determinate formulas. The fact that nothing is irrational means that chaos doesn't truly exist (at least not in the short-term).

Comment [A65]: (and vegetative too, though this aspect of it isn't important here.)

[30] Aristotle, *De Anima*, III:4 (430a8-9); III:5 (esp. 430a16).
[31] Cf. Aristotle, *Analytica Posteriora*, II:19 (100a16-17).

rational Learning that arises as a result of sense-stimuli is interpreted as needing a cause, which is termed 'the Agent Intellect.' However, since Spirit cannot come from Flesh,[32] there really is no special faculty that does this; rather, man's spirit itself does this when it retreats into a purely rational mode. Thus the intellectuality of the world results from the fact that intellectual values have been not only *spoken* into but—by significant activity—*infused* and *built* into the very Being of physical matter, which provides them a temporary location and/or subject in which to exist.

The need for an Agent Intellect is then obviated by a completely natural process that goes on silently all the time, even when we are not looking: Signification. We will study signification as the correlate to naming in the next chapter.

Questions:

1. What is the difference between abstraction and the Agent Intellect?
   Ans: Abstraction occurs entirely within a level. The Agent Intellect passes entirely from the sensate (and physical) to the rational. Also agent intellect happens rather unconsciously and passively, whereas abstraction is intentional, and takes an act of Will.
2. Between abstraction, Agent Intellect, or both, which do animals possess? Ans: Only abstraction.
3. Classify the following as either abstraction or the Agent intellect:
   a. A botanist sees a tree and thinks "*quercus alba*." Ans: A.I.
   b. A child looks at a cloud and imagines it to be a castle.
      Ans: Both abstraction and an agent intellect; the child must abstract to stop focusing on all the cloudy-details, and instead look at just the shape; however, in knowing it as *a castle*, rather than just a general billow, the child is performing an operation of the Agent Intellect.
   c. An air traffic controller studies two dots on a screen and thinks "Uh-oh." Ans: Agent Intellect (The dots represent rational values that are entirely different from their color/shape/etc.)
   d. A hot air balloon is silhouetted on the horizon. Ans: Abstraction
   e. A person senses the biting irony that what he intended for another, happened to him. Ans: Abstraction. One abstracts from the details of the two situations, and instead notes the cyclic nature or general similarities between the two events.
4. Which is more beneficial to a person learning something from a teacher: To see and experience a hands-on example, and then be informed about what it was; or to first be told what it is, and then experience a hands-on example. Ans: The latter; the former prevents one from abstracting by oneself, because one has to wait until the rational explanation is given; however, the latter permits one to begin abstracting as soon as it is experienced. Thus it is always better to give commentary and instruction before and while the experience is taking place, rather than afterwards.

Comment [A66]: cf. John 3:6-8. (also I Cor. 15:50).

Comment [A67]: "Significant" means 'making to signify' or 'making a sign.'

Comment [A68]: Here's we're talking not about artificial signification (As when H signifies the 'h' sound, or a hospital), but natural signification, as when a thing signifies its natural nature (e.g. a basketball, by its very existence, signifies the concept of 'ball-ness' i.e., a set of points equidistant in 3 dimensions from a center). We will learn the differences between natural and artificial signification in the coming chapter.

Comment [A69]: Irony and jokes are good examples of abstraction occurring totally within the rational level.

[32] Aquinas, *Summa*, I.84.6.c. Cf. Aristotle, *De Anima*, III:4 (429a24).

Chapter III. Naming and Signification

Naming and Signification form the real connection of Reason to the lower (sensate and physical) levels of nature. The ideas of naming and signification deal with the fields of Semantics and Semiotics.[33] Names and signs cause things to come to be in our mind, and so consequently names can be used in language to stand for things. We will see in the coming sections that names and signs are really the same thing, only differing in the *way* in which they are respectively used.

Comment [A70]: Names are used as the terminus of an act of naming. Signs are used as the origin of an act of signification. If students want a better explanation, refer them to Diagram 3.20 below.

1. Communication

Some things stand for concepts naturally (e.g. sunlight signifies blessing and goodness and truth; a waterfall signifies majesty; a sudden, sharp pain signifies evil; bright colorings signify warning).[34] As the last example shows, even wild animals recognize natural signs. On a slightly higher level savages, and societal outcasts, and deaf people, who grow up never having heard or said a word, still recognize concepts (i.e. intellectual/spiritual being) in the natural events they encounter. Such individuals will still have a regular, repeated thought or action or feeling for various objects, even if they do not have a vocal word for it. At a still higher level, those who do not experience regular discourse may have words for things, but they will talk in *pigeon languages*. Such languages are characterized by nothing but nouns, adjectives and occasional prepositions "fork . . . by mouth . . . me happy." Thus we see that even at the lowest levels of language, naming and signification are already abundantly present. At higher levels of language, speakers have names for practically everything that would serve to facilitate a complete description of human thought: verb tenses tell *when*, conjunctions keep thoughts rolling, multiple moods convey possibility and necessity, and adverbs clarify just *how*.

Comment [A71]: It seems that when we develop a concept, we often 'commit' some sort of brief instinctive reaction in ourselves to producing or acting out something of that concept's content. For instance, I may decide in my heart that whenever I hear the word "carnivore" it will cause a certain 'carnivorish' occurrence to be felt in me (e.g. either I will imagine a carnivore eating meat, or I will briefly pretend that I myself am a carnivore and am at that moment eating meat); or whenever I hear the word "angel" I will briefly recall a certain shining image of an angel, that I remember from my childhood. This feeling wears away within a split-second, signaling that it has briefly engaged the Imagination and short-term memory. In one sense then, the Agent Intellect can be thought of as that brief instinctive reaction that occurs in us as we hear the sound of that concept's term. By automatically reacting (or producing imaginative phantasms) in various ways to various spoken words, we permit those concepts to momentarily take possession of our nervous-system for a brief moment and in that millisecond be *known* by the Intellect. Indeed the Intellect can only 'know' what we ourselves formally *do*, either within ourselves, or through external-looking gaze and action of our eyes. The reason we mumble a word when we see its letters its because the distinctive act of mumbling in ourselves, is something that can be consciously experienced and then reflected upon by the Intellect. Thus Instinct forms the 'rising' motion indicated by the red arrows (from the lower to the higher sublevels of the sensate realm) in Diagrams 3.16 and 3.17.

What we should take away from this is that language performs a specific function in our life: It is a sensate phenomenon by which the quirks and intricacies of mental activity are signified. In stating this, we should note that such signification is all 'one-way:' Lower language always signifies higher thought. Never does thought signify language, nor in the remotest way influence it: Two people can do as much thinking as they like up on the rational level—even unto eternity!—but unless one of them chooses to stoop down and lay out his thoughts before the other, in time, using signs that the other understands, neither one will ever know what the other was thinking. Consequently then, language is a sensate phenomenon, but it is absolutely necessary for the meeting of minds. Though human rationality—and mental activity—is not dependent upon language for its existence (as the rational savage individually proves), nevertheless language and

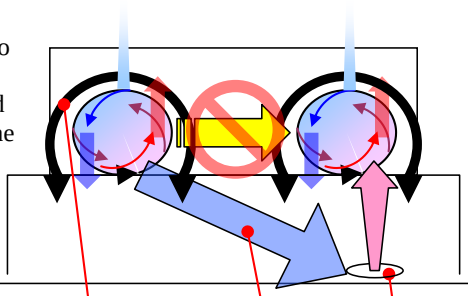
Comment [A72]: Ask the students what this sort of language is lacking. [Ans: The word "is" and a regular syntax or ordering of subject – copula – predicate.]

[33] The modern science of Semiotics began with Ferdinand de Saussure, in his ground-breaking *Course in General Linguistics*, published by his students after his death in 1916. Saussure proposed a two-fold nature to every sign, made up of the signifier (some spoken word) and the signified (some mental concept). However, although Saussure re-popularized this study of signification, he was by no means its inventor. Earlier scholars such as the 14th-century scholar Thomas of Erfurt, in his *De Modis Significandi*, Ch. 1, had already investigated the idea of the voice as signifying a higher concept. Aristotle himself had talked of signification in the introduction to his *On Interpretation* (16a3).

[34] Aristotle, *Analytica Priora*, II:27 (70b8-26, esp. 13).

signs are the only tools we have by which to grasp and convey the depth of our mental experience to one another. Community and meaningful interaction then depend upon the level of one's language, and without good language, life becomes dull, imprecise, and crude.

We might ask ourselves why this should be the case. Why should we need to communicate physically, and not use some spiritual means, instead? The answer is that the human mind has been forcibly and formally *joined* to a physical body. Consequently it is naturally focused downward on the experiences that it has within this bodily realm, namely, what can be perceived through its senses. Thus we need language—experienced sensately—to communicate our thoughts to one another.



Human minds are as-it-were 'shielded' by their downward-directed nature from direct inter-action with other minds. This means that a mind must communicate by manifesting signs that are naturally significative to the other.

Diagram 3.16

Questions:

1. Why does the human mind require sensate signs? Ans: Because it is joined to a body.
2. What is "pigeon language?" Ans: Language in which the elements of grammar are lacking.
3. Is human mental activity exhausted by what can be conveyed by language, or are some things indescribable? What can we conclude from this? Ans: Even though language could perhaps theoretically convey and communicate all mental activity, in actual practice, mental activity is often complex (as when a person performs an action for 13 separate, though related reasons), and it would take too long to perfectly explicate every aspect of their thought, by language. Anybody who has a profound spiritual experience knows how integrated and complex the experience is, and thus that no human word(s) could possibly capture every aspect of it.
4. Have you ever seen a person become tongue-tied, and instead try to 'emote' or 'act out' something, without using words? How successful are they? Ans: Their actions are only as successful as the sign-value that they possess. Since most people are usually more focused on expressing *themselves* (at this end) rather than on how it is ultimately perceived (at the other end), they usually fail to fully convey the full measure of what they intend to communicate. However, people such as mimes can be very successful, because they do it intentionally, and because they practice at it.
5. What happens when you say something to somebody, and they do not speak your language? Indicate in Diagram 3.16 where the break-

Comment [A73]: In particular, the human mind is probably joined to the nervous system of the body, since rationality occurs as a "finer dimension" within sensation (recall the use of this term near the end of Section 3.1.3).

Comment [A74]: Mature adults have this problem, when they try to convey their mind to another: It isn't that they have nothing to say, but that they have too much to say, and that they must decide what to forgo and 'pass over' in the interest of time, and of keeping their audience's attention. In such situation it is important to just 'stick to essentials' and try to pack one's words with as much meaning as possible in the shortest breath. This means that every word must be perfectly aimed, and have exactly the sense that one intends, neither overshooting nor undershooting.

Comment [A75]: That is, both self-integrated within itself, as a cohesive solid whole, and integrated with other beings' simultaneous experiences, so that it overflows into them as well.

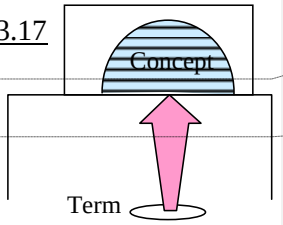
Comment [A76]: cf. Paul's description in II Cor. 12:2 of a person hearing words in the 3rd heaven that no human may speak.

down / in communication occurs. Ans: It occurs by the fact that you have one sign for your concept, and they have a separate one.

6. Theorize: Why do people get into run-on sentences and long trains-of-thought? What should they do instead? Ans: Because their thought-processes are greatly intertwined and tangled—often forming closed loops (by indirect and accidental connections). Instead, each thought should be separated out from the others, and expressed as discreetly an succinctly as possible, and no more.

2. Terms and Concepts

Diagram 3.17



Terms signify concepts.

A general name for a name or word is a "term." A term is a word that signifies a concept.[35] What is a concept? Concepts (or ideas) are substances at the rational level.[36] Just as sensate and physical objects 'hold their shape,' so our ideas 'hold their shape,' and indeed hold them longer than the physical and sensate substances to which we are more accustomed in our physical world.[37] After all, ideas last forever, whereas matter soon wastes away. A concept holds its shape as a simple essence at the rational level, a 'whatness.'[38] For instance, if you have a concept of "a duck," you know that it is a broad-billed, water-fowl, and also an animal, and a thing, as well. Noting that this is also the formula for an essence (recall Diagram 3.4),[39] we can conclude that a concept is *identical* to an essence, the only difference being that the concept is as it exists in your mind—subjectively—whereas the essence is as it exists objectively, in the mind of God (as well as in itself).

Because concepts exist both in the mind and in the outside world (as essences), we can have sentences that begin from either of them, as the subject. Thus "*Bird-ness* is a funny way of life" has a subject that is just an essence; conversely, "*The birds* are chirping," has a subject that is a real thing, of which we have a concept. Thus in one case it is the pure form that is the subject and the sentence exists purely on (or *within*[40]—cf. Diagram 3.21) the rational level, whereas in the other it is the matter-form composite that is the subject and the sentence would be drawn as overlapping into the sensate and physical realms, as well. Just as we can have concepts of physical things, we can also have concepts of sensate actions such as "Running," "Booming," "Blue" or "Tasting." In these, the intellectual idea or concept enters into a sensate action and exists in it, as long as, or wherever (e.g. in the mind's imagination) the action exists. Thus whenever booming occurs in reality or your memory or your imagination, it is always known there as "Booming," and not just as the onomatopoeic sound. Of course, this is only true of

[35] Aristotle, *De Interpretatione*, I (16a13-15); *Analytica Priora*, I:1 (24b17).
[36] Aristotle, *Analytica Posteriora*, II:13 (96a34), cf. II:27 (87a36); *Metaphysica*, III:2 (997b3); V:8 (22-26); VII:3 (1028b33-35) VII:2 (1030a19); VII:6 (1031a18); VII:9 (1034a30).
[37] This can be seen from Aristotle, *Analytica Posteriora*, II:19 (100b8-15); I:33 (88b33-35).
[38] Aristotle, *Metaphysica*, VII:4 (1030a19).
[39] Cf. Aristotle, *Metaphysica*, VII:5 (1031a12-13).
[40] Aristotle, *Analytica Posteriora*, II:19 (100a7).

Comment [A77]: Remind the students that in Diagram 3.17 at right, the top box represents the rational level, and the lower box the sensate level.

Comment [A78]: Technically, term is called "term" from "terminus" (Lat. for "end"), because they form the extremes or ends of premises. E.g. In "All men are fallen," "All men" is one term, at one end of the premise, and "fallen" is the other term at the other end of the premise.

Comment [A79]: We see then that part of the process of Intellect entering into lower levels is that intellectual substances (ideas) enter into physical and/or sensate substances. See Diagram 3.18 below.

Comment [A80]: A sign of the fact that we have intellectual (rational) concepts for these is that we readily associate them with other non-sensate, purely intellectual concepts. Thus we associate 'running' with 'campaigning,' 'blue' with sadness, and 'tasting' with first experiencing (as in "tasting defeat").

Comment [A81]: The fact that various concepts don't have to, but can exist inside of the imagery we imagine (recall the fence-bending experiment in Section 3.1.4) tells us that man's Reason is something subtler, finer than, and distinct from his Imagination. It is different in kind from his Imagination, and so we can conclude that it cannot have arisen there naturally and organically; rather, it had to have been put there by God.

humans (who have rational Intellects), and not animals. Lastly, we can have concepts of purely rational things: "Justice," "analogy," "duty," "value," etc. In all of these the term signifies a concept that describes that abstraction.

Questions:

1. What is the relationship between concepts and essences? Which is subjective and which is objective? Ans: They are identical, except that concepts are subjective whereas essences are objective.
2. Correct the following statement: "Concepts refer to terms." Ans: "Terms refer to concepts" (cf. the direction of the pink arrow in Diagram 3.17).
3. Do concepts arise from things that are just formal, or also from things that contain Form and Matter? Ans: From both!
4. Do concepts refer to things or do things refer to concepts? Ans: Both.
5. Think: What level do concepts exist at, and if so, then how can they be 'of' something at a different level? Ans: Concepts occur on the rational level (cf. Diagram 3.17). They can be of something physical or sensate, by means of overlapping/infusing: The rational realm overlaps/infuses into the lower realms so that the concept of greenness is there present in the greenness, but only in a rational—not physical nor sensate—way.

3. Naming

Animal Naming

Animals can name physical or sensate things and situations. An animal will have a determinate call for 'tiger' and another one for 'I'm here.'[41] Two separate animals may use a common sound for a particular object or event for one of two reasons: *nature* or *nurture*. On the one hand they may both have similar DNA, and this may cause them to instinctively feel about something in the same way, and this is nature. When this happens, each animal instinctively 'feels' as if it were its own sound, even though another member is making it. In the same way ants feel like they are one another, and thus the whole ant colony has one big, super-ego. On the other hand, two animals may have a common word because of common nurture. For instance, an animal may 'pick up on' a certain sound simply because its mother made that sound in a certain situation. Thus North American crows have different calls than European crows. Sometimes a sound is nurtured into an animal's use by direct imitation, as when one animal is playfully mimicking another. In this latter way, monkeys and parrots learn certain behaviors and/or words by *imagining* and then imitating humans, or one another. The first way (nature) is a product of raw Instinct, and any sounds produced by it are not truly names, but just signs of how they feel; the second way (nurture) is a product of Imagination, and in this, the sound produced is a name (noun), of sorts.[42]

[41] Aristotle, *De Interpretatione*, 1 (16a28-30).
[42] Aristotle, *De Interpretatione*, 1 (16a19-21).

Comment [A82]: In feeling like they 'are' one another, they become psychologically united, a single substance. Thus though not physically united, yet in a spiritual sense, the society or colony of them is a spiritual substance, a single nature (Recall from the next-to-last comment in Section 1.5.1 that substance requires unity of some sort).

Comment [A83]: Monkeys and parrots probably have a very strong Imagination, and take playful enjoyment in effectively replicating a sound.

Comment [A84]: Someone might wonder, "Why are sounds produced thru Imagination intellectual (i.e. names, cf. Diagram 3.20), whereas sounds produced through Instinct aren't?" After all, isn't Imagination supposed to be willful (see Diagram 2.14) and Instinct intellectual—i.e. just *the opposite*?" To answer this it will help to refer students to Diagram 3.11 of the original (animal, not human) configuration of the sensate level. In this diagram we see that Imagination originally occurred in the intellectual order, and Instinct in the willful order. Imagination was a construct of various tied-together and connected sensations, and Instinct was a spontaneous outburst of willful activity toward something good (or against something bad). Seen in this way, Instinct would have no interior intellectual content (no name within it), but would just be a 'blow off' of extra energy, caused by—and as a sign of—the current situation in which the animal found itself. Another animal (or human) could 'read' a word into this sign, but it would not be intended by the animal that had produced it. Conversely, Imagination would be of something that the animal had already seen or otherwise experienced, and thus Imagination would have an intellectual content within it (i.e. whatever the animal had seen before). Thus the Imagination whenever it was replayed, would implicitly be a name or reference to that *kind* of experience that the animal had once had: In an ontological sense, it would directly flow *from*–and be formally caused by—that past event (imagine something flowing right-to-left in Diagram 3.11, from Sight into Imagination): Whenever the animal would start to see the same thing, its imaginative expectation of the whole completed outcome would quickly be replayed before its very eyes, enabling it to intellectually 'foresee' what was going to happen. Thus any such Imagination (distinct from other Imaginations through the unique manner of its tied together connections) would be an implicit name of that sort of outcome. Thus whenever an animal would see something and closely follow it with its eyes or vocal-cords or some other body-part, then the animal would gain an implicit imagined understanding of just *how* to go about doing it (i.e. how to *continue* doing it, once it had started doing it). Having gained this imaginative understanding ...

Comment [A85]: The sound produced because of Imagination doesn't have a concept within it, but it does *refer* to the thing it is imitating. Eventually (after 2 or 3 repetitions), an animal will forget about the thing it is referring to (usually its mother, but maybe a human being), and instead make the activity its own, and now the activity has become engrained within its own Instinct. Thus animals learn from their parents by first playfully imitating, and then making it their own as they instinctively 'get the feel' of it.

In general, even though animals can use names that naturally come to them, yet they cannot invent names. This is because animals cannot deliberately create epiphenomena (i.e. new ideas), the way humans can.

Nominalism (from Lat. *nomen* "name") was a philosophy rife in the 14th–16th centuries, ascribed to by William of Ockham, Martin Luther, and others, and eventually blossoming into modern Positivism (Hume, J.S. Mill). It stated that all concepts and natures and universals (e.g. 'cows' or 'cow-ness') were not permanent, spiritual substances, (holding their shapes) but simply malleable names.[43] Thus, Luther held that God could justify a sinner simply by calling him "good," even if he was really bad.

Naming

How do terms come to be? In order to create a term, we must name something in some way. A name is a distinctive (i.e. distinct from all other names) sensable action or sound or symbol that is associated with some object and thus as-it-were 'rests upon' its matter, 'coloring' it in some way. The name is associated with the higher concept to which it refers (known as its referent).[44]

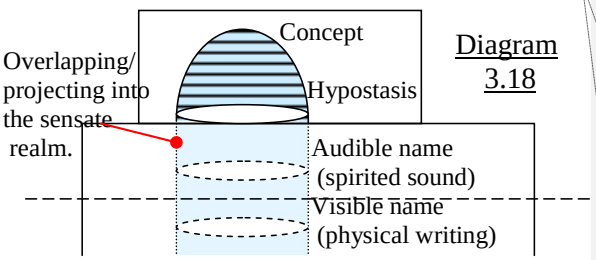


Diagram 3.18

A name is the sensate equivalent to the hypostasis at the rational level. As stated in Unit I, the hypostasis terminates some essence, unifying it and making it be what it is, and no more. The name performs the same function at a lower—sensate—level, tying together and summing up all of the object's Being and characteristics into that single, determinate—now audible or visible—name. Thus the name is the projection of the rational hypostasis into the sensate realm (cf. Diagram 3.18).

But what fundamentally is a name? A name is an intellectual speaking of one thing rather than another. Now this fundamentally happens first of all from all eternity in the mind of God. God's knowledge is creative: When He *knows* you, that creates you. Now God knows you (from all eternity) by knowing your *name*. Thus the essential name for something would be the reverse of its essential definition (cf. Diagram 3.4): Thus if the essential definition of man is "a rational, sensate, living, thing," then the essential name for "man" would be just the opposite: "that-living-sensate-rational-one!" Here the "one"—the hypostasis where the transcendental of Unity is finally reached—can be substituted by any real name (e.g. "Socrates" or "Mark."). However, since the rest of the essence can usually be taken for granted, we often summarize the whole string with just

Comment [A86]: To create epiphenomena (rather than just 'going with the flow,' as animals do), you really need a 'handle' on the situation, and for this you need a rational level, which animals lack.

Comment [A87]: In a way, one's reputation is part of one's name, and one's reputation can include past or present actions. For instance, a trumpet blast that is always played at the king's entrance is a part of his name since it distinguishes him as being something great. Similarly, customary usages such as "Your majesty" or "Right Reverend" or "esquire" or even such things as a coat-of-arms or a tip-of-the-hat are part of one's name, since they identify the recipient in some way.

Comment [A88]: The name rests upon its matter, because matter is indeterminate and unchanging, and the name is arbitrarily placed upon it, and upon all of it, usually by mere convention (except in the case of onomatopoeia) rather than because of some characteristic of its form. If the name rested upon its form, the name would be dynamic and changing—as fast as its form changes. Thus the name is as-it-were a character or quality that is projected upon all of the thing's matter.

Because it rests upon a thing's matter, it is then understandable why Luther thought of a name as covering someone, almost like a blanket might cover a dirt-pile.

Comment [A89]: Here we don't mean physically coloring it, but mentally coloring it.

Comment [A90]: In Diagram 3.4, the thin little blue arrows make up its essential definition, but the one wide arrow traveling in the opposite direction would represent its essential name.

Comment [A91]: The word "that" substitutes for the first, most general determination, "Thing."

[43] Cf. Aristotle, *Analytica Posteriora*, II:10 (93b39); II:7 (92b26-27).

[44] Although not originally from him, this is the earth-shaking idea of Ferdinand Saussure, which in 1907 began the modern science of semiotics (Gk. for "sign"), the study of signs and signification in language. Ferdinand de Saussure, *Course in General Linguistics* (Open Court, Peru, Ill.: 1972), 65-67; retrieved Aug. 2010 from http://books.google.com. Inasmuch as a subject in a sentence can signify some abstract, or absent thing, it can also be said to '*refer to*' that thing. This latter is the idea of reference, re-popularized in 1892 by Gottlob Frege. See "On Sense and Reference" in Peter Geach and Max Black, eds, *Translations from the Philosophical Writings of Gottlob Frege* (Oxford, 1970), 56-78.

its last determination, "Mark," and thus names are best visualized at the very bottom of an essence (cf. Diagram 1.11). However if there should ever be any ambiguity about what we mean by a certain name (e.g. either a living "duck" or the action 'to duck'), then we can always backtrack and enumerate the full string of essential characteristics again—or at least as much of it as is necessary. In so doing so, it will be clarified just which branch of the Tree of Porphyry we are mentally passing through, and therefore what kind of a being we are talking about.

Kinds of Naming

When we 'think a concept into' a phenomenon, we thereby name it, either *originally* (if we invented the name), or *according to convention* (if the name is already commonly used by others). There are two general ways in which we learn a name for ourselves, either by natural experience or by deliberate repetition. In a child's experience, naming is facilitated not so much by itself, as by the parent's use and exemplification of the word, in its presence. For instance, a parent may say a word with a burst of emotion and so the child will associate that word with that emotion (be it good or bad); if the parent then says it again and makes the child do something, the child will soon associate it with that action, as well. Thus one person can, by mere demonstration, effectively 'name' something for somebody else. The second way that a name can be acquired is by deliberate repetition. If a word bears no resemblance at all to its concept, then it may still be learned by repeatedly exposing oneself to both simultaneously. This is why recitation is so important in learning a language or a set of new names. You must somehow make the words/names 'your own,' and this will only happen if you name them that thing in your own mind. Thus naming occurs by invention, experience, or empatternment.

An act of naming is the passing through each of a thing's essential characteristics, in order, until one arrives at its hypostasis, through whose name all the preceding characteristics are normally 'summed up.'

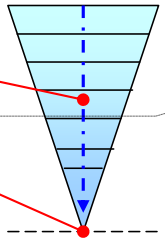


Diagram 3.19

Naming can be direct or indirect. Only sensate phenomena—recognized word-sounds or letter-patterns—occurring in someone's most personal, inner consciousness have been named directly. Direct naming is the realm of mental imagery and spoken language, as well as familiar fonts and scripts. *Direct naming* is whatever people actually first 'go to' in their mind, when they think of a concept. This means that it is not only the formally correct language used by the educated, but also any twang and slang that may be in use, as well. Some direct naming may be common (e.g. common words and common symbols used throughout the community), but much of it is personal, as when different men have different mental images of the concept 'virtue.' Indirect naming occurs of physical substances through direct naming (i.e. through the senses). When someone points to a rock or a dog and says "This is 'exhibit A' or this is 'Rex,'" then something physical has been indirectly named. *Indirect naming* occurs with regard to physical substances, as well as signs that are non-intuitive and thus never first thought of, but still known once they have been explained (e.g. the "H" for "Hospital" sign). Thus directly or indirectly, anything in the sensate or physical levels can be named.

The object of each name is some concept. If we think of the signifiable concepts, we notice that we can have a different name for each one of them, as long as they are

Comment [A92]: Point out the red marker in Diagram 3.18, and demonstrate to the students how to memorize something, one has to first fully acquire the concept of it (up at the rational level) and then *think* it down into [move your hand downward down the blue cascade] something tangible at the sensate level, either a conventional word, or some mnemonic device (e.g. "My—Mercury—very—Venus—educated—Earth—mother—Mars—just—Jupiter—showed—Saturn—us—Uranus—nine—Neptune—planets—Pluto."), or some picture/diagram. Indeed, this is a major part of study and memorization, namely, getting good at 'thinking' concepts into newly experienced terms or drawings, etc. One should become good enough at this so that one knows exactly what one has to do—what thinking or repetitive reciting process one has to go through—in order to memorize something.

Comment [A93]: This is a major part of education, evangelization, etc., namely, to give the learners a new vocabulary so as to enable them to think about the topic effectively. Christianity uses such words as justification, redemption, and communion, each having a specific, unique connotation all its own.

Comment [A94]: By "most personal" here, we mean that which is closest to the rational level, so that there is nothing between it and the rational level.

Comment [A95]: For instance mathematical signs are often unknown to non-mathematically minded individuals.

conceptually distinct (i.e. by a *distinction of reason*, cf. Diagram 3.40). Thus we can have separate names for the concepts "animal," "vertebrate," "primate," "hominid" and "rational," as well as a name for the concept in which they all unite: "man." We can have separate concepts and names for sea-green, teal, chartreuse, lime, etc. even though they only differ slightly in shade and may even mix with each other in painting. Thus beings only need to be conceptually distinct to be signifiable (i.e. namable), not necessarily really distinct. To understand how each name refers to its concept, we must study the topic of signification, which we will do next.

Comment [A96]: "Animal" and "deer" are only conceptually distinct, since they may both belong to the same thing.

Questions:

1. What are the two ways that we can learn a new word? Ans: By natural experience, or by the brute force of deliberate repetition.
2. What are the two ways that an animal can learn a word? Ans: By nature or nurture.
3. What does a name do, and what other metaphysical things is this like? Ans: A name ties together or 'sums up' all of a being's characteristics, and unifies them. This is just like what an hypostasis does, although the hypostasis is fully rational, whereas the name is sensate.
4. Think: How do you designate one thing rather than another when you name? Use the Tree of Porphyry in your answer. Ans: When naming something, you pass down through its essence, from general concepts to more specific ones, until you arrive right at the individual. You designate this individual by taking branches of the Tree of Porphyry that lead to *it*, rather than to something else.
5. In Diagram 3.20, which blue arrows represent direct naming, and which blue arrows represent indirect naming? Ans: Blue arrows that come from above represent direct naming; blue arrows that arise from another arrow represent indirect naming.
6. Explain: Why is it that you can have different names for an engine and all the parts of the engine. Ans: Because, even though they aren't physically distinct, yet they are conceptually distinct.
7. Theorize: What should one do to teach a student the name of . . .
   a. something physical. Ans: One has to let the student fully experience the physical object (esp. with hands-on activities) so as to acquire a complete concept of it.
   b. something sensate. Ans: Now there are four sensate faculties, and so this can vary slightly, depending on whether the thing is a concept of something instinctive, or imaginative, or active, or sensory. In general, experiential and even self-performance activities give concepts of sensate things.
   c. something rational. Ans: The concept must be demonstrated fully. This involves fully explaining either its horizontal *extension* (what things it does/doesn't apply to), or its vertical *intension* (what mental content it signifies), or both.
8. Think: What is the difference, if any between using words and naming?

Comment [A97]: For instance, often a student won't make the connection of the concept of "mitering" to angling off wood, unless he himself *does* it in the shop (Action); or he won't make the connection of some dynamic historical event to its name unless he/she personally gets involved in it on the TV and imaginatively acts it out, as if he were there (Imagination); or he won't fully know what rejection feels like unless he/she personally suffers it (Sensation); or he won't know how delightful sight-reading and improvising music is, unless his/her Instinct is trained to do it (Instinct).

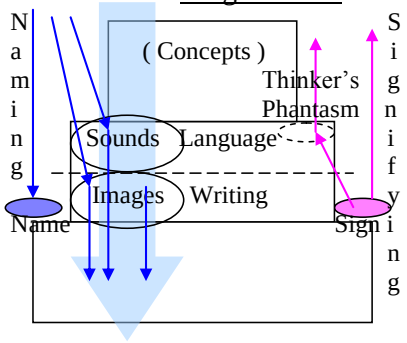
Ans: The use of words in a certain language occurs rapidly and by convention, and so in ordinary conversation, you 'skip over' all the more general essential characteristics of something, and assume that they understand which concept you mean simply by using *that* word, instead of any others in the language which might sound similar. In naming, you designate something for the very first time, and thus you may have to make all these essential characteristics a bit more explicit, listing them clearly, one by one. However, in a general sense, when we use words, we are implicitly 'naming' (or designating) each one, every time we say it.

4. Signs

A sign (or name) is something basic, yet having potent value to signify a higher rational concept. Signs can signify things directly or indirectly. Direct signification occurs only in the speaker's mind: A particular rough-and-hazy imagination or sound, known as a phantasm is the highest and closest sensate approximation that someone can have for a concept.[45] Consequently phantasms are what most directly signify concepts. A phantasm can be a sound, or the sound of a word or an imaginative image, or some combination of these that best and most closely represents for someone the desired concept. Thus the artist 'visualizes' his next abstract picture, and the mathematician rapidly mumbles the numbers as he works out his calculation. In these situation the phantasm is just an imperfect place-holder, that is being roughly moved about and manipulated, not because it itself is anything special, but simply because there is a higher concept (which it signifies) inside of it (cf. Diagram 1.21).

True rationality comes about not when phantasms are pretty or aesthetically complete—as in photographic memory—but when they effectively represent and get at the heart of the desired concept. After all, for humans, the phantasm is just a tool in the service of rationality. In order to communicate large numbers of phantasms to other human beings, systems of indirect signification are used. For instance, a letter-pattern written on a page signifies a particular set of sounds to be mumbled by the reader; these sounds then in turn signify the image in which he/she is accustomed to think that concept. Thus we here have three sets of signs leading to the concept, each one progressively higher: We have the original writing (on the page), the sound (on the lips), and the image (seen in the brain).[46] All of

Diagram 3.20



Naming is a logical 'jumping ahead' in the order of Intellect. Sounds stand for or signify images.

[45] Aristotle, *De Anima*, III:7 (431a16); III:8 (432a6-8).
[46] Aristotle, *De Interpretatione*, 1 (16a3-8).

Comment [A98]: Each person has their own particular set of images and sounds that best represent for them the various concepts that they know. Often the image is something common from their own language (e.g. the sounds of the number "4" or the word "amigo"), but sometimes it is an image or a particular way of visualizing things, that only they have.
Instead of calling it a 'rough-and-hazy' thing, it may help to describe the phantasm as a 'icon,' or 'sketch,' or "likeness." The key part is that the phantasm is almost never picture-perfect (or only occasionally, in people who have 'photographic memory'). The haziness of the phantasm is important because it causes our Intellect to be darkened, as well (a consequence of the Fall, see Unit V. sections 5.1.4 and 5.3.3). Thus because our Imaginations are vague, dark, and blurry, our Intellect must think over and over using single, simple predications rather than constructing large, integrated understandings. Thus if our imaginations more perfectly resembled real things in a crystal-clear way, we would be able to reason about them much more effectively.

Comment [A99]: Phantasm comes from Gk. phaino (φαινω), which means "to shine." This is the same root from which we get "photon," the name for a particle of light.

Comment [A100]: The concept enters into the sign, as a consequence of the nestling: Thus the rational concept *enters into* the sensate or physical substance. Consequently language on the sensate layer is a mere container for, or sensate analogue to higher mental processes.

Comment [A101]: Deep reading (equivalent to the right-most pink arrow in Diagram 3.20) occurs when one bypasses all the intermediate tools which one is accustomed to use (i.e. voice-mumblings, phantasms, etc.) and instead—by the Light of the Intellect—'sees' the various concepts directly in the letter-patterns written on the page.

these then signify the next one up, and ultimately the concept. Thus signs signify concepts, and there can be multiple levels or steps in the process. Since there are whole libraries constructed out of the same sets of 26 letters and their signified sounds, we see that the sensate clarity of the signification is not necessary for being effectively rational.

Signs can signify something either naturally, or artificially. When signs are naturally related to what they signify, it is called a natural sign. If the natural sign happens to be a word, it is called a case of *onomatopoeia* (i.e. when words sound like what they signify, e.g. "boom," "smash," or "whir"). However, in most cases a sign and the thing it signifies are completely unrelated. In this situation, the introduction of the sign must occur artificially, by deliberate Will. When you name it, you then commit a portion of your Instinctive vigilance or sensitivity to listening for that combination of sounds, and you also dedicate a portion of your Imagination to the imagery in which exists the phantasm associated with it. Ever after that, the Instinct will be triggered by that sign to produce the appropriate phantasm, and then the Intellect will know it.

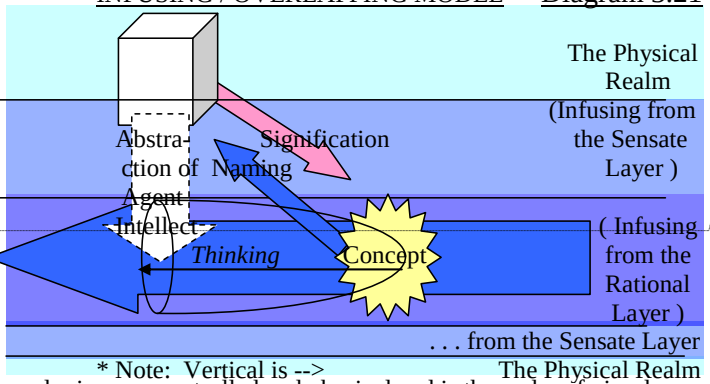
Proper Vocabulary Usage:
It is important that names, and concepts be clearly distinguished from one another. When two names signify the same concept, they are known as *synonyms* (e.g. 'Neil Armstrong' and 'the first man on the moon'). When two names' sounds fail to differ from one another, they're called *homophones* (e.g. "buy" and "by"). When two names' appearances fail to differ from one another, they're known as *homonyms* (e.g. the bird and the action, both written "d-u-c-k").

Comment [A102]: In the preceding pages, we have seen much the same terms used in various situations: Naming and signification can be "direct" or "indirect." Signs can be "natural" or "artificial." Names can be "original" [natural] or "conventional." Animals' names can be "by nature" or "by nurture." All of these dichotomies are essentially the same thing, and it doesn't matter which set of terms you prefer to make use of (i.e. what is "direct/natural/original/by nature" or what is "indirect/artificial/conventional/by nurture").

Language and Writing

Within the sensate layer, there are two realms of signs (cf. Diagram 3.20). The higher, verbal one which is relatively spiritual (inasmuch as language and syntax is dynamic and spirited), is the realm of oral language. The lower realm is more controlled and physical and is the realm of visual letters and pictures. In human history it is known that the earliest Egyptian pictograms or hieroglyphs developed as shorthand ways to represent verbal sounds. Thus speech preceded and led to writing as human beings began inventing written representations of their voice-sounds. This relationship holds still in the present age when sounds name letters and letters signify sounds. Thus writing is a lower derivative of language.

INFUSING / OVERLAPPING MODEL Diagram 3.21



Comment [A103]: The orderings of syntax and inflection, as it differs from language to language and dialect to dialect, has much more to do with spirit than with concrete, substantial formulas. This is why to really learn a language, you have to develop an ear/tongue for it (language means "tongue" in Latin), and not just learn it from a textbook.

Comment [A104]: In Egyptian, the first sound of a given picture, represents the sound that the scribe wants the reader to pronounce. Thus 5 pictures makes a five-sound word. A more striking situation is the case of Hebrew characters which, when read right-to-left, generally represent what the lips do, as the sound is made. An exception to this rule is the Chinese alphabet, which was developed more as written pictures, and not so much as a spoken language. Thus the Chinese character for "Englishman" (an upward-pointed triangle underneath of a vertical mast and cross-bar, with four square sails in each of the quadrants) looks like the end-on view of an English sailing ship.

Comment [A105]: Possible Activity: If desired, show the students a Hebrew alphabet. Have the students look at the letters, and point out to them how the way it is written often represents what your lips do as they produce that sound. *Be sure to tell the students that Hebrew is written from right to left, and so the start of the sound is represented by the right half of the letter, and the end of the sound is represented by the left half of the letter.

Simple Signification of Nouns and Verbs

Verbs (other than the word "is") signify Becoming. Nouns signify an essence. The word "is" signifies existence. Since Becoming implies Being, any verb also indirectly signifies existence,[47] but it may be an existence only in the mind (e.g. as in the sentence "The heffalump attacks.").[48]

The most ancient verbs are progressive tense constructions (is + the participle) because all of these are combined with the word "is," and thus explicitly express both Becoming and the Being that is part of them (e.g. "the man *is running*"). In this situation the participle is like a verb because it expresses Becoming, but it is like an abstract noun because it signifies something-or-other (determined by who the subject is) that, though changing, is still in need of the word "is" to declare its existence. Eventually, states of Becoming would come to be signified directly—without the word "is," and with the element of Being just taken for granted or assumed. Thus "the man runs" would describe becoming at the very moment of occurrence. We see then that adjectives (runny) became verbs (runs) by means of participles (running).

Higher Orders of Signification

We have already seen that words *signify* simple concepts. Thus "truth" or "veritas" or "αληθη" all cause approximately the same concept to arise in the mind of the listener. Besides words, sentences (or really clauses) signify—no longer simple concepts, but—complex understandings, known as *facts*.[49] The sentence "April showers bring may flowers" signifies *the fact or causative relationship of* April showers bringing May flowers. The sentence "I . . . am . . . hungry." signifies the fact that I am (In fact, i.e. really!) hungry. Even though it takes an entire sentence, each fact is a single thing, a single reality, a complete thought, tied together by the word "is," and recognized as such by the listener. Beyond clauses, compound sentences can signify things such as conflict, causation, or simultaneity, when two clauses are connected by conjunctions such as "although," "because," or "and." On an even higher level, a novel can signify an entire political principle or position. Thus the amount of intellectual data that can be signified is not limited to simple sentences, but can mount up to more and more complete ideas, as the expressed thought grows to higher and higher levels of complexity.

Questions:

1. Can naming be completely silent? Ans: In the case of deaf people, yes.
2. Can naming be completely non-sensate? Ans: No. Even fully blind and deaf people associate some other sensate feeling with each of the words that they are thinking.
3. Circle the correct answers: (Intellects / Senses) name, but (sensate signs

Comment [A106]: This is why the verb "runs" (present tense) can be replaced by "is running" (present progressive tense).

Comment [A107]: Concepts are always simple.

Comment [A108]: Some people argue that concepts in different cultures have different meanings, and so the same word for "truth" in different languages will mean different things. This position is not held by this author. Although different cultures may emphasize different aspects of a concept, the concept is still substantially the same from culture to culture, as long as it is defined (relative to the same higher concepts) and functions in approximately the same way. Thus a table and a "mesa" are approximately the same because they both function *to hold up or elevate objects placed on top of them*, even though one culture thinks of it primarily as a wooden, four-legged platform, and the other primarily as a solid, stone altar.

Comment [A109]: Thus the fluent speaker does not have to break the sentence up to decipher it, but instead 'swallows it whole.' Some people (esp. speed-readers) even imbibe or apprehend entire paragraphs whole.

Comment [A110]: This is why books are divided up into paragraphs, sections, chapters, units, etc.

[47] Aristotle, *De Interpretatione*, 12 (21b9).
[48] The "adequation of intellect and being," as the Scholastics called it, is when there is a proper and true correspondence of what is in the mind to reality in the outside world. Aquinas, *Disputed Questions on Truth*, I.1.1.c, in *Thomas Aquinas: Selected Writings*, ed. Ralph McInerny (Penguin Books, London: 1998), 167.
[49] Aristotle, *De Interpretatione*, 9 (19a33); 5 (17a15-17); *Analytica Posteriora*, I:1 (71a 11).

/ intellectual concepts) signify. Ans: Intellects...sensate signs.

4. Circle the correct answers: In the relationship between spoken language and written letters, sounds (signify / name) letters, and letters (signify / name) sounds. Ans: name . . . signify.
5. What is the closest sensate approximation that an animal can have to a concept? Ans: A (rough-and-hazy) phantasm.
6. How do humans use phantasms that is different from how animals use them? Ans: For a human, the phantasm is that in which most immediately is contained the thing's rational concept. Thus humans actively manipulate their phantasms on the basis of their rational thought processes; however, animals only manipulate their phantasms on the basis of instinctive drives and tendencies.
7. Where (in what layer) do _____ unite?
   a. synonyms Ans: In the rational layer.
   b. homophones Ans: In the upper half of the sensate layer
   c. homonyms Ans: In the lower half of the sensate layer.
8. Describe how written languages evolved. Ans: First there was oral language; then various hieroglyphs began to be used to represent particular sounds in that oral language.
9. Consider: Did language arise as an epiphenomenon (upward), or was it bestowed from the top-down? What does this imply, or why is it significant? Ans: Language was bestowed from the top-down. This is significant, because it is evidence that the human mind—which is the sole possessor and user of language, did not evolve from lower forms, is not physical, but came all-at-once from above, and is spiritual.
10. Is the potential for what can be signified limited (▲) or unlimited (▼)? Ans: Unlimited.

Comment [A111]: Thus an imaginative phantasm will do a different thing (evolve in a different way—cf. Diagram 3.73) for a human, than it will for an animal.

Comment [A112]: This is why the church teaches that in the case of every single human being the rational soul is infused all-at-once by God (from above), and does not arise from natural gestational development (i.e. from the potency of the matter, below).

Chapter IV. Connections from the Sensate to the Rational

1. The Rational Word

Why do we have concepts? We have concepts because we have the ability to produce rational words. A rational word is any intellectual-data that you think to yourself, as if you were saying it or taking note of it to yourself, out loud. There can be a rational word of "corn" or "blue" or "good" or "pitiful," etc. When the rational word subsists and stays there in the same situation, it subsists there as a concept. Thus a concept is a subsisting rational word. Conversely, rational words are the primary constituents or elements of a concept, and so all concepts come from rational words. The only difference between a word and a concept is that the concept subsists (because it has

Comment [A113]: It is here called a "rational word" because it is like an audible word (indeed audible words are the closest you can sensately get to it, cf. Diagrams 3.18 and 3.20), but it is not vocalized. It is too pure to be vocalized. As will become clear below, it is a light.

Comment [A114]: Tell the students not to get too hung up on these definitions. Concepts and rational words and ideas are essentially the same thing, and all interchangeable.

Comment [A115]: All of this discussion comes from the imagery in Diagram 1.49. Concept corresponds to Potency; rational word corresponds to Act. The enduring presence of the Act causes the surrounding Potency. The discussion also comes from the Theological imagery of God the Son [The Word], as proceeding from God the Father [Divine Mind], and being conceived to permanently endure and take flesh in the womb of the Blessed Virgin Mary.

an extra element of Potency), whereas the rational word soon disappears from the mind, as new thoughts arise.[50]

What is a rational word? Imagine that you are straining to remember a word—that it is right 'on the tip of your tongue'—and yet you can't quite remember what it is. You certainly would know it if you heard it, but in those agonizing moments you can't quite remember which sound-pattern goes with that special intellectual value that you want to express. This is the essence of a rational word: It is *an intellectual value*, pure and simple in itself.[51] In the predicament here described, the person already knows *what* they want to say: They already have an intellectual value (something valuable to say). Their only problem is one of association—that they can't quite remember the correct verbal sounds or term to go with it. The intellectual word—sometimes called an *idea*—is almost like a particular light of the mind, which takes different forms: different brightnesses, different tonalities, and shades, and auras and even shapes—each particular form of it associated with (and indeed *being* identical to) a particular immaterial concept. Thus if I see a green tree, I think to myself "the tree is green." By thinking or saying "the tree" I mean not the sight of it, but the abstract idea of that particular tree. By saying 'Is" I make that idea of the tree actually existent in my mind, and it exists in the quality or mode of whatever predicate follows and modifies it (i.e. green, rather than orange). Thus the word "is" definitively creates or generates the existence of the subject existing in the manner specified by the predicate.

Why do humans have this ability to think rational words? The answer is that God has put into their minds a rational light.[52] Now this rational light has no connection to the physical lights of this world or to the sensate lights of the brain's imagination. Rather it is a light that contains within itself—though only generally and in a weak manner—all the forms of whatever kinds of Being can exist.[53] How can it attain all such forms? Fundamentally it contains all these forms because it comes from God who is the source of all Form and who gives it existence by permanently and continuously shining this good light into it. Thus the light of the soul is like a much weaker light of the light of Truth (cf. Diagram 1.11-1.13), in which all things are implicitly contained, and able to be known.[54]

Comment [A116]: This light has to come directly from God (i.e. not even from angels), for it comprehends qualities that are completely beyond the scope of this world. For instance, the mind comprehends holiness and justice and patriotism, and eternity and mercy and honor and authority and right and goodness. Doubtless many of these have sensate analogies and expressions (e.g. the 'honor' of a lion or 'natural justice'), but even in these cases, the sensate doesn't capture all of the concept. Rather, to fully understand such concepts, the concepts need to be able to stand by themselves in our mind, conceptually distinct from any physical expressions of them, and only then can they express their true and total value, the value of ALL of what we mean by them. When they stand by themselves in the mind in this way, we always associate them to some ideal reality: God, or country, or ego, etc. We can deny these ideal realities, but the fact that we nevertheless understand them and understand what others mean by them proves that we have an intellect that is able to exist outside of the confines of this physical world. Thus of all the animals, only human beings have an immaterial rational light in their mind that enables them to think rational words and from then on to have concepts of them.

Comment [A117]: In this sense, God has given Himself to us, because he hasn't restrained anything—any truth—from coming to us.

Questions:

1. Explain: What is a rational word? Ans: It is a single, unvocalized thought; an intellectual value; a light that takes on one form or quality, rather than another.
2. What is the difference between a rational word and a concept? *Hint:* Use Diagram 3.5 to help you. Ans: The rational word is considered as it is, as being deliberately produced by the Intellect (when you want to say or think something), i.e. from the top-down. A concept is considered as it is, as pre-existing somewhere else,

[50] Passive intellect is "perishable." Aristotle, *De Anima*, III.5 (430a24-25).
[51] Cf. Aristotle, *De Interpretatione*, 1 (16a3-13).
[52] Cf. Augustine, "Unfinished Literal Commentary on Genesis" [De Genesi ad Litteram, liber imperfectus], *The Work of Augustine* (New City Press, Hyde Park, New York: 2002), vol. I/13, 5.20, pp. 124-125.
[53] Aquinas, *Summa*, I .84.5.c; cf. Ps. 4:6-7.
[54] Cf. Jn. 1:9-10; Col. 1:12-13, 15-18; Rom. 8:29.

and subsisting, and then being discovered and understood by the Intellect, i.e. from the bottom-up. Thus the one is as it is at the moment of being produced, and the other as it is in itself.

3. In contrast to humans—who can think about any kind of Being—what can animals think about? Ans: Animals can only think about things that are materially relevant to their material bodies (e.g. food) or situations (e.g. devotion to their master).
4. Looking forward: Does an unborn baby which cannot talk have the ability to produce rational words? What would this imply? Ans: Not being able to get to and communicate with the child in the womb, we cannot know by natural means. Only God knows whether or not He has put that rational light into their minds. It is distinctly likely that they can produce rational words, even before the voice has developed. This would imply that the baby has an eternal soul, and that if you were to abort the pregnancy, you would be killing a rational being (i.e. a person).

Comment [A118]: Speaking a word comes from one who has a priori knowledge. Constructing a concept comes from one who has a posteriori knowledge. See these words, as well as induction and deduction in the Glossary.

2. The Outside and the Inside Worlds: the Ideal and the Real.

Proper Vocabulary Usage:
The Real - By "real," we don't mean "actually existing," because then it would be supposed that Ideal things don't actually exist (Ideal things do exist!). Rather, by "real," we mean *re*-al (from Lat. *res* "thing"): 'Real' is that which has to do with tangible, touchable *things*.
The Ideal – By "ideal" we don't mean "best" as in 'She has the ideal parents.' Rather, 'ideal' means having-to-do-with *ideas*. Thus plans and thoughts are only 'ideal' until they get put into action and become 'real.'

If we have rational words in our mind, how then do those words enter out into the physical world? After all, we normally think in terms of interior concepts, not in terms of outside objects.[55] Now a concept can replicate an outside object (e.g. the concept 'ball'), but the two are different in nature: One is ideal (it is a perfect sphere, no more and no less), whereas the other is real, (has texture and dents, and color, etc).

Comment [A119]: By real, we do not mean "actually existing" (as if ideal things don't exist, whereas these do). Rather, by real, we mean *re*-al or "thing-ly" (from Lat. *res* "thing"): 'Real' is that which has to do with tangible, touchable things, whereas ideal has to do with ideas. Indeed, both the Ideal and Real worlds would be considered 'real,' if you are defining 'real' as 'existing.'

One area that deals in ideal substances is Geometry. Geometry is a perfect science (e.g. it deals with perfect circles and perfect lines). Something is 'perfect' not because it looks perfect as drawn or imagined—since no circle can ever be so absolutely free of at least some small imperfection or irregularity—but because it is defined by a word which makes it *be* what it is, and no more and no less. For instance, a circle is perfect not because it is drawn by a compass or machine, as because it is defined to be "The set of points equidistant from a given center-point." Compasses and machines only seem perfect inasmuch as they approximate this real perfection which is something rational, conceptual, and ideal.

Locations of The 3 Fundamental Sciences:[56]

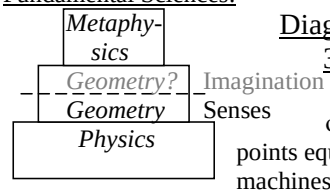


Diagram 3.22

Comment [A120]: In this respect, Geometry is a rational science. However it is not purely rational (like metaphysics); it also extends down into the realm of imagination (the spiritual half of the sensate layer).

Comment [A121]: A compass only attempts to approximate perfection by holding as perfectly as it can to the same radius as it draws the circle. A machine only attempts to approximate perfection by using a formula to know as precisely as possible where to move its electronic pen.

[55] This distinction between the interior and exterior is in Aquinas, *Summa*, II-II.165.2.ad2.
[56] Aristotle, *Metaphysica* XII:1 (1069a30-b2); *De Anima*, III:7 (431b16-z17).

If you went to a rodeo for your birthday, and someone said 'the horse jumps' you would see a horse jumping in a particular place and time and manner and you would hear the commentator's words, and it would all be drawn out in time, like an on-going movie. However the intellectual value associated with this event would not be drawn-out and busy or complex: Rather it would be a single, pure, simple, and substantial, memory or conceptual impression of the entire event—though perhaps with certain internally stored details or other entirely separate impressions associated with it:[57] You would just think of it as "The Rodeo at my 5th Birthday," and it would be under this title that you would remember it with all its stored details for the rest of your life. This is the way it is with rational words: The rational word lacks all accidental modifications like time and place and position; or, if it contains these, it contains them as simple aspects or details within itself, rather than as overriding external modifications and mutations seen in real-time. Thus the concept "My 5th Birthday" or the concept "The horse jumps" is a single concept—a single idea—with a connection of mere factualness or '*whatness*'/ '*thatness*'[58] to the real data and memories from which it came and with which it is now associated. When we recall these memories or imagery, we think, "Oh, yeah . . . *That!*"

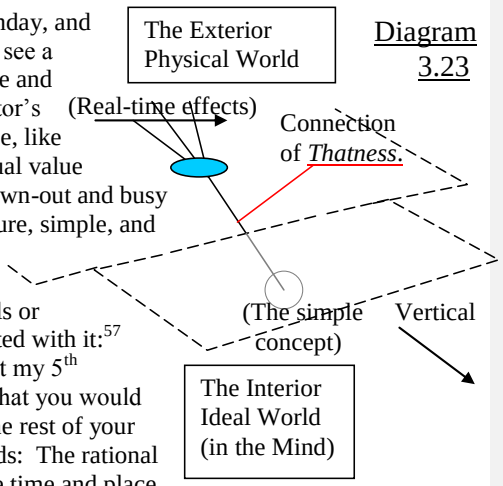


Diagram 3.23

We see then that when intellectual values enter into the physical world, they tell us *what* something is, and no more. Since Time is not a part of the intellectual value (or only an implicit part), there is no time in the rational realm. On the contrary, all activity in the realm of reason is contemporaneous, in an eternal 'now.'

However, just because intellectual values tell us directly nothing more than what a thing is, doesn't mean that we can't manipulate them by means of manipulating those physical objects in which they occur. After all, if a real object represents something—either objectively or at least 'for us'—then it is in our power to manipulate that object as if it were identically the concept itself, which it contains. For instance, knowing that a certain pattern on a die stands for "6," I can manipulate the die in front of me, as if I were manipulating the concept which the die represents. Or, I can rearrange little tiles with letters on them to make entirely different sentences, as happens in a crossword puzzle. I manipulate these physical things in front of me, trusting all along that I will get the same result, as if I were to think it out completely mentally. Thus in a certain manner, Reason can enter into the outside world, not just in its recognition and apprehension of *what* things are, but also in its operations:

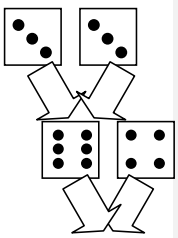


Diagram 3.24

[57] Aristotle, *De Anima*, III:8 (432a14).
[58] Cf. Aristotle, *Metaphysica*, VII:4 (1030a18-23); *Analytica Posteriora*, II:9 (93b22-24). This description of a *connection* of 'whatness,' or 'thatness' is necessary if one is thinking of the 3 levels as distinct from and one on top of another (i.e. not overlapping). In that case, a thing's rational form, must infuse down into its sensate and/or physical forms, and it is this infusing, which is the connection here spoken of.

Comment [A122]: For instance, you don't consciously remember that "it occurred at 3PM," but if you think about your memory, you may be able to conclude or guess that it did in fact occur at 3PM. Here the fact of 3PM-ness is internal to and part of the fact of the entire event; it isn't external as if you could abstract 3PM-ness from the substance of the event (that would be impossible because if you were to imagine it at night, then it just wouldn't be the same event that you remember! At best, it would be a fantasy merely similar to the real event.).

Comment [A123]: Only people with photographic memory are able to recall real-time imagery as well, so as to mentally 'put themselves there' again, at the very event.

Comment [A124]: You could have a concept of 'the rodeo of my 5th birthday,' but it is remembered as a static event, not as something on-going and changing in time. You can 'relive' it in your mind, but only by jumping abruptly from one stark and memorable still-frame to another; it isn't as if there is a smooth, 20-frames-per-second movie playing in your mind (except for very recent memories).

Comment [A125]: Intellect recalls something as having occurred at a specific point in time; only the Imagination can help recall it as happening in an ongoing way, as it was first experienced. For instance, some memory might have a specific date: "Oh yeah, that happened on July 4th, 2004." However, it wouldn't be known by the Intellect as something ongoing in real-time, like a film-strip. In order to remember something like that, you'd have to recall all the details of what happened, and then in what order each of the details happened, and then you'd have to try to 'rev' up your Imagination to morph one recalled image into the next. Obviously here, the changing time-component is contributed by Imagination, and not by Intellect. Rather, Intellect only goes so far as remembering *what* happened, in the (top-down) order of importance; the Imagination must be used to reconstruct it chronologically (horizontally).

Comment [A126]: After all every machine that effectively does what we want it to do, is operating correctly merely because it follows the patterns that once existed in somebody's mind.

in its commanding forcefulness, in its logical deductions (as we shall see when we manipulate three-line syllogisms in Chapter 7), in its hypothetical uncertainty (as we shall see when we do If-then syllogisms and conditional statements), etc. In fact the whole civilized world as we know it is a product of various minds. Thus since Intellect has entered into the outside world, we are free to manipulate outside objects as if they were identically the concepts within our mind.

Comment [A127]: However we should not limit ourselves to just having concepts of what we see in the outside world; after all, there are many concepts of real principles that have no outward visible manifestation. See the discussion on Positivism, in the Glossary.

Comment [A128]: The moment that a person thinks up an idea, that idea exists, and will exist forever. Many such ideas are found in nature, and these have to be considered to have been thought up by God (and/or His angels through whom He works). After all since God foreknows everything that will ever come to be, in a certain sense all such ideas have already existed from all eternity, even the ones that we think we're thinking up right now. We create them inasmuch as we combine its component concepts so as to come up with a 'new' concept, but God always knew from all eternity that somebody *could* think up such a thing, that such a thing was a possible existent (Recall that possibility—though low—is already a minute level/mode of being: It isn't absolutely *nothing*.), and so in a certain sense we did not create it, but just discovered it.

Questions:

1. a. What does the word "Ideal" mean? Ans: Existing only as an idea.
   b. If something is ideal, is it unreal? Ans: No. Existence as an idea is a true form of existence.
   c. Does 'ideal' mean 'the best_____' or 'simply _____'? Give an example. Ans: 'Ideal' means 'simply _____' (i.e. no more and no less). The "ideal pie" means not the best pie, but the generic *essence* of pie-ness, as it exists in the mind.
2. In abstraction do you go from the ideal to the real, or vice versa? Ans: No, you go from the real to something ideal: the universal concept of _____.
3. In Diagram 3.23, label one of the circles as "the real ball" and the other as "the ideal ball." How do these two relate to one another? Ans: The blue circle would be the real ball; the clear circle would be the ideal ball. The two relate to each other by a connection of "thatness" or "whatness," namely, that the real one can be called "*that* [kind of thing]," referring to the ideal one.
4. Do intellectual values have place or time themselves, or only the real-world events which they represent? Ans: No, they do not themselves, but are eternal; however the thing of which they are an intellectual value may have place, time, etc.
5. Does the science of Geometry exist fundamentally in the Imagination or in rationality? Ans: In Rationality. That said, even though Geometry is made perfect by the Reason, the materials that Geometry has to work with (e.g. a 3D coordinate system) may be imagined, especially since they are given to us by—i.e. inherent parts of—our physical universe. After all, there are other conceivable coordinate systems (e.g. 5D coordinates or polar/imaginary coordinates), which are rational and follow their own laws. Thus the inputs/givens of Geometry may have something to do with the physical universe and the 3D structure in which we find ourselves.
6. Give an example of how the Intellect's commanding forcefulness can enter into the outside world. Ans: In a stop-sign, which by its very octagonal shape and red color signifies that one should stop, even if the word itself isn't written on it.

3. The Problem of Subjectivity

One major debate in philosophical history is how to explain the fact that the senses can be deceiving. Different persons can have different ideas about the same event. This has led some people (originally Rene Descartes) to posit a *disconnect* between the mind and the outer world, some saying that the only things that exist are outer, real, material things (the schools of Materialism, Empiricism, and Positivism), and others saying that the only things that possess true existence are inner, ideal things in the mind (the schools of Idealism and Rationalism). The roots of this debate extend all the way back to the debate between Plato and Aristotle. Plato first proposed that the realm of the Forms (known as Platonic Forms, see Glossary) was the only thing that existed, and that physical reality was constantly changing, illusory, and thus unknowable.[59] Aristotle tended, instead, to err on the side of matter, as if the only true forms that surely existed were forms that now had or had once had some sort of material expression. Thus Aristotle held that the senses were eminently reliable.[60]

The problem of subjectivity can be solved by showing that the Senses are is in fact reliable. Even when two individuals have different ideas about something, both of them are each correct, at least in their own respects. If one person sees a horse in a cloud, and another sees a table, yet there is a real resemblance of the seen thing to horse-ness; and there is a different, but also real resemblance of the seen thing to table-ness. The fact that one person keys into one and another into the other only indicates what they are each disposed to instinctively recognize *first* or *most*; it doesn't indicate that that is the only concept that can be drawn from (or apprehended in) the event. After all, multiple concepts can exist in the same single thing: 'Animal' and 'equine' and 'fast' can all exist simultaneously in the same horse. Thus each person instinctively recognizes a real concept that is really there, and each of their Instincts are correct in that respect.

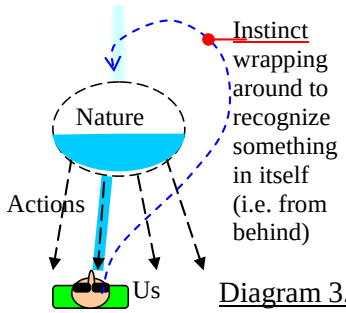


Diagram 3.25

A nature is the source of a thing's actions. If we experience a certain kind of action, then we can be sure that some-thing of that nature was there present.

Comment [A129]: One observer says "that's a horse;" another observer who is nearby and blind-folded says "that's sounded like a galloping animal;' the last observer, who is very far away and cannot make out what it is says "my, that thing's fast."

Questions:

1. What is the problem of subjectivity? Ans: The problem of subjectivity is how to be objective, and not get caught wrongly assuming that one's own limited perspective is the objectively right and best one.
2. Between Senses and Instinct, which can be wrong, and which cannot be wrong? What does this say about what *kind* of a mistake one can make? Ans: Senses can be wrong, but Instinct cannot. Thus one can be mistaken about the (material) circumstances (e.g. was it really there or was it a 'smoke-and-mirrors' illusion), seen by the Senses; but one cannot be mistaken about the substance or nature of the forms that were present, and these were recognized by the

[59] Cf. Plato, *Republic*, 508d, 534a. Cf. Parmenides, *The Way of Truth*, 8:41.
[60] Aristotle, *De Anima*, III:3 (428b18-24). Cf. Aquinas, *Summa*, I.85.6.c.

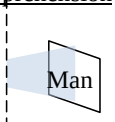
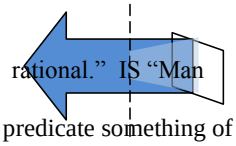
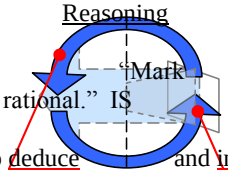
Instinct (i.e. that *something* of that concept was there, cf. Diagram 3.25).

3. Given the following situations, explain how or in what sense the erroneous person is really partially correct:
   a. A person frowns, and another person, seeing this, mistakenly thinks "Oh, I offended him," when really the first person is frowning at someone far away, in the background. Ans: The mistaken person is really right *that* there is a situation of evil present. The person is just mistaken about one of the circumstances, that is, just *where* the evil lies.
   b. Someone you've never seen before walks up to you, and says "Are you Jill, from high school?" (but you're not). Ans: The person was incorrect that you are Jill, but was correct that you somehow resemble Jill. Thus although the person's guess was incorrect, yet it was natural—and correct—for them to question you in the way they did, since there was certainly some 'Jill-ness' there.
   c. A child jumps on the bed, joins his hands above his head and bellows "I'm the best bouncer, in the whole world!" His sister walks into the room and says "No you're not." Ans: The child is the best in his/her mind, in which he is pretending that either the world is really small, or everybody else who is competing is pretty bad at bouncing (at least, worse than him).
   d. You go to a magic show, and a rabbit gets pulled out of a hat. Ans: The rabbit coming out of the hat, really does look like a rabbit coming out of a hat. However the suggestion implied by this fact, namely, that it must have been created *poof* out of thin-air inside the hat, would be false.
4. Circle the correct answer: A person is infallibly right (that/how) something is the case. Ans: A person is infallibly right *that* something is the case (at least in some respect), although the respect or circumstances in which it is the case, may be exceedingly closed-minded and subjective.
5. Explain: If a person wants to dwell on seeing something in one particular way, should you tell them that they're wrong, or should you do something else instead? Ans: No—because in the respect in which they're seeing it, they're probably right. Instead, you should try to 'expand their horizons' and make them admit that *although they are right* in that respect, yet there are also other respects or legitimate ways in which to see it, and maybe one of them is even more objective—more comprehensive and explanatory—than the way that they were accustomed to see it before.

Chapter V. The 1st Act of the Intellect: Apprehension

There are three classical Acts of the Intellect: Apprehension, Judgment, and Reasoning. The products of these three acts (concepts, propositions, and arguments) respectively give us the Logic of Terms, the Logic of Propositions, and the Logic of Syllogisms.

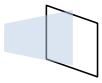
Diagram 3.26

The 1st Act of the Intellect: Apprehension	The 2nd Act of the Intellect: Judgment	The 3rd Act of the Intellect: Reasoning
		
To understand a concept.	To predicate something of some concept.	To deduce and induce new truths regarding that concept.

Apprehension (understanding of a simple concept[61]) can arise from all three levels, Judgments occur in two levels (rational and sensate), and reasoning occurs purely at the rational level. In the next three chapters, we will study these three acts, culminating in the act of reasoning which demonstrates intellectual activity at its finest.

It should be noted in this chapter that we will regularly use language as a key indicator of rational activity. Language itself is sensate (cf. Diagram 3.20); however, each of its elements (subject, copula, predicate) accompany (by overlapping) some discreet act of the Intellect, and so it can 'reflect' or 'signal'—at its lower level—what the Intellect is actually doing at that point, up at the higher rational level.

1. The Basis for Apprehension



This process of recognizing an intellectual concept in a physical or sensate or rational situation is known as apprehension.[62] Apprehension is the first of the three classical acts of the Intellect. True apprehension is something that humans do, not animals. Although an animal may in-a-manner of speaking 'apprehend' some fact through its senses, it doesn't apprehend it *as a fact*, but only as a sensate situation. A human being, however, recognizes a thing *as a fact*, with separate and internally united Being, and this true apprehension occurs fully on the rational level, even though it uses sensate data (Recall Section 3.2.2 on the Agent Intellect). Since apprehension is similar (if not identical) to conceiving concepts, we will first study conceiving concepts.

Comment [A130]: We can apprehend a concept in a physical thing, or in a sensate thing, or even in a rational thing.
Similarly, plants, animals, and humans all apprehend: Plants apprehend sunlight, animals apprehend sense-stimuli, and humans apprehend concepts/ideas/truths.

Comment [A131]: A human can make a judgment (e.g. "Joe is my brother") or an animal can make a judgment (e.g. "[Sensed vision of an intruder] . . . [bark, bark, bark]!")

Comment [A132]: However, in a way, reasoning can be performed purely at the physical level, when the rational is bent over into the spiritual mindset, so that reasoning occurs by the manipulation of physical things rather than the concepts which they represent (Recall Diagram 3.24). This is how the abacus and other computers work (Computers electrically manipulate thousands of switches—transistors—turning them off or on).

Comment [A133]: The copula is the word "Is," which 'copulates' or connects the subject-term to the predicate-term.

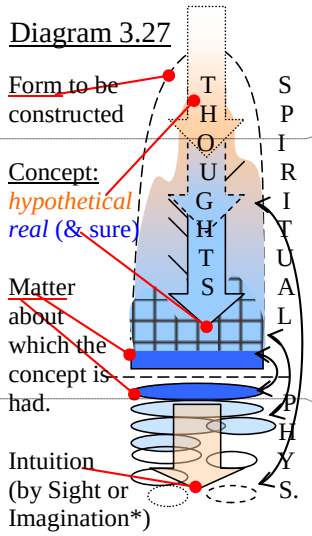
Comment [A134]: The difference between a fact and a sensate situation is that the sensate situation is ongoing, whereas the fact is complete in itself, and doesn't get swept away by the flow of time. The fact is form; the sensate situation is also matter.

Comment [A135]: Really, conceiving concepts is the real first act of the Intellect, since it is most equivalent to the first act of the Will—Love.

[61] Aquinas, *Summa*, I.79.8.c.
[62] Aristotle, *Analytica Posteriora*, II:8 (93a19); *De Anima*, II:5 (417b22-23). Aquinas, *Summa*, I.85.5.c.

Intuition and the Conceiving of Concepts

Diagram 3.27



**In the physical mindset.*

A concept is something that one conceives. The word "conceive" signifies to connect one or several things together, according to some essential likenesses that they bear to one another. In common usage, a woman is said to "conceive" a child at fertilization when the parents' two gamete cells unite, and also at implantation, when the woman re-*ceives* the child's life in union *with* her own life. At this latter moment, since some of the child's DNA comes from the mother, there is a real identical likeness or formal connection between her and it, and so it is able to attach to the wall of the uterus according to that likeness of form (of DNA). In the same way, when we conceive a concept, we receive its life (its form) in connection with some matter (some issue), and we 'let it stick,' thereby permanently informing that matter. A concept itself is an accumulation of such forms—all part of a general form—in regard to a thing (the original matter), while preserving that form's unity of substance (Cf. Diagram 3.27). For instance, if I see lots of videos of sheep frolicking, and how they sound, and their life-cycle, and what they do, and how they're sheared, I can start to develop a concept of what a sheep is. What is it? It is a wool-producer, it is a "baa"-er, it is 4-legged, and it is an animal. Here, this is not a layering of images, so much as a layering of ideas: The "baa" is what it does (lower); the wool is what it's for (higher); and what it is, is a farm-animal, an animal, a thing, etc. Each of these are parts of the concept that get formally merged into one another, and thus tied together.

How do we conceive? When one conceives an idea within oneself, one has a 'matter'—often supplied by the senses—about which one is concerned, and then one 'thinks' forms *at* that matter which somehow relate and connect to that material. For example, one may think forms such as "useless," "green," "absolutely insulting," "belongs to ____," etc. Ideally, though, one who has a trained mind tries to think not accidental, but rather essential forms at that matter. One does this by putting it in a certain class, sub-class, species, and sub-species. Thus one will search to see if it is an animal, or a plant, and if so, of what sort. Thus a person with a trained mind, thinks forms at it such as "I've seen this before . . . what was it?" "Oh yes, it's a tool of some sort; . . . it's a wrench, I think; . . . it's a ceramic one [i.e. for use around electricity]; . . . and I see that it has a special bend in it [i.e. for use around corners]." In the same way, one who is inventing such a thing goes through the same top-down thought-processes: "For this job, I need to mill a special tool, a wrench of some sort . . . It should have characteristics A, B, and C. . . ." Here one is conceiving lower matters adjacent to a higher matter. The process of looking deeply into the interior of something (real or hypothetical), so as to see or imagine first its most general essential characteristics, and then characteristics that are more and more specific to its essence is called intuition (From Lat. from *in* + *tueri*, "to look into, although Aristotle just calls it νους, or

Comment [A136]: One can also conceive things according to an accidental likeness. Aristotle, *Analytica Posteriora*, II:8 (93a22). For example, I might apprehend that the butterfly is brown and orange, and that it flutters in weird loops, and that I *like* it. In such case, my concept is a mere brain-storm or scatter-plot of horizontally and disparately connected (accidental) relations. However, we here ignore this kind of apprehension because it is inferior to, and in fact just a preliminary stage toward the apprehension of a thing's essential nature. This latter kind of apprehension is called as intuition in II:19 (100b8f), and is much more important because it is the basis for scientific knowledge, which we will study in Ch. 8.

Comment [A137]: Of course, this isn't a perfect likeness, for half of the child's DNA comes from the father instead;

Comment [A138]: We regularly do this much for our children when we read them stories about sheep, and make sheep sounds, etc.

Comment [A139]: Layering of images happens in the imagination, according to some visual formal likeness that each of the images have to one another. Here, it is according to some known likeness that they have to one another.

Comment [A140]: In Diagram 3.27, the direction of thinking would be downward. (However as one thinks more and more things downward, they slowly accumulate upward, as shown by the arrow)

Comment [A141]: Prejudice often has much to do about what sort of a concept a person has of something. If a person associates the idea of contradiction or correction with the idea "insulting [to me]," then it will be extremely difficult to correct or teach them anything. The same can happen when people associate certain concepts with an entire race (e.g. "If you're Japanese then you must be a math whiz;" "If you're a Republican, then you must be intransigent;" "If you're a Democrat then you must be overly-idealistic;" etc.)

Comment [A142]: The thing's ceramic-ness, or white color might be seen first, but it isn't recognized to be what it is until it is recognized to be a tool. Thus the ceramic-ness may be seen first, but the tool-ness is thought first.

Comment [A143]: However, all of these matters (flat ovals in Diagram 3.27) are part of the form of the thing.

Comment [A144]: This is pronounced "Nous."

"mind"[63]). In all situations, one should always strive to think forms that are rigorously *true* of the matter in question. In so doing, one will develop concepts that are much better (and more useful for living), than those who are swayed by passion, and think merely what pleases them.

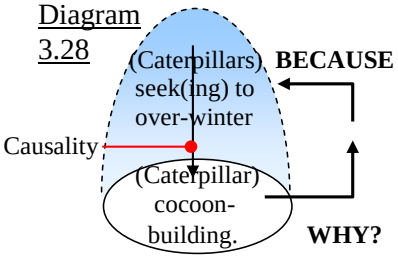
However, not all humans are as careful and scientific as they should be. For many humans, Creativity plays the major role, rather than Truth. Rather than using Sight and Intuition, to investigate how the object truly is, people often use the Imagination to simply picture whatever it is they opine to (probably) be correct. In this situation, the person usually imagines the details first (not checking to see whether those details come from above), and takes for granted the higher generalities, which those details presuppose. In this situation the concept is generated ready-made, from the bottom-up (in the order of time), rather than from the top-down (in the order of logic/Being/formal causality), and it is an instance of opinion, rather than true knowledge.

Relying largely on Imagination in this way, the conceiving of concepts is a function of one's lower reason, and thus goes on almost sub-consciously.[64] The lower reason is as-it-were a low-down, small-scale thinking machine (probably assisted by brain activity) that constantly churns out words, pictures, and new ideas within one's mind as one is mulling over puzzling matters or questions. In the lower reason, one often presents a variety of possible explanations for something (see Section 3.8.3 on hypotheses and theses), simply by 'throwing them at it.' Many of these don't stick, and simply pass away. However, some of them do truthfully 'stick,' and it is these that we regard as correct, and let stand, leaving them upon the matter, and thereby *taking them for granted*. We then proceed to think more thoughts about the matter, casting and attempting to mold these new thoughts not just into the matter but into the matter-form composite that now describes the way we view the situation. Proceeding in this way we can construct a very complex concept, involving many interrelated ideas.

Learning and Understanding

In the exact same manner as we conceive simple concepts, we can also learn complex truths and even whole sciences.[65] Whereas in concepts, the Intellect throws various words at the matter at hand, with some of them sticking and some of them not, so also in Learning the Intellect casts various explanations (*rationes*) at some truth. For instance, if I know that caterpillars spin cocoons, I may treat this entire sentence as 'matter,' and seek to know why they do this. From here I will throw various explanations at it until one or several of them 'stick.' Once they stick, I have constructed—not a concept, but—an *understanding* of the complex reasons behind caterpillar behavior. An understanding involves one entire statement informing another: E.g. "Caterpillars seek to over-winter, . . . therefore . . . Caterpillars build cocoons."

Diagram 3.28



[63] Aristotle, *Analytica Posteriora*, II:19 (100b8f).
[64] Aquinas, *Summa*, I-II.15.4.ad1.
[65] Aquinas says that to understand is the same thing as to apprehend: *Summa*, I.79.8.c.

Comment [A145]: as in 'more robust,' 'more complete' and more 'generally applicable.'

Comment [A146]: The lower details are pictured first in the order of time; the presumed higher generalities which those details implicitly require are thought of only later in the order of time, even though their being is really prior (in causality) to the details' being.

Comment [A147]: If it rigorously relied instead on rationality and logic, it would be a function of one's higher reason.

Comment [A148]: Accordingly then, one often has lots of 'contingent or temporary' concepts, that were just created for brainstorming purposes.

Comment [A149]: The 'throwing them [words] at it' up at the rational level occurs simultaneously with (and even *by*) the Imagination's slipping in new visual guesses down at the sensate level.

Comment [A150]: When you leave a concept "upon" some matter, its form gets in the way of seeing that matter, and it is like you are viewing the matter through rose-colored glasses (with the rose coloring being whatever you are thinking about it).

Comment [A151]: The more that material thoughts are united into the original matter-to-be-considered (i.e. the more that various matters get stacked up and united into one big concept), the more one's concept becomes not a matter to be thought about, but a complex *form*.

Comment [A152]: Explanation of "Throwing: " We 'throw' the supposed explanation in a downward manner (see black downward arrow in Diagram 3.28) so that the explanation's being is superimposed upon the resultant fact's being. When we can clearly 'see' (know) the resultant fact *through* the explanation, then the explanation is at that moment "sticking" or 'consisting' with the resultant fact, bound to it by a relationship of Truth.

Comment [A153]: To treat it as matter, I foreshorten or 'smush' it, so that instead of being extended out vertically it is now flat and horizontal. We do the same thing when we make a participle: Instead of thinking some statement extended out vertically (e.g. "The boy walks"), we turn the whole thing into a flat adjective ("the boy walking" or "the walking boy"). The fact that we regularly do this, shows us that our Intellect can treat any form as matter.

Comment [A154]: Even though concepts are technically of simple things (simple essences), and understandings are of complex statements (involving the word "Is"), nevertheless the words "concept" and "understanding" are often used interchangeably: Sometimes a person will say "I understand your sorrow" (What they really mean is "I understand *why you have* (or your *reason* for) sorrow.") or "I understand justice;" whereas at other times a person will say "I have no concept of what you are saying" or "I can't conceive of why you did that." (They should say "I don't *understand* why you did that").

Here seeking to over-winter is the ratio or *reason* for their cocoon-building.

Now an understanding can become higher-order as it incorporates more and more relationships into its structure. If I know something, and the *reason* for that, and the reason for *that*, and the reason for *that*, my understanding becomes a quite complex structure. It can also involve knowledge—either explicit or implicit (see gray arrow)—of other truths besides the one that I am currently considering. Thus an understanding can be as great and as involved as there are things to know. It is said that "God's understand has no limits (Ps. 147:5)."

Proper Vocabulary Usage: A *ratio*, translated from Latin as "reason" or "account," is the higher explanation that one seeks to give for something.

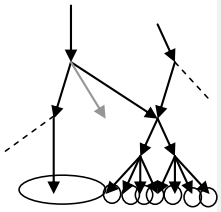


Diagram 3.29

Understanding reaches its final perfection in complete sciences known by epistematic knowledge. This will be covered later in Section 3.8.2.

Questions:

1. Fill in the Chart:

Act of the Intellect	Product	Kind of Logic
1. Apprehension	1. Concept	1. Logic of Terms
2. Judgment	2. Proposition	2. Logic of Propositions
3. Reasoning	3. Argument	3. Logic of Syllogisms

2. Explain: Why is understanding language a key element in understanding the soul / Intellect? Ans: Language mirrors or signals what the Intellect is currently doing. There is an inherent connection between the syntactical structures of language (subject—copula—predicate) and the spiritual structure of an Intellect. The Intellect doesn't just hold words, but is itself created in a Word, and thus IS a word. Thus we have to understand language before we can understand spiritual natures, and our own spiritual nature.
3. From which of the four Transcendentals do concepts come? Ans: Unity.
4. Between intuition and creativity, which begins from the interior / intrinsic part of the object, and which begins from its outer appearance? Ans: Creativity begins from the outer appearance and guesses what is inside; intuition strains to truly behold the inside, which causes this outer appearance.
5. Give an example of a concept of a non-visible thing.
   a. Can we see images in connection with this concept?
   b. Are the images essential to the concept?
   Ans: A concept of Truth, a concept of imaginary numbers, a concept of Mercy, a concept of a government institution. Yes we often convey various parts of the concept by images (e.g. the quintessential 'true' affirmation, or an abstract image of a man speaking something "true"). However, the concept itself, though assisted by these images doesn't *depend upon* these images.

Comment [A155]: It might be tempting to think of God (and angels) as Intellects, much more powerful than ours. After all this is what many Greeks and Muslim philosophers described the first mover as being: an Intellect. Indeed God the Father may be thought of as an Intellect. However we are not created and known so much in God the Father—the eternal Intellect—as in God the Son, who is the Eternal Word. The fact that God the Son calls himself the "Word" signals to us that there is something about the nature of our reality that words and language are inherent in the very fabric and underpinnings of our creation. Just as Christ is the "Word," so anything created in him must be a 'word' also. Thus we are not created just as a mind, but as a lesser word spoken forth within the Eternal Word. Since the very fabric of our reality is composed of words, it is reasonable to expect that anything—any intellectual activity—can be described by words. Since this is the case, we may use words (and sentences) to *model* the intellectual structure of the mind, which we will do extensively in this Unit.

Comment [A156]: After all, someone can often describe something unfamiliar to you (e.g. a quantum mechanical marvel), without using images, and yet give you some sort of a general concept of it, even if you can't imagine it. For instance, suppose they define "Potency" as "Anything which circulates repeatedly." Here, you can imagine an example of potency, but you cannot foresee all the other kinds of potency which you might run into, and so the only way to remember potency is by open-ended definition, not by the particular imagination of something potent.

6. Describe how one forms a concept about something. Ans: One has a matter-at-hand to think about, and one thinks forms at it until some of them stick, and one continues to think forms at it, merging new forms into those already present. It is almost like building a house, in which one cannot build anything formal except what conforms to the shape of the foundation (the matter).
7. Fill in the blanks: Just as _____ is the conclusion of conceiving an idea, _____ is the conclusion of learning. Ans: A concept, an understanding.
8. What is the difference between the two things that you answered in the previous question? Ans: Concepts are simple and so they involve only terms; understandings are complex and thus involve statements.
9. Think: What is the difference between a thing's form as intuited in the physical realm, and the same form as thought about conceptually in the spiritual/rational realm? What is necessary to make the conversion from the first realm into the other? Ans: The physical form has accidental determinations/designations such as "*this* chair (individuality), here (place), and now (time);" the spiritual form is totally free of these, and is just the unqualified and simple idea of "chair[ness]." To make the conversion, the form as seen within the physical realm, must "take a stand" (Aristotle, *Analytica Posteriora*, II:19 100a16), and, losing its determinations of time and place, etc., attain an abstract universal timelessness. In so doing, the form ceases to be in matter, and instead becomes just the pure concept.

Comment [A157]: The whole assembly process is probably quite similar to the biological assembly of a protein, where the various secondary structures (helixes and parallel strands and corrugated zigzags) bend and merge in 3D space into a complex structure.

Comment [A158]: Certainly, a concept may still contain qualities that have to do with time (e.g. the concept of 'The Rodeo *of my fifth birthday*'). But they become internal within the concept, rather than over-riding, external factors. Thus for something to pass from the physical to the spiritual realm, its external elements (accidental determinations) must become internal, and its internal element (its essence, or what it is), must become external. After all, when calculating within the spiritual realm of the mind we compare and combine or separate things mainly based on *what* they are, not on where, when, why or how, they were.

Comment [A159]: The thing "reshined" into your soul is often not just something simple, but something understood and complex (e.g. the whole structure shown in Diagram 3.29). For instance, if someone says to me the word "economics," and I am not an economics professor, then I won't have much of a concept to shine into that word; however if I am an economics professor talking with other economists, then our use of this word will be filled with much more intellectual value and meaning.

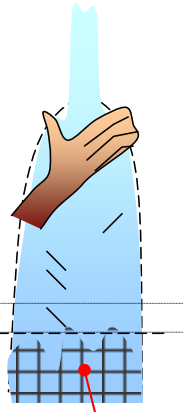
Comment [A160]: This is why, when someone is talking to us, we often look at their eyes or movements, more than their mouth. The mouth supplies the word, but the eyes and movements most bespeak the light of Reason.

Of course, if you have a slightly different (or analogical) concept of the word than the person who is using the word, then their use of the word shines primarily your own understanding into your own mind, not necessarily their understanding of it (see discussion of "equivocal"). By watching them, and considering the context of when and how they use it, you may be able to gauge how much or how little their concept of the word is like your own concept of it.

The re-shining of a form into you occurs in an essentially top-down way, even though the word that introduces it is inserted on the bottom through your own sensation (as matter—see Diagram 3.27, cf. Diagram 2.14).

2. Apprehension Itself

Diagram 3.30



Apprehension is very similar to the conceiving of concepts. In both, a kind of passion occurs, inasmuch as—while knowing something about the matter at hand—the word or form of the concept enters into you.[66] In conception, the form arises or is formulated within you by yourself, that is, by your own willful and intellectual activity; in apprehension, something bearing the form is spoken to you (e.g. a word or a sign), causing the whole understood word or concept of it to re-infuse (or be re-shined) into your mind all at once, without your willing it.

The word "apprehend" comes from the Lat. *ad* + *prehendere* which means to "take to" or "grab at." When you apprehend something, you hear a word in your nervous system, and by means of this, the concept of that word then enters into you. The entering of the concept into you occurs silently and spontaneously, and as it enters into you, it is as if the potency of your soul encloses around it and

[66] Cf. Aristotle, *De Anima*, III:4 (429a14-17ff).

'grabs' at it. This rational grabbing occurs in a vertical manner (cf. Diagram 3.30) and is completely spontaneous, but there is an analogous horizontal and sensate grabbing by which one must also 'grab' at the person's audible words, so as to imagine the appropriate phantasm that goes with each one of their words (cf. Diagram 3.20). As any second-language-learner knows, one must do this horizontal grabbing as fast as one possibly can in order to keep up with the person's rational train-of-thought.

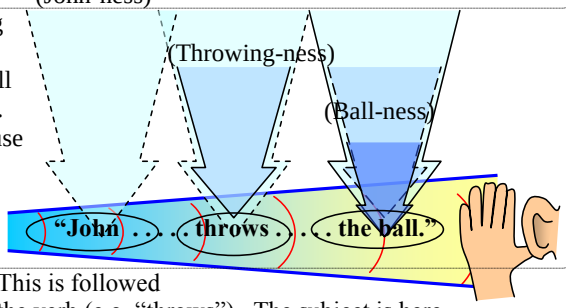
Of course this all presumes that there is a common understanding about what each word is to signify. Two words—and thus the concepts they signify—can be spoken univocally, analogically, or equivocally. Two terms are univocal when they signify exactly the same thing (e.g. "Roast the duck" and "Ducks fly"); they are analogical when their concepts are related to one another (e.g. "Roast the duck" and "We beat the ducks in Little League baseball"); they are equivocal when they have no connection whatsoever (e.g. "Roast the duck," and "If there's a wild pitch, duck!").[67]

You can also apprehend something unintended by, or even despite, the speaker's words. In apprehension you 'love' or 'embrace' the surrounding circumstances in such a way that it enables the Acts of present concepts to enter into you. For instance, if someone has something to say to you, they first get your attention. Attention is a 'tending' toward them, in both a horizontal and a vertical sense. Then, once they have your attention, they speak their mind into you. In apprehension you don't so much re-think for yourself word-for-word what they're saying (i.e. you don't 'run over' their words in your own mind), as apprehensively 'listen in' to the core of what it is that is causing them to say these things: the heart of the matter, or what they *intend* to convey. Many times people can use misleading language either because they are embarrassed to say what they really think or because they don't have the vocabulary or a proper concept of it. It is important to strive to apprehend the truth, despite the possibly misleading nature of someone's words.

Higher order apprehension.

In addition to apprehending single words, it is also possible to apprehend entire complete ideas, all at once, for example, in a sentence. The reason this is possible is because of the way our language is structured. First there is spoken the most constantly or continuously applicable word, usually the subject (e.g. "John"). This is followed by the next most applicable word, the verb (e.g. "throws"). The subject is here more applicable than the verb because the subject-idea applies to both itself and to the verb, but the verb doesn't apply to the subject: After all, it is not a random action going on, but a certain *person* doing the action. Finally there comes what is the least applicable word, here the predicate ("the ball"). The predicate is least applicable because it is

Diagram 3.31



[67] Aristotle, *Categoriae*, 1. See also the famous Analogy of Being in *Metaphysica*, IV:2 (1003a33-b10), VII:4 (1030a29-b3). Cf. Aquinas, *Summa*, I.13.5.c, I.16.6.c

Comment [A161]: This horizontal 'grasping at' and processing of their audible words is properly sensate and occurs in the nervous system (i.e. in the brain). If the brain makes a mistake and associates the wrong phantasm-image with the wrong word, one's rational conception will evolve in the wrong way and one will be seriously 'thrown off' from the idea of what they're trying to say. Thus when you learn a new (foreign) word, it must be learned perfectly, so that the associating of it to its phantasm (and concept) is instantaneous.

Comment [A162]: After all, words are often exterior and superficial, and imperfect attempts at conveying the interior of what a person is really feeling.

Comment [A163]: Again, notice that the top of Diagram 3.27 is slightly pink, because that is the willed *end* for how the person would like their own idea to evolve.

Comment [A164]: In Diagram 3.31 at right, point out to the students how the arrival of all three words is extended out in time, but the arrival of all three concepts is *simultaneous*: It is the single fact of John throwing the Ball.

Comment [A165]: This word is called the most continuously applicable because its concept applies not just to itself, into which it will infuse, but will apply also to the copula and predicate, into which it will infuse as well. When all three have infused into one another it will be a complete idea: "John throws the ball."

Comment [A166]: It isn't just an idea of *throwing* here, but an idea of *John throwing*.

Comment [A167]: By "applicable," we mean 'applicable to (multiple) other words in the sentence.'

infused simultaneously by the ideas of all three concepts (subject, verb, and predicate), but its own concept infuses only itself (since the predicate isn't doing anything, and certainly not doing anything back to the subject). Thus the word-order in sentences naturally proceeds from the most general idea to the more specific idea, and each word in the sentence narrows down (or *specifies*) the sentence, both for itself and for all the other words that follow.[68]

Comment [A168]: Thus every word that you add to a sentence, *specifies* it and 'narrows it down' a little bit more.

Questions:

1. What is the main difference between apprehension and conception?
   Ans: Conception is something that you do yourself—actively—through your own Will. Apprehension occurs spontaneously—passively—because of some signs or words that are communicated or 'shined' into you.
2. Explain what happens when you apprehend . . .
   a. just the phrase "The ball." Ans: When you apprehend "The ball," they speak the English word "ball" to you, and then in both your're mind and in the speaker's mind the concept of 'ball-ness' silently infuses into the sound of this word.
   b. the sentence "John throws the ball." Ans: Everything happens as described in (a), but there is a further ordering to it. Each word infuses into not only itself but also the words that follow, so that the grand effect, once the sentence is completed is to create a complete idea that flows into the Intellect of the listener.
3. Which of the two parts of the previous question is higher-order apprehension? Ans: Part (b).
4. Identify the following pairs of concepts as Univocal (U), Equivocal (E), or Analogical (A):
   a. 6 feet under ground; 12 inches in a foot. Ans: U.
   b. A foot plus a yard; under my foot. Ans: A (one is a length which derives from the approximate size of the other).
   c. Under my foot; at the foot of the table. Ans: A (both have to do with what is at the bottom).
   d. A foot long, at the foot of the table. Ans: E (One is a length, the other has to do with what is at the bottom).
5. Give at least two examples of . . .
   a. univocal concepts. Ans: 'George Washington' and 'the first president of the United States.'
   b. analogical concepts. Ans: Food is 'healthy' for you and a little exposure to other peoples' ways of doing things is 'healthy' for you. Or a pound of Gold and the British 'pound' (a unit of currency). Or a U.S. 'billion' and a British 'billion.'
   c. equivocal concepts. Ans: A 'pound' of gold and the dog-catcher's 'pound.'

Comment [A169]: This is why the Intellect is called the potential/passive Intellect (rather than active), cf. "Proper Vocabulary Usage" box in Section 3.2.2.

Comment [A170]: A British Billion = a million millions (10^{12}). A U.S. Billion = a thousand millions (10^{9}).

[68] Ex me. This model is my own.

6. Give an example of how it is more important to apprehend the truth of what people intend to say, than what they may actually be saying. What are some other ways that people communicate besides what they actually say? Ans: Answers may vary. For instance, if your child is always saying "I don't feel good," it may be that he/she is actually depressed about something. Other ways that people communicate are by (1) body language, (2) what they don't say or do, and (3) how often they say it.

3. Characteristics of Apprehension

Comment [A171]: This section is largely review, and may be omitted, if so desired.

It is now a good time to bring together what we know about apprehension and restate it clearly in one place.

Through the senses

Apprehension nearly always occurs in conjunction with some sense-stimuli from the physical world. Consequently, it is said that "all [natural] knowledge [originally] comes through the senses."[69] Only rarely does knowledge occur by direct intellectual means, as when a person receives infused knowledge by supernatural means (as in a locution or vision or so-called 'ESP'). In these rare cases, the truth is poured directly into the Intellect, or at least into the internal senses (Imagination, Instinct, etc.), while skipping over the five external senses.[70] However, under most circumstances all knowledge comes first through the senses.

Comment [A172]: That is, all knowledge can be traced in some way back to some fact that came through the senses. Admittedly, we can often reason further, unsensed truths from sensed knowledge (e.g. If I see the man go into the room carrying a ladder and then hear a crash, I can reason that he must have fallen.), but even here the premises from which we are reasoning were once sensate (and intellectual as well). A better restatement of this saying would be "All [natural] knowledge *is occasioned* through the senses."

After all, the senses—like the Intellect—are capacities to *receive*.[71] Even though the eyes, by their parallel conjunction, are specially designed to focus out into the external world and provide depth perception, yet it is still true that the acts of sensation and data-processing themselves occur *inside* the nervous system's organs, and largely in the brain. Once this data is received into the eyes and then taken up into the brain's activity, it is then available to be engaged by the Instinct and Intellect and thereby known for any intellectual value that it may contain.[72]

Comment [A173]: In cases of demonic possession, the Devil takes control of the person's Instinct, but can never take control of the person's Intellect, for that would violate the person's existence as a separate spiritual being. Consequently when something is put directly into the Intellect, without being elicited or requested on the part of the person, it can have been put there only by God: Only God has the right of direct access to the soul (Rev. Fr. Ludovic-Marie Barrielle, *Rules for Discerning the Spirits*, "Second Rule No. 330" (Angelus Press, Kansas City: 1992), 42.).

Comment [A174]: This is because the Intellect has been joined to this particular body, and no other. Thus the soul—of which the Intellect is the major part—is the "rational form of the body" (CCC, 365).

Now the data itself which comes through the senses, is not just sensible data—the sensible species—but carries intellectual value, which may be recognized by the one apprehending. In the case of animals, the animal can apprehend many intelligible species in the data (e.g. threats, social situations, etc.). Moreover if the data includes words or signs, humans can recognize entire concepts in the data. For instance, if I feel a burner, I immediately recognize—like animals—and say—like humans—"[It's] Hot!" As my Instinct recognizes and reacts to this, the Intellect speaks a word that parallels and 'fleshes out' the Intelligible species that the Instinct is sensing, and in so doing gives it full intellectual value. This is all part of sensing consciously (as opposed to plants which

Comment [A175]: Thus we have sayings such as "I see what you mean" (showing how closely Knowledge overlaps Sight), or "I can't imagine why" (showing how closely Imagination overlaps Understanding).

The human's intellectual species 'fleshes out' the animal's, because the human's is a true universal, whereas the animal isn't (It only knows it here and now). The human knows it "by a cognition that is immaterial, universal, and necessary" (Aquinas, *Summa*, I.84.1.c).

[69] Aristotle, *Analytica Posteriora*, I:18; II:19 (99b35-a11). Aquinas, *Summa*, I.78.4.ob4.
[70] Aquinas, *Summa*, III.9.4.c, ad2, ad3.
[71] Aristotle, *De Anima*, III:4 (429a13-17f)
[72] Cf. Aquinas' assertion that to know something, the Intellect goes primarily to the phantasms (in Sight, or in Imagination within the brain). Aquinas, *Summa*, I.84.7.c, ad2.

sense un-consciously, and animals which sense sub-consciously) . Thus we see that apprehension depends upon bare sense-data, but can be a much higher, fully rational activity.[73]

How then do we humans apprehend rational truths? When we apprehend some value or truth or concept in something, we apprehend that concept *in itself*, not as it exists in the physical realm, but in some abstract dimension of the Intellect. Cartoonists often draw the event as a light-bulb turning on, not in the vicinity of the knower but in a separate cloud up above the knower's head—i.e. in some other dimension. Certainly the sense-imagery is a necessary step of the process, but the step in which the Intellect apprehends, occurs without time or place or any accompanying accidents. In apprehension, we simply become aware of the concept (or complex Truth) and either explicitly name the concept (or say a sentence that describes it), or just implicitly act according to the understanding that we now have of it.

Accurate apprehension is the goal of all language. When a person speaks a word or sentence to you, their intention is that it should cause some sort of similar rational event to occur in your own mind. The reason it causes this is because it is just as if you yourself had said it, to yourself. We saw in Chapter 4 that beyond the natural signification that each thing bears to the concepts that created it and that helped determine it, there can also be a deliberately-caused, or artificial signification by which conventional words or signs can signal various concepts to arise in a certain order in the mind. If a person is very good at apprehending these word-concept clusters, the person will pick up the language very quickly. However if there is a time-lag between the hearing of the sound and the associating of it to its appropriate idea, the person will be very slow to understand the language. Thus any linguistic underpinnings (at the sensate level) must be completely spontaneous and natural for apprehension (at the rational level) to smoothly and efficiently occur.

Questions:

1. Explain: Does all knowledge come through the senses, or are there alternatives to apprehension? Ans: Under normal (natural) circumstances (assuming natural ESP doesn't exist), all knowledge comes through the senses. The only alternative to this is supernatural infused knowledge, as when someone experiences a locution or vision or just a sudden, silent awareness of some truth.
2. What is the position or role of sensation in the act of apprehension? Ans: It is necessary as a prerequisite or accompanying occurrence or occasion, but is not itself identical to apprehension.
3. What does the Intellect do to the intelligible species? Ans: It 'fleshes' it out.
4. Fill in the blanks: Animals apprehend intelligible species in a _____ way; whereas humans apprehend the intelligible species in a _____ way. Ans: sensate; fully-rational.
5. What advice would you give someone, seeking to learn a new language? Ans: Learn each word until you know it *spontaneously*.

Comment [A176]: cf. diagrams 3.20 and 3.31.

Comment [A177]: Here we don't mean an intellectual word, but an audible, spoken word (in some language).

Comment [A178]: This is the true essence of the Agent Intellect, that when audible language or the natural language of existence are perfectly spontaneous and natural, and perfectly accompany apprehension then, by overlapping, what happens in the sensate level, naturally overflows into and causes similar events in the rational level.

Comment [A179]: Referring to Diagram 2.25 if necessary, point out to the students that just as the sensible species is a condensed, 2D, version of the 3-Dimensionally fleshed-out body, so also an intelligible species is an abrupt, condensed, purely practical version of the fuller, fleshed-out word/concept known by the Intellect.

Comment [A180]: Alternative answers: ". . . *in another dimension*," ". . . *in itself*."

[73] Aquinas, *Summa*, I.84.6.c.final sentence; cf. I.79.8.ad3.

4. The Logic of Terms

In the previous section we learned that word-concept clusters are the heart of any language. The study of these simplest apprehendable concepts, and what is involved in apprehending them, gives us the Logic of Terms. The purpose of the Logic of Terms is to establish some basic rules, upon which we will be able to build more involved levels of logic, later. It should be noted that even though we call these "terms" (since terms are the proper material of logic), it is really concepts that we are dealing with. Consequently, we must consider a few kinds of terms.

Proper Vocabulary Usage:
The quantifier in logic is the word(s) that tells how many or how much of something there is.

The Distribution of Terms in Common Propositions:
All A (D) is B (U).
Some A (U) is B (U).
No A (D) is B (D).
Some A (U) is not B (D).

Terms can be divided up in four ways by quality and quantity. In terms of *quantity*, some terms are distributed, and other terms are undistributed.[74] A distributed term applies to all of the class in question, but an undistributed term applies to only some of the class. For instance, in the sentence "Men are rational," the term "men" refers to all men, and so it is distributed. However, in the sentence, "Men struggle and fall" the term "men" doesn't apply to all men, but only to the men here that I am thinking of. Thus in one usage my term is distributed, whereas in the other my term is undistributed. To clarify distribution, some people often use the quantifiers "all" or "some:" Thus "all men" is distributed" whereas "some men" or "those men" is undistributed.

In terms of *quality*, a term can either be positive or negative. While it is obvious what a positive term is, a thing can be negative in one of two ways. A term can be another term's contrary, or it can be another term's contradictory.[75] A contrary is that within a genus which is most opposite to another term.[76] For instance in the genus of driving, going forward and going backward would be contraries of one another. A contradictory is a simple denial of another term.[77] For instance, the contradictory of 'going' would be 'not going.' Here, do not be deceived by the word "simple." Of the two, contradiction is a much stronger opposition than contrariness.

Contradictories	Contraries
rational and *ir*rational	happiness and sadness
B and *non*-B[78]	A and Z
moral and *a*-moral	moral and immoral

[74] Cf. Aristotle, *De Interpretatione*, 7 (17b13, 18a1).
[75] Aristotle, *De Interpretatione*, 10 (20a31).
[76] Aristotle, *De Interpretatione*, 14 (23b23).
[77] Aristotle, *De Interpretatione*, 7 (17b16-19).
[78] Aristotle, *De Interpretatione*, 2 (16a30-32), 12 (21a39-b2). N.b. In the McKeon edition of *The Basic Works of Aristotle*, the standard contradictory prefix "non-" (e.g. "non-white") is instead written "not-" ("not-white").

Comment [A181]: i.e. term-concept clusters (Here we're talking about sensate and audible words, not rational words.).

Comment [A182]: It is called the Logic of Terms (rather than the Logic of Concepts) because even though we are dealing in concepts, yet it is terms by which we deal with them. Thus terms are more immediate to us, and so the field of study concerns principally them.

Comment [A183]: Thus the terminus at either end of one's attention which is generating the species—be it sensate or intelligible—is described as something enfleshed-out, conceived, and even bodily. Thus it is clear that the concept/word plays the role of something bodily in the material realm. Logic may be either true or false, or even absolutely absurd. Many times the logician is concerned only with the exterior form of the argument, and couldn't care less what terms he is using, or whether or not they really exist (Logicians often use variables such as "A," "B," "x," or "θ."). Since logic is not in itself concerned with real truth or existence, it is free to use terms (sounds) as its matter. We however are doing philosophy, which is concerned with what really is the case, and so we concern ourselves not just with the bare terms but with the real concepts that they stand for. Thus our logic will be very similar to normal logic, except that we will be thinking about the real concepts, rather than just the terms.

Comment [A184]: In regard to the box at right, tell the students that in the next chapter we will study these 4 propositions in very great detail, and so they need to memorize the distribution of the subjects and predicates right now. If desired, tell the students that the first one is an A-proposition, the second is an I-proposition, the third is an E-proposition, and the fourth is an O-proposition (cf. Diagram 3.37).

Comment [A185]: You can think of it as a simple denial of the form of the other thing, almost like taking the photographic negative of an image. Color and black-and-white are contraries, but color and its negative are contradictories.

Comment [A186]: E.g. There could be no greater opposition than the opposition between "Christ" and "Anti-Christ," but they are "simple" denials of one another.

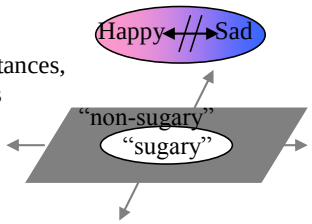
Comment [A187]: Adding the prefix "Non-" is the most standard and sure way of making a contradictory.

Comment [A188]: "A-moral" means 'non-moral' or 'having nothing-to-do with morals' (i.e. neither good, nor bad, but neutral). "Immoral" means 'against morality (i.e. 'bad.')

Between themselves, contradictories exhaust the whole realm of Being. Thus anything in the whole world that is classifiable can be put into at least one of any two contradictories. Thus if two contradictories are predicated (or 'said') of something, one must necessarily be true, and the other must necessarily be false.[79]

Lastly—and though this has to do more with judgments (the next Chapter)—some terms are subjects and some terms are predicates. Subject-terms always stand for substances, and predicate-terms usually stand for qualities within those substances, although this is not always the case, as when the predicate is also a substance (e.g. technically "Birds are animals" involves two substances, whereas "Birds are animal" involves a substance and a quality).[80]

Diagram 3.32



Questions:

1. What is the relationship between terms and concepts? Ans: Terms signify concepts. In particular, each term refers to only one concept.
2. Determine whether the following are contraries or contradictories:
   a. Right and left. Ans: Contraries.
   b. Moral and amoral. Ans: Contradictories.
   c. Mortal and immortal. Ans: Contradictories.
   d. Basque and non-Basque. Ans: Contradictories.
   e. Dorsal and ventral Ans: Contraries.
   f. Equal and unequal. Ans: Contradictories.
   g. Patient and impatient Ans: Contradictories.
   h. Red and non-red. Ans: Contradictories.
   i. Positive and negative. Ans: Contraries (zero is neither).
3. Explain in your own words: What is the purpose of distributedness? Ans: To precisely define in our language exactly how much of the concept (all or only some of it) the given term is really talking about.
4. Given the following sentences, determine the distribution of the subject-term and also the distribution of the predicate-term.
   a. "Those boys are human beings." Ans: U / U.
   b. "Nobody loves me [is loving me]." Ans: D / D.
   c. "Some cats are not Siamese[s]." Ans: U / D.
   d. "All the rowers stood up." Ans: D / U.
5. Why do you think that contradiction is a much stronger opposition than contrariness? Ans: Because contradiction doesn't occur within any limited genus, but occurs infinitely, in the realm of 'All Being.' Note the 'spreading out' in the lower half of Diagram 3.32.

Comment [A189]: Usually the thing classified will fall into the contradictory beginning "non-."

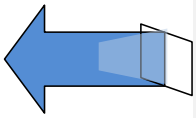
Comment [A190]: To get even more precise, two terms can refer to the same concept, but two separate concepts cannot be signified by the same term.

Comment [A191]: In other words none of this class—people—is among that class—those loving me. The only way you can be sure that not a single one of this class belongs to that class, and not a single one of that class belongs to this class, is if both groups are distributed.

Comment [A192]: After all, there may be other people standing up, besides the rowers. Technically you would phrase this "All the rowers were among those standing up."

[79] Aristotle, *De Interpretatione*, 9 (18a28-32).
[80] Aristotle, *Analytica Posteriora*, I:4 (73b5-9); *Metaphysica*, VII:4 (1030a10-20), 1034a30. That predicate terms usually stand for qualities can be seen by Aristotle's use of the opposed terms "attribute" (An attribute is usually a quality.) versus "subject." E.g. *Metaphysica*, VII:5 (1030b23).

Chapter VI. The 2nd Act of the Intellect: the Judgment



The second classical act of the Intellect is the *judgment*. The judgment is a complex (not simple) act of the Intellect. It requires that two separate concepts must first be individually known, and then that they be connected or separated in some way, usually by the copula "Is" or "Is not."[81] Judgments occur not just in silent reasoning but often through sensate, and audible words. Consequently the judgment is the expression of reason projected down into the sensate level.[82] However, as the Reason's pure act of knowledge (which we studied in section 3.4.1) is projected into the sensate and expressed as a judgment, it nevertheless often holds much of the same structure as the act of reason/knowledge from whence it came. Consequently, we will carefully study the grammar of various kinds of judgments in order to gain some understanding of the hidden and silent structures of rational knowledge.

Comment [A193]: For a judgment to be simple, it would have to just be straight knowledge, that is *knowing* one thing in another, or *seeing* one thing in/through another. Knowledge (in the mind) is equivalent to the judgment in words; however owing to the clumsiness of words, the pure and simple, flowing knowledge that we have (i.e. knowing 'subject-as-predicate-ish'), must be chopped up and individually expressed in three distinct parts (subject, copula, and predicate). This is why judgments must be complex.

Comment [A194]: Recall from the Introduction to Chapter 5 how Apprehension occurs at any of the three layers, the Judgment involves the top two layers, and Reasoning involves only the top layer.

We will see in Vol. II on Theology how the fact that the judgment uses the top two layers explains why the commandment to not bear false witness (lying, as speech contrary to thought) also concerns the top two layers.

1. Predication

In our time-bound world, we can only create words in a time-bound way. We cannot speak instantaneously and effectively so as to permanently change the inherent constituents of our nature, as angels can. Thus, for us to speak an act of truth, it has to occur in a dual rational-sensate way. This kind of mental activity which involves both levels—one audible and one silent—is known as predication. When we predicate we use a spoken word, spoken either inside of our sensate brains, or spoken outside to the sensate world. Thus Aristotle says that "Spoken words are symbols of mental experience."[83]

Comment [A195]: From the Lat. for "speaking in front of:" When you predicate (verb), you place some predicate (noun) in front of some subject, so that henceforth that subject will be viewed through the context of that predicate.

However, predication is more than just audibly speaking a word. To predicate means to speak "in front of" (from the Lat. prefix *pre-*). Now normally when we speak, the words we speak come *after* the ones that preceded: Copula comes after subject, and predicate is spoken after the copula. Thus to speak 'in front of' must have a special meaning, and it does: To predicate means to speak in an existential way, *revising*, or *modifying* what came before.[84] This is the true meaning of "to speak in front of." It is as if the last thing we say—the predicate—gets spoken 'in front of' the subject, so that the subject cannot be imagined or conceived of by the hearer except through the context of the predicate. As can be seen from diagrams 3.31 and 3.33-3.34, this revisionist speaking 'in front of' is best represented vertically, because it is an existential kind of in-front-of-ness, not a chronological (i.e. horizontal) kind of in-front-of-ness.

Comment [A196]: Visually, you would picture it as vertically below the subject, with the perceiver/understander gazing up into the two (first the predicate, then behind it the subject) from below. Cf. Diagram 3.31.

Comment [A197]: It is as if looking at the subject involves necessarily looking *through* a colored piece of glass (i.e. the predicate) in order to see it.

Comment [A198]: In diagrams 3.31 or 3.34 imagine that the speaker is at the top, and the listener at the bottom. Then as each concept gets produced lower and lower down, the listener has to view the prior concepts (higher in the diagram) *through* the later concepts (lower in the diagram).

[81] Aristotle, *De Interpretatione*, 1 (16a11).
[82] Aristotle, *De Interpretatione*, 14 (24b1-2, 23a31f).
[83] Aristotle, *De Interpretatione*, 1 (16a3).
[84] Ex me. This understanding of "predication is my own idea; however cf. the use of "modifications" in Aristotle, *Metaphysica*, VII:13 (1038b24-28).

Animal predication

Animals can audibly project sounds and feelings, but they cannot predicate (in its full sense) because they have no sense of complex signification. Predication presupposes that you know what each of the terms you are predicating signifies *and how they simultaneously relate* to one another. An animal has no such awareness, and so although an animal can produce sounds to signify something, the sounds are as-it-were 'in pieces,' and not linked together in any way.

Comment [A199]: In other words, animals do not have an instantaneous *now*) flashlight shining up into the rational realm or an ability to extrapolate a form *ad infinitum* (see diagrams 3.34 and 2.21, respectively).

Animals have no sense of signification because they don't have an instantaneous, eternal mind. This means that the three (or more) intelligible species for the separate words in a sentence (represented by the three vertical arrows in Diagram 3.31) never arrive "simultaneously" for them; they just don't think to 'stack up' or superimpose concepts, like that.

The word "To be"

When a person predicates, the first thing they predicate is Being: "The dog *is*...." To predicate Being means that you grasp what it means to be, and to not be, and also to come to be (to '*be*-come'). The word "to be" is unique because it freely adopts the determinations of its subjects and predicates without inhibiting or limiting them in any way. Thus in the sentence "The light is," the word "is" has as much meaning and value as the word "light" permits it. After all we're not talking about 'dark-being' or 'car-being,' etc., but only about the 'light-being.' Thus the word "light" *limits* the word "is" in this situation as an essence limits the existence that is filling it (cf. Diagram 1.11). In the sentence "The light is yellow," the word "is" now has only as much meaning and value as both the words "light" and "yellow" permit it: First it is limited by the word "light" to light-being, and then it is qualified to just being "yellow." Thus in most sentences, the word "is" is limited from both directions, both by its source (It comes from the subject-word "Light") and in its terminus (it goes to the predicate-word "yellow"). Thus every word that you add to the word "is" limits it in some way.

We see then that Being (indicated by the word "to be") is absolutely free, and malleable, and determinable. To have a word "be" which is capable of receiving any and all qualities and/or existents (right on up to the ultimate existent, God[85]) means that Being can be indeterminate, before it has been specified just which being(s) we are talking about. The job of predication, then, is—by means of this powerful word 'to be'—to determine the subject's Being in some definite and yet truthful way so that we may know more about it.

Predication in use

To predicate means to speak a predicate about something (some subject).[86] Thus a functional synonym for "predicating" is "saying." When you predicate (i.e. the verb, pronounced "preh-deh-KÁTE"), you say some predicate (the noun, pronounced "préh-di-khet") about a subject. As already stated the predicate can just be the word "is," or it can be "is [something]." We can say that "____ is 8" and here we are *predicating 8 of something*, or saying that the idea of '8-ness' applies to that subject. Alternatively, we can say "8 is ____" and then we are predicating something else of the number 8.

It is important to note that the verb "is" does not function like the equals (=) sign in math. In math, because of the Commutative Property of Equals, different sides of an

[85] This is the famous "Analogy of Being." Cf. 2nd Footnote in Section 3.5.2.
[86] Aristotle, *Analytica Posteriora*, I:22 (83b18-19).

equation can be flip-flopped without loss of truth-value (e.g. 5+3=8 is the same as 8=5+3). However, the same cannot always be done with the word "is." The word "is" is often inherently directional.[87] The predicate always comes after the word "is," never before. If you switch subject and predicate you may actually have a slightly different sentence than the one you started with. For example, if I say "Robins are birds," nobody will doubt the truth of my sentence; but if I say "Birds are robins," the statement might be false (e.g. if these birds are blue-jays). Thus an essential part of a sentence is the direction of predication: what is predicated of what (and not vice-versa).

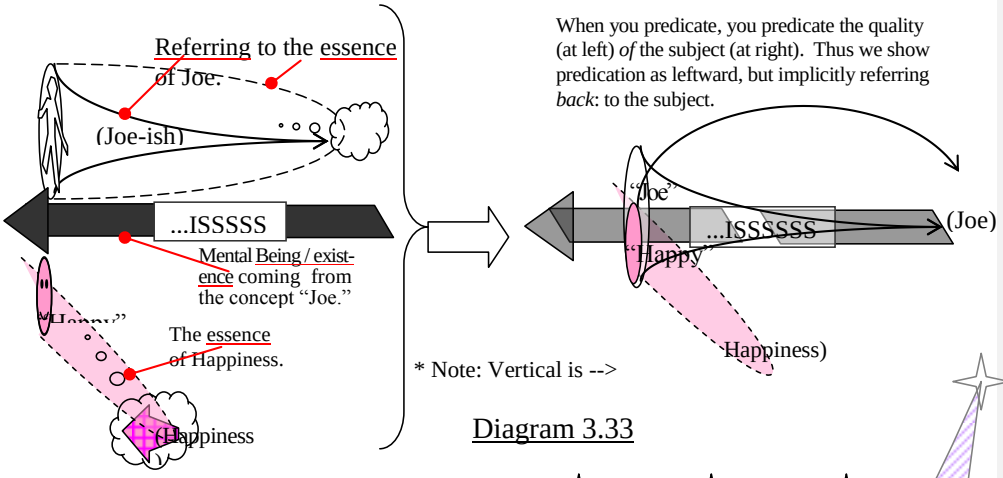


Diagram 3.33

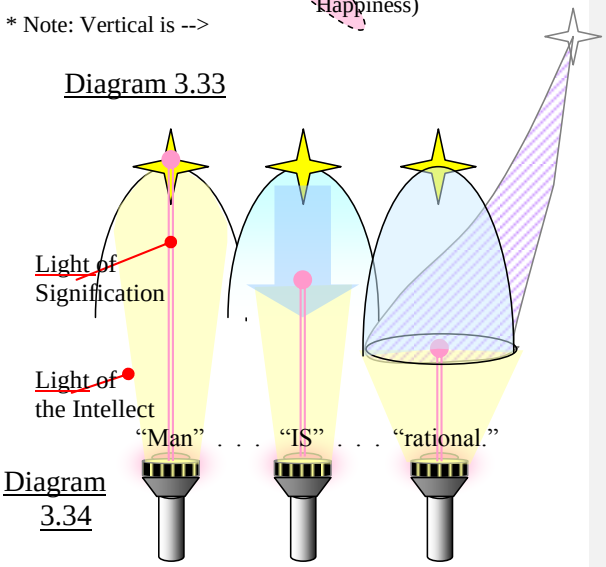


Diagram 3.34

In Diagram 3.34 we have a schematic model of predication in which a laser-pointer/ flashlight shows how a sentence signifies. Take the sentence, "Man . . . is . . . rational." What 'is-ing' are we talking about and signifying? We are signifying the 'is-ing' of (hu)man-ness. What is the 'is-ing' of human-ness? It is the *being* that comes from the idea/form of humanness (the star at the top) and infuses down into "man"/all men. Now let's look at the predicate of the sentence. What do we mean/signify by "rational?" We mean a certain form or quality that comes from the idea of rationality (the purple star) and, in this case, also happens to be infusing into "man"/those same men. Thus the unity of substance about which all three words are speaking, provides solid context, while the

Comment [A200]: Qualification: In itself, the word "is" is usually not taken to be directional, since it usually merely implies just the combination of being with being. However, in the rare act of categorizing (to be covered in Section 2)—when you start with what should be the predicate and go directly up its essence, ending with a solid substance that should be the subject—(e.g. saying "Robins ***are*** birds"), you are affirming the word "is" with an extra forcefulness that is not commonly used. Here the word "is" definitely is directional since it is going straight 'up' the essence (cf. "Essentially is" in Diagram 1.10). Conversely, to merely *predicate*, you'd say "Robins are bird-*ish* [a quality]," and then and only then is it non-directional (or loosely downwardly directional). The problem here is that categorization is a special use of predication, and many times it is thought that one is categorizing, when really one is just generally predicating: Thus predicating "birds are robins" is perfectly true as a general, abstract statement (since some birds—perhaps *these* birds!—really are robins), but it would be false as a categorization.

Comment [A201]: This is one of the proofs that predication is vertical, and not horizontal. If it were commutable, it would function like matter and be horizontal; but since it is inherently directional, the only direction for it to go is *down* (or in the rare case of categorization, *up*).

[87] Gottlob Frege, "On Sense and Raeference," trans. Max Black, paragraphs 10, 15, retrieved Aug. 2010 from http://en.wikisource.org/wiki/On_Sense_and_Reference.

relative heights of signification (the pink laser-pointer beams), as related-to-one-another, provide structure. In this model, because of the upward lights of signification that make it possible, the downward light of the Intellect (faint blue) is then able to deliver the signification/meaning of the whole sentence simultaneously, in one simple act of communication, having superimposed copula upon subject, and predicate upon copula.

Questions:

1. In the following examples, decide what is predicated of what:
   a. "Mike is happy." Ans: Happiness is being predicated of Mike.
   b. "Little boy blue blows his horn." Ans: "Blowing his horn" is being predicated of "Little boy blue."
   c. "A night of much weeping." Ans: Having-to-do-with-much-weeping is being predicated of a certain night.
   d. "Green grow the rushes." Ans: Growing greenly is being predicated of the rushes.
2. What is the first thing that a person always predicates? Ans: Being—either explicitly, or implicitly in some verb.
3. The word predicate means 'to speak in front of.' Does this 'speaking in front of' occur horizontally, or vertically? Explain why. Ans: Vertically. Horizontally, the words in a sentence are spoken not "in front of," but *after* the preceding one. However, considered vertically, each words is a modification of what preceded, and so predication itself—as "speaking in front of"—is properly a vertical (not horizontal) act.
4. In what *order* (cf. suggestions from box in Section 1.3.3) would you say that predication occurs? Ans: In the order of (formal) causality / Being.
5. Fill in the blank: In predication, each word (other than the word "is") _____s the word "is." Ans: Each word *limits* the word is.
6. Fill in the blank: In predication, the predicate _____s the subject. Ans: modifies/revises/qualifies/limits.
7. Explain in your own words how the word "is" functions in predication. Then generalize your answer to suggest how Being (signified by the word "is") similarly functions in reality. Ans: Since the other terms in a sentence limit the word "is," the word "is" as-it-were *expands* into whatever essence(s) the other terms in the sentence permit it. If there were no essences to limit it, then the idea of Being would expand indefinitely. Thus the Being (and the signification of the word "is") expands to fill whatever essence is limiting it, and if there is no such essence, it expands eternally. This is known as the 'fecundity' of Being.
8. Why does a person sometimes 'hang' on the word "is" (as shown in Diagram 3.33)? Ans: Because one is trying to expand the concept of Being being here used to its full, maximum extent possible, for purposes of either categorization or extra emphasis. Thus one emphasizes that the subject is connected *directly* to the predicate.

Comment [A202]: Even though the subject, verb, and predicate arrive at the hearer's ear at different times, it is as if the idea of the subject, idea of the verb, and idea of the predicate all arrive at the hearer's mind at the same time, as one complete, united mass or rational substance.

Comment [A203]: For further emphasis, have the students draw arrows from each predicate back to the thing predicated of. This arrow represents what is modifying/revising what, and so the students might even write the word "modifies." After they have done this, point out to the students that this arrow often goes in the direction opposite the flow of the sentence (i.e. from predicate *back* to subject).

Comment [A204]: If necessary, use Diagram 3.31 to explain to the students how the "in front of" (or before-ness) is 'in front of' in a vertical sense.

Comment [A205]: It is in the order of causality and, of the four types of causality, it is in the order of formal causality: The form of the subject *merges into* the form of the predicate. Alternative answer: In the *order of Being* (The being of the subject's concept gives a particular kind of contextual existence to the being of the predicate's concept.).

Comment [A206]: In the same way, the Intellect 'fleshes out' concepts (see Question 3 in Section 3.5.3, above).

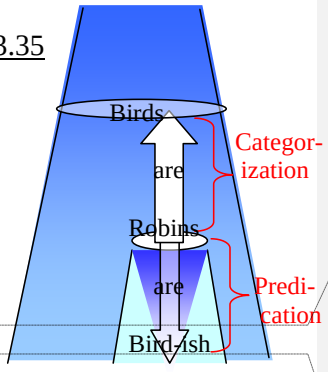
Comment [A207]: Theological Connection: This is why God is a necessary Being. Sooner or later, there is bound to be a situation in which no essences are present, and then any Being that is there present will expand and become an infinite Being, who is God. Thus if we can show by inductive experience that the existence of a being's Being necessarily precedes the existence of its attached Essence (i.e. as logically prior, and thus prior in the order of Being), then, by abstraction, we can perform a *reductio* in which essences are removed, one-by-one, until we arrive at nothing else except what St. Thomas calls "*ipsum subsistens esse*," that is, Being itself, the "I Am Who Am," who is God.

Comment [A208]: This can also be called the "generosity of Being" or the "self-communicativeness of Being" and it is based on Plato's idea of the "self-diffusiveness of the Good" (W. Norris Clarke, *Person and Being*, 9-11).

2. Other Kinds of Predication

Categorization

Diagram 3.35

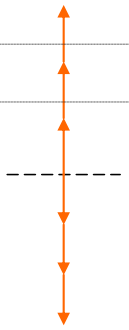


It is important not to mistake predication for categorization. Some people may think that categorization is just another kind of predication, but really the two are very different. Predication is a single, smooth, simple use of the Intellect, whereas Categorization is actually an abstraction (a backing-up) and thus requires at least two downward acts of intellectual knowing. In predication you predicate some quality that you see in a subject, whereas in categorization you say that the subject is some kind of something else. Thus saying "robins are bird-ish" or "bird-like" or "birdy" is predication, but saying that "robins are birds" is categorization, because what you are really saying is that robins *belong* to the class of birds or are *from/of the essence of* birds. The difference between the two is that categorization uses two nouns, whereas predication uses a noun and an adjective. Predication is merely downward and just becomes more specific since you are just 'focusing in' on a particular quality within the thing, whereas categorization is upward and becomes more general, and requires that you first abstract bird-ness from robins and then attribute robins to it. Here, the going from a species up to its genus is a generalization.

Because categorization exhausts the entire Being of the subject and then inserts all of it into the predicate term, we say that categorizations have a "universal character."[88] This means that not just the terms (the endpoints), but the categorization itself (the connection between them) is of a universal nature. Consequently categorizations are solid, sure, and (if true) eternal.

When a lower species is categorized of a higher genus, we might think that the genus then *has* that species—and it does, *accidentally*; however, in a much more important sense the species 'has' the genus essentially (cf. diagrams 1.10 and 1.27). After all, just knowing what a genus is, you wouldn't know what its species are; but knowing a species, you would immediately know all its genera. Thus 'having' is a mainly essential (not existential) relationship, although it does have some accidental forms. We will see in the example in the next paragraph that when the having is accidental, it is also existential, as well. We see then that as predication follows and declares something about a thing's (accidental) being, categorization follows and declares something about the thing's essence. Categorization is then much more substantial than Predication, because one can only predicate accidents, whereas one can categorize according to a thing's substance/essence (i.e. from where its concept itself came from).

Diagram 3.36



The direction of *essential* 'having' goes *away* from the center-line.

Comment [A209]: These downward acts of intellectual knowing would be symbolized in Diagram 3.35 as two separate and unconnected downward arrows, the first passing through the flat circle/class of "Robins," and the second passing through the flat circle/class of "Birds." However, in the grand act of understanding, in which it is understood by an upward-directed act of understanding that "[All] Robins are birds," each of the separate acts of knowledge are implicitly contained/absorbed. Thus you cannot have the understanding that "Robins are birds," unless you first know (1) the idea of Robins, and (2) the idea of Birds. What is key here is that Understanding is an upward-directed act, whereas knowledge is a downward-directed act (cf. Diagram 3.11)

Comment [A210]: In predication, you start with a subject and—in predicating—'zoom in,' to some quality that is part of that subject. Conversely, in categorization you start with a subject, and then 'zoom out' to some greater subject (a genus), of which it is a part.

Comment [A211]: Belonging to is an essential relation (cf. the use of "has" in Diagrams 1.10 and 1.27), not existential, and thus "is" is not even the right word to use here. It would be better to say "robins belong to birds" or "robin-ness belongs to bird-ness."

Comment [A212]: It will be seen in the next section that of the four kinds of propositions, that which is most natural to categorization, and in which categorization most stands out, is the A-proposition (i.e. a universal affirmation, "All ___ is ___").

Comment [A213]: This is having, as when you have a piece of matter: You encircle it by holding it in your grasp, being bigger than it, and thus controlling it. Cf. next comment.

Comment [A214]: This is having, as when you have a special form. Here, you do not have it in your grasp, but it rather permeates and saturates you, so that you have it, and you can't help it (sort of like you can't help having a sickness), because it is part of your essence to have it. In this way man 'has' animal-ness.

Comment [A215]: At least the first of the two acts of knowing in Categorization. (cf. the comment three comments before this one).

Comment [A216]: *Indirectly*, categorization also speaks about the thing's Being *through* the thing's essence, but this is only secondary. Rather, categorization has much more to do with the essence of something, than with its existence. Thus categorizations could be performed about imaginary and non-existent essences (e.g. 'hephalumps' and 'woozles' categorized as kinds of *monsters*), as we shall see when we study the existential fallacy.

[88] Aristotle, *De Interpretatione*, 7 (17b5-13); *Analytica Priora*, I:1 (24b27-28).

Belonging and Having

To predicate (the verb) is to state a predicate (the noun) about/of something: "[The thing predicated of] IS [the predicate]." Because the word "IS" always occurs in predication, most people think that predication is an existential relation: a predication of *Being*.[89] However, as shown by the reversed arrow, predicables are really reflections of the predicate back upon its subject. If you say "Man is rational," rational is a "reflection" or qualification or judgment back upon "man:" It clarifies or distinguishes man's Being in some way. Thus the *content* of the predication is really suggestively-backward and in reverse, even though the *direction* of predication (the force of the sentence) is forward.

Predications are mainly *existential* (telling about Being, i.e. what is [being] what), but because they are existential, they are incidentally and to a lesser extent also *essential*. How? Any Predication using the word "is" can be thought of in the lesser essential terms of *belonging* and *having*: "[Predicate] *belongs to* [subject]" and "[Subject] *has* "[predicate]." Here we see that when a substance (the subject[90]) 'is' some accident, it also 'has' that accident (thus going against the direction of 'having' shown in Diagram 3.37 above), and thus accidental having is existential. Saying that man 'has' a rational quality is slightly less than saying that man 'is' directly "rational," and thus essential predication is slightly less than its existential counterpart.

Key distinction:
-*Essential* having is essential.
-*Accidental* having is existential.

Indeed, every sentence has a natural ordering: One that begins from a substance as its subject, and concludes to a quality as its predicate. Any sentence that goes opposite to this is fundamentally essential, rather than existential:

Primarily Existential (standard) Format:	Corresponding Essential Format
The roses are red.	Red are the roses.
"My brother is (named) Joe."	"Joe is my brother."
Horses are animal (i.e. living)	Horses are animals.

Questions:

1. T/F: When we categorize, we reverse the direction of predication horizontally. Ans: False. We reverse it vertically.
2. What is one way to horizontally reverse the direction of predication? Ans: Change it into a statement of belonging.
3. Is categorization greater or less than predication? Why? Ans: Greater. Predication can be accidental, whereas categorization must always be essential.
4. Rewrite the following predications in terms of belonging and having. (*Hint*: Don't be afraid to add "–ness," or make some other change, to change a quality back into the abstract noun that it comes from)

[89] Cf. Aristotle, *Metaphysica*, V:7 (1017a7-30); VI:4 (1027b30-33).
[90] That the subject plays the role of substance in a sentence, see Aristotle, *Metaphysica*, VII:1 (1028a10-30, esp. 24-27); cf. *Analytica Posteriora*, I:4 (73b5-9).

Comment [A217]: A synonym for the verb to predicate is "to *call*." Man is called a rational animal, man is called warm-blooded, and man is called risible.

Comment [A218]: Ask the students "How do you know propositions are existential?" [Ans: Because they have the word "is" in them.]

Comment [A219]: Anywhere that you have existences you will have an essences, as well. However, the reverse is not true: Just because you have essences doesn't mean they are yet existing (recall Section 1.2.1).

Comment [A220]: As an exercise have the students make up several sentences (using the word "is") and then have them re-state all the examples in terms of "belonging [←]" and "having [→]."

Comment [A221]: Point out to the students how "A is B," also signifies that "A has B[ness]." This is why we say what is existential ("is") is also, and to a lesser extent, essential ("has").

Comment [A222]: It should be qualified that these "essential" sentences are also existential. It is existential because in each case you are affirming that roses, a brother named Joe, and horses *actually exist*. However the force of the sentence is not to focus on this existence. Rather it is to focus on the joining of essences. Indeed, the 'vague' or 'ethereal' spirit of these essential counterparts would almost imply that you don't really care whether or not they actually exist, almost as if you are in some other-worldly dimension where everything going on might be just hypothetical (not yet real).

Comment [A223]: Here it is as if we are viewing the entire object (the roses) through red/rose-colored glasses, and not concerning ourselves with any of its other characteristics except its redness. Qualities are essences, and so such focusing in on a particular quality—while disregarding the beings themselves—is characteristically essence-minded.

Comment [A224]: Ask the students: Which is easier to understand: "The roses are red," or something essential (and poetic) such as "Red are the roses?" [Ans: "Red are the roses" is easier] This is perhaps why St. Thomas Aquinas writes that the proper object of the Intellect is not existence, per se, but essence (*quidditas* / "quiddity," literally, "what-ness," from Lat. *quid*, "what"). Aquinas, *Summa*, I.85.6.c., I.84.7.c.

Comment [A225]: He really exists in a 'Joe-ish'/'Joe-y' sort of way.

Comment [A226]: In other words, the name "Joe" designates/defines the one who is my brother. We will see in Section 3.6.4 below (on the "existential fallacy") that defining has to do with essences, not existence.

Comment [A227]: "Animal" means having *animus* or breath, i.e. "living."

Comment [A228]: Here we are identifying the essences of horses with the abstract essence of animalness, not saying that all horses have recently transformed into generic animals that can no longer be distinguished as horses. We see from this ...

a. "The monkey is happy." Ans: The monkey has happinness. Happiness belongs to the monkey.
b. "The roses are red." Ans: The roses have redness. Redness belongs to the roses.
c. "All of us believe in you." Ans; All of us have belief in you. Belief in you belongs to all of us.
d. "Bats are mammals." Ans: If you rewrite "mammals" as the quality "mammal," then you can change it into an abstract noun "mammalness." Thus you get "Bats have mammal-ness." "Mammal-ness belongs to bats." Alternative and better answer, if you reverse the subject and predicate: "Mammals have bats." "Bats belongs to mammals."

5. Think: Why can't you do the same for the following sentences?
a. "You are my right-hand man."
b. "The 41st president of the U.S. was George H.W. Bush."
Ans: Because the predication in question is necessarily equal [or greater] to the subject and cannot be made less. 'Having' bespeaks a relationship to some slightly lesser accidental quality, and so these sentences can only use the verb "is,' and cannot use the verb "has."

3. The Four Kinds of Propositions

There are four kinds of propositions, designated by the letters A, E, I , and O. It is important to learn these propositions by heart because they are deeply significant for how we think about things.

Standard Form	Alternate Forms:	
A: All A is B	A *IS* B! (categorization)	
E: No A is B	All A is non-B[91] A *IS NOT* B! (denial)	All A is not B
I: Some A is B	*Yeah*, A's B (admittal)	
O: Some A is not B	A isn't always B (objection)	Not all A is B.

Tricky-O

The form in the outlined-box above is known as Tricky-O. Tricky-O is tricky because it can be understood either as an E proposition or as an O proposition (the other two gray areas), depending upon how you take it. If you say "(All A) is not (B)" it is an E proposition. If you say "*All* A is *not* B" it rearranges to "Not all A is B" which is a kind of O. The mystery here is whether the "not" is to be understood as a "non-" (negating the predicate) or as an out-of-place "not" (negating the "All"). Thus tricky-O is imprecise, and should not be used, if at all possible. Instead use one of the two alternate gray forms.

Comment [A229]: The following section is a quick run-down of Logic. It would be desirable—though not necessary—that students have already practiced Logic in-depth, in an earlier course.

Comment [A230]: Students must memorize these.

Comment [A231]: Here, the "not" is separating the subject from the predicate. This is the middle course in Diagram 3.59.

Comment [A232]: Here, the "not" is just negating the quantifier ("Not all" = "some are" [I], and "some aren't" [O), rather than (as in the previous comment) separating the subject from the predicate. This is the left course in Diagram 3.59.

[91] Aristotle, *De Interpretatione*, 10 (20a20-21).

Explanation: It is important to keep in mind that a "Not" particle can do one of three things (cf. Diagram 3.59): It can negate the quantifier (All), the copula (IS), or the predicate (non-), with different results in each case. If it negates the predicate, it is obviously an **E** proposition (All A is non-B). If it negates the quantifier, then it makes "All" into "some" and indirectly negates the copula as well ("*not* ALL A is B" means "some A is not B") (**O**). If it negates the copula, it automatically re-arranges the whole proposition in the following way: "(All A) <--is not--> (B)" re-arranges into "No A is B." (**E**)

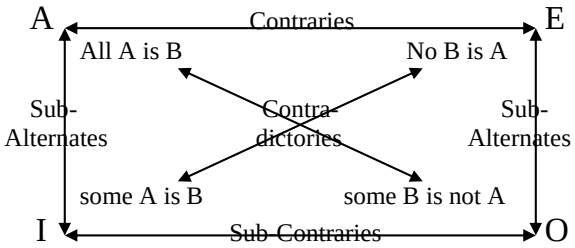
Comment [A233]: The reason it has two results in this case (i.e. both changing the quantifier and negating the copula) is because by negating the quantifier/subject you indirectly negate (or cast disparagement upon) the being that flows from it.

Comment [A234]: Here "No" is short for "None of."

The Square of Opposition

The four propositions form what is known as the Square of Opposition.[92] The square of propositions is useful because it enables you to infer some truths from propositions already known.

Diagram 3.37



For example, if I know the truth of a universal (A or E), I can immediately infer that its sub-alternate is true (I or O, respectively).[93] Depending on whether a given proposition is true or false, I immediately know that its contradictory is the opposite. Between contraries, one will be true and one will be false; between sub-contraries, at least one will be true.

Questions:

1. Label the following propositions as A, E, I, or O:
   a. "Some moose have horns." Ans: I.
   b. "No cows are horses." Ans: E.
   c. "Some cars are not four-door." Ans: O.
   d. "All men are judged." Ans: A.
   e. "Not all men are found guilty." Ans: Tricky-O.
   f. "All Republicans are non-Democrats." Ans: E.
   g. "All truths are not easy." Ans: Tricky-O.
   h. "All these students are not working." Ans: E (not Tricky-O).
   h. "All the ants are non-backboned.' Ans: E.
   i. "Truth is beauty." Ans: A (Implied: "All...").
   j. "Financing is available." Ans: I (Implied: "Some...").
2. If you know the truth of one universal proposition, what will the truth of its _____ be?

[92] Aristotle, *De Interpretatione*, 10 (19b33-34).
[93] Cf. Aristotle, *De Interpretatione*, 13 (23a17); *Analytica Priora*, II:21 (67a26).

a. contrary Ans: False.
b. contradictory Ans: False.
c. sub-alternate Ans: True.

3. If you know the truth of one particular proposition, what will the truth of its _____ be?
   a. sub-contrary Ans: False.
   b. contradictory Ans: False.
   c. sub-alternate Ans: Unknown.
4. If you know the falsity of a particular proposition, what will the truth of its _____ be?
   a. sub-contrary Ans: True.
   b. contradictory Ans: True.
   c. sub-alternate Ans: False.
5. If you know the falsity of a universal proposition, what will the truth of its _____ be?
   a. contrary Ans: True.
   b. contradictory Ans: True.
   c. sub-alternate Ans: False.

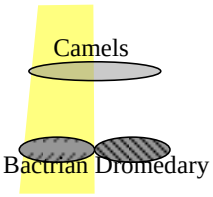


Diagram 3.38

4. Underlying Theory and Explanations

Affirmations

In reasoning, the act of an affirmation occurs by the light of the Intellect shining through one concept into another.[94] For instance, if I affirm that "Some camels are Bactrian," the light of the Intellect shines first through camel-ness and then into Bactrian-ness. The reason it shines through in this order is because we must first know that which has fewer determinations, and only later know that which has more determinations. After all, a thing could theoretically have an infinite number of determinations, which shows that the light of the Intellect must begin at what is simple (the only true endpoint) and proceed from there to what is more complex.

When we know in this way, we know the first (and simpler) *as* the second (and more complex). Philosophers tend to use the word "*qua*," as in "Knowing bactrians *qua* camels" or "Knowing camels *qua* Bactrians." The word *qua* is useful for moving vertically within

Proper Vocabulary Usage:
The word "qua" (from Lat. "by [means of] which") is a common philosophical term, generally translated "as." It has to do greatly with qualities. For instance if I know a man *as* yellow, I am knowing him by means of yellow (which is penetrating through and infusing him).

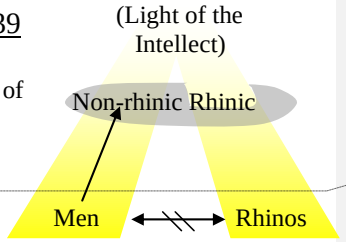
Comment [A235]: Ask the students, "What faculty or power in you, are you using to do this (i.e. to see the one in a special way, *as* the other)?" [Ans: Abstraction.]

[94] Aristotle calls this "νους," [nous], "mind," sometimes translated "intuition" (to be studied in Ch. 8). He says that this enables the Intellect to think the "constitutive essence" of something (cf. Diagram 3.4), and hence makes possible subsequent syllogistic reasoning and demonstration. Aristotle, *De Anima*, III:6 (430b27-28); *Analytica Posteriora*, I:3 (72b19-24); II:19 (100a13, b8-15).
[95] e.g. Aristotle, *Physica*, II:2 (194a9-11).

one's Intellect, since it can also go the other way: You can know robins *qua* birds or birds *qua* robins (although the latter is less common, since it is more natural to say you know "those birds *that* are robins."). Similarly you can know robinness *qua* birdness or birdness *qua* robinness (although here the former is less common). The use of the word *qua* then signifies that you are abstractly concentrating on a particular form known to be present in the thing, rather than the thing itself.

Denials

Diagram 3.39



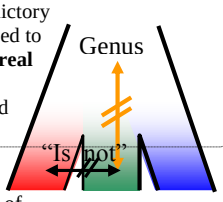
"No men are rhinos" (horiz-ontal) is the same as "All men are non-rhino"(vertical)

In reasoning, the act of a denial occurs by the light of the Intellect failing to illumine both of the concepts at the same time. Thus "No men are rhinos" results from my Intellect being unable to unite the two. Why can't the two be the same? Because there is at least one specific quality associated with men (e.g. 'two-legged' or 'rational') which repels a specific quality associated with rhinos (e.g. 'four-legged' or 'non-rational').

A denial is really a predication of a thing's contradictory. If I say "men are not rhinos," what I am really saying is "men are "non-rhinos," i.e. that there is something about men which is necessarily non-rhinic. A concept that is just a contradictory doesn't really exist in itself (i.e. you can't imagine it; you can only imagine what it hypothetically would be, i.e. the set of all things that are not rhinos; but this is infinite, and so it is unable to be traversed by the limited Imagination[96]); it only exists with reference to a concept that does exist.[97] However it does exist mentally in the Intellect, and this is why we can name it.

Distinctions

Diagram 3.40



Although contradictory species are opposed to one another by a **real distinction**, yet a species is opposed to its genus by a ***distinction of reason***.

A distinction of reason means that although there is no real difference between the two, yet the mind can still distinguish one from the other. Moreover in distinctions of reason you cannot truly say that one "is not" the other.

A common theme in this unit will be that denials do not positively predicate existence: They only negatively distinguish out a thing's (hypothetical) essence. There are two ways that such a distinction can happen: It can either distinguish real things (and *a fortiori* their essences inside of them as well), or it can distinguish two parts of the same thing. The former is called a real distinction, the latter a mental distinction (a.k.a. "a distinction of reason"). In a mental distinction, one part may even completely include the other, and thus you must make an act of abstraction (recall Section 3.2.1) in order to mentally distinguish the two.[98]

Comment [A236]: It is almost as if there is a magnetic repulsion between the two.

Comment [A237]: This phrase is classical. It suggests that you can never get to the other side of it, that you can never get your arms/mind around it.

Comment [A238]: In other words, even though you can delineate out an essence, it doesn't necessarily exist.

Comment [A239]: (since their essences are inside of them)

Comment [A240]: Ask the students: "In what sense is a robin *not* a bird?" [Ans: By a distinction of reason, i.e. that we mean a different thing when we say "robin," than when we say "bird."]

Comment [A241]: Point out to the students how "Animal" and "Thing" are separated by a mental distinction in Diagram 3.13.

[96] Aristotle, *Analytica Posteriora*, I:3 (72b10), I:22 (83b5-6).
[97] Aristotle, *De Intrepretatione*, 1 (16a30-32).
[98] The difference between the distinctions can be seen by the two unities which they oppose: Numerical (material) unity, versus formal unity within the essence. Aristotle, *Topica*, I:7 (103a24-39). However, although Aristotle did have a notion of generic unity (horizontally within the same genus), he did not have

The Existential Fallacy

The existential fallacy comes from the fact that essence does not necessarily imply existence.[99] "All unicorns [or unicorn-ness, the essence] are [belongs to] animals [animal-ness]," therefore "Some animals are unicorns," would normally be a valid deduction (known as a *conversion*, to be learned in the next section). However, it violates the existential fallacy because it implies that unicorns really exist (They don't.).

A properly-stated denial (i.e. "___ is non-___.") always involves an implicit possible existential fallacy. For instance, if I say "All humans are non-callamer," my statement is true. Since "callamers" don't exist, my statement is the same as 'All humans are non-non-existent (i.e. "existent")." The group "non-_____" certainly exists, but callamers don't exist. But if I turn the sentence around and make "callamers" into a subject—as if callamers actually *do* exist—then I would be committing the existential fallacy. The existential fallacy requires that something exist for the statement to be true, and since it doesn't exist, a fallacy has been committed.

The utmost that denial can accomplish is to define some essence as *not* something else. However just because you define or delimit an essence as separate from something else (a horizontal separation) doesn't mean that it *exists* (a vertical connection to its cause, above).

Particular vs. Universal Propositions

Particular statements (I or O) are not characteristically acts of categorization (since it would have to speak of "all" of them for it to say something essential about them), but only acts of predication. For instance, so-called I-categorization in Diagram 3.41 below is downward-inclined, just like I-predication, whereas categorization is supposed to be inherently upward-inclined (cf. Diagram 3.35). Thus so-called 'categorizing in I' doesn't really exist; it is no different from predicating. Likewise O-propositions are all downward-inclined, for the very same reason. Thus the predicate in particular propositions is always lower down in the hierarchy of Being than its subject, and all such propositions are predicative, not categorical.

By contrast, A-propositions have a real difference between categorization and predication. In A, the act of categorization is necessarily upward-inclined (since the predicate, being a substance, must stay fixed at its proper higher place in the hierarchy of Being). By contrast, A-predication is free to be downward-inclined, since the predicate here is just a quality which, though coming from on high (where its substance is located), yet transcends through the entire class, all the way down to its very lowest species. Similarly E-categorizations are upward-inclined, just like an A-categorization, since you are really just categorizing of some substance which is a contradictory ("non-_____," cf. Diagram 3.39 above); E-predications are horizontally or downward inclined since here

Comment [A242]: Paying no attention to the content of the terms, one would think that this is a valid inference, because one statement validly converts to the other (Conversion will be covered in the next section.).

Comment [A243]: This is known as a *double negative.*

Comment [A244]: Take the students through an exercise: "What am I thinking of? . . . It is not the refrigerator; it is not anything green; it is not John's desk; it is not on this half of the room; it is not in the other half of the room; it is not outside of the room . . . . Now what was I thinking of?" [Ans: Nothing!] Thus negative statements do not imply existence.

Comment [A245]: Whereas in the Logic of Terms above we had distributed and undistributed terms, here in the Logic of Propositions we have universal and particular propositions. The two are essentially identical (universal = beginning from a distributed subject, whereas particular = beginning from an undistributed subject).

Comment [A246]: Point out to the students that in Diagram 3.41, I's categorization and predication look identical: They are both downward-tending. By contrast, A's categorization and predication tend in opposite directions, because only A can truly categorize (upwardly).

Comment [A247]: This is a good early exposure to the fully diagrammed system. Tell the students not to get too worried because of things they may not understand in those (e.g. necessity and possibility, etc.).

Comment [A248]: As can be seen in the sentences "Some animals are bears" [so-called 'I-categorization'], and "Some animals are not hyenas"[so-called 'O-categorization'], where the predicate is a noun/substance; or in the sentences "Some animals are bear-ish" [I-predication], and "Some animals are not hyena-like," [O-predication], where the predicate is an adjective/quality.

Comment [A249]: Qualities come forth from substances (cf. Diagram 3.44).

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a true notion of formal unity (vertically within the essence—cf. *Topica*, I:7 (103a9), *Metaphysica*, V:6), and the accompanying distinction of Reason, as seen in *Metaphysica*, VII:12 (1037b18-20). However, being able to see that one formula is often included in another, he almost had this distinction. Cf. *Metaphysica* VII:10, and V:6 (1016a33-37).

[99] Aristotle, *De Interpretatione*, 11 (21a26-28).

the predicate is again some quality which—as transcending down—can be as low as you like.

We see then that universal propositions (A and E) are distinct because they alone are given to categorization and can be directed upwardly. Consequently universal propositions are the only ones fit for original research and progress in uncovering a new and higher level in science (i.e. in the hierarchy of knowledge).[100]

Questions:

1. Think: Can the existence of God be disproved by means of the existential fallacy? Why or why not? Ans: No. The existential fallacy shows that just because you have essence, you don't necessarily have existence. But we can see in our world that certain things *actually exist*! Thus there must be some cause of their existence, and this alone can be God. Cf. Section 1.1.3 on the 5 Ways [to prove God's existence].
2. What English derivative do we get from the Lat. *qua*? Ans: Quality.
3. Fill in the blanks: In affirmations, if the proposition is a(n) ___-proposition, then the lower is known *qua* the higher; if it is a(n) ___-proposition, then the higher is known *qua* the lower. Ans: A . . . I. (If it is an A-proposition then *all* of the lower is known as the higher; if it is an I-proposition, then *some* of the higher is known as the lower.)
4. Which is more natural to the Intellect: To say "No men are rhinos" (an E-proposition), or to say "All men are non-rhinos" (as if it were an A-proposition)? Explain your answer. Ans: To say "No men are rhinos" actually takes two acts of the Intellect (i.e. two light-beams in Diagram 3.39): one to think about rhinos, and then one to think back about men. Conversely, having found some quality in humans that is inimical to rhino-ness, it is much more natural to the Intellect to say "All men are non-rhinos," in a single act of Intellect (i.e. only the left light-beam in Diagram 3.39). In short, recognizing Being is much easier to the Intellect than recognizing non-Being; and furthermore, all recognition of non-Being comes from the recognition of *being* contradictory.
5. In what sense is it false, and in what sense is it true that "all unicorns are animals." Ans: It is true that the essence or idea of unicorn-ness involves animal-ness. However, it is false that any unicorns actually exist.
6. Explain: Why do A and E propositions alone represent a real advance in understanding? Ans: If we are going to start from something we know and come by a real connection to something new and never discovered before, then the only way we can get from what we know to what we don't know is if what we know fully *belongs*

Comment [A250]: You have only made progress to exposing a profounder/higher level of being if you can make a universal statement about it. For example (referring to Diagram 3.28), "All caterpillars are cocoon-spinners" says something about the nature of caterpillars as essentially needing cocoon-spinning for their survival. Thus you can consider cocoon-spinning as having to have been evolutionarily prior (in causality and time) to caterpillars. Similarly, if you can truthfully say that "No mosquitoes are malaria-resistant," you have made a new discovery about the origins of mosquitoes vs. malaria: Malaria must have preceded mosquitoes in time and causality, because if it followed them, it would make sense that malaria would've been unsuccessful in invading certain breeds. Thus you can place malaria as higher-up in the hierarchy of Being than mosquitoes, and conclude that mosquitoes evolved to take advantage of malaria (necessarily needing it), not malaria to take advantage of mosquitoes.

However it should be noted that you have to be careful in this, and make sure that the supposed higher really does cause the supposed lower, because occasionally complete categorizations happen just by chance or fluke, and then you would be committing a *post hoc ergo propter hoc* fallacy (Lat. for "after this, therefore because of this"). For instance if I stated that "80% of those without televisions make more money and avoid cancer," it isn't because television-rays give you cancer (though they might) and the monthly bills break your bank, but because of another reason that is merely accompanying, namely, that while others are sitting watching television those without television are up and exercising and being industrious.

Also, it should be noted that in the E-proposition there is always the danger of violating the existential fallacy, when the thing you discover happens to be a mere coincidence (e.g. "no mosquitoes are tooth-decay resistant" for an entirely different reason, namely, that mosquitoes don't have teeth, and never did; thus you cannot make any assumptions about the relative times of the origins of mosquitoes and of tooth-decay.).

Comment [A251]: It would have to be a situation where the new thing was formerly so universally pervading, or so fine, that we simply didn't recognize it because of the more obvious things, in which it was all along present, but never distinctly separated out and seen in its own right.

[100] Aristotle, *Analytica Posteriora*, I:14. We will see later in Ch. 7 that because only the 1st Figure of the syllogism can alone prove an A-proposition, the 1st Figure is the only figure fit for making advances in scientific knowledge.

to what we don't know. Only universal propositions are able to classify one thing as fully *belonging to* another, so only universal propositions can represent a true advance in knowledge, a true discovery of a more removed higher cause.

5. Simple Operations in The Logic of Propositions

The Standard Form of a proposition should have (1) A quantifier, (2) a subject, (3) some form of the verb "is/isn't," and (4) a predicate. Propositions are always true, or false.

Recognizing non-standard propositions

Normally, we add the quantifiers ("some" / "All") and the negative ("not") so that each judgment is clearly either an E, A, I, or O proposition. However, this is not always the case, and often you must 'figure out' whether "All" or "some" is implied, simply from the context. For example if a person really emphasizes "M *IS* P," it is probably an act of categorization (an A proposition), and the person means "*All* M is P." However if the person concedes, merely admitting it, that "M is P," then you should suspect that they mean only "*some* M is P."

In addition, we have already covered tricky-O, and how to decipher that expression as being either an E or an O proposition.

Lastly, sometimes the copula itself is missing.[101] In the sentence "The boy runs" or "the boy ran," you may have to add a copula yourself by turning the verb into "is," plus a participle: "The boy is running" or "The boy is having already run." In these ways we can convert any sentence into the standard form of a proposition.

Conversion and Obversion

We saw in the Square of Opposition above that the Logic of Propositions was the first place where we could infer a new truth from a given truth. From an A we could infer an I, and from an E we could infer an O. However there are two other kinds of valid inference possible in the Logic of Propositions: conversions and obversions.

To convert, we swap the subject and predicate, and then make sure that the distribution of the new subject stays the same.[103] For instance, the statement "All men (D) are animals (U)" converts to "___ animals are men." Since "animals" was undistributed in the first sentence, we must keep it undistributed in the second by adding the word "Some:" "Some animals are men." From the statement "some animals (U) are not men (D)" we get the convert "All men (D) are not (some animals) (U)" or "No men are *those* animals." Verify the following:

A converts to I
I convert to I
E converts to E
O converts to E

Comment [A252]: By "valid," we mean that if the first proposition is true, the convert or obvert obtained from it will also be true. Thus conversion and obversion are ways to obtain a new and true proposition from one already had. However BEWARE: You have to *scrupulously* preserve the quantity of each term, or your conversion may become invalid.

Comment [A253]: Refer if necessary to the box showing common distribution patterns back in Section 3.5.4.

Comment [A254]: Have the students give tangible examples of each of these, or even have them write down examples and turn them in as a class exercise.

[101] Aristotle, *De Interpretatione*, 12 (21b8-9).
[102] Aristotle, *De Interpretatione*, 4 (17a3).
[103] Aristotle, *De Interpretatione*, 10 (20b1-3); *Analytica Priora*, I:2 (25a5-13).

To obvert, we contradict the predicate and negate the copula. From "some birds are herons" we get "some birds are not non-herons." From "All men are animals" we get "All men — are not — non-animals," or rather "No men are non-animals." Verify the following:

A obverts to E
I obverts to O
E obverts to A
O obverts to I

Questions:

1. Put the following into standard form, and label each A, E, I, or O:
   a. "Not all hearts are yearning." Ans: "Some hearts are not yearning." (O)
   b. "Chemistry is relevant to living." Ans: "Some chemistry is relevant to living." (I)
   c. "All soldiers are non-plussed." Ans: "No soldiers are plussed." (E)
   d. "Every good boy does fine." Ans: "All good boys are doing fine." (A)
   e. "My heart is all yours." Ans: "All of my heart is yours." (A)
   f. "All sailors are not land-lubbers." Ans: "Some sailors are not land-lubbers"(O) OR: "No sailors are land-lubbers.(E)
   g. "The ship lurches." Ans: "All of the ship is lurching." (A)
2. Obvert the following propositions:
   a. "Some horses aren't palominos." Ans: Some horses are non-P's.
   b. "Some men are irreverent." Ans: Some men are not reverent.
   c. "All cows eat grass." Ans: No cows are non-grass-eaters.
   d. "No potatoes are legumes." Ans: All potatoes are non-legumes.
3. What does a(n) ___ proposition obvert to?
   a. E Ans: A.
   b. O Ans: I.
   c. A Ans: An E (with the predicate "non-____").
   d. I Ans: An O (with the predicate "non-____").
4. Convert the following propositions:
   a. "Horses are not birds." Ans: Birds are not horses.
   b. "Some roses are red." Ans: Some red things are roses.
   c. "All roses are plants." Ans: Some plants are roses.
   d. "Truth is Beauty." Ans: Beauty is Truth.
   e. "All duck-ness is bird-ness." Ans: Some bird-ness is duck-ness.
   f. Some candies aren't sugary. Ans: Either it converts to nothing, or to "No sugary things are those candies.")
5. What does a(n) ___ proposition convert to?
   a. A Ans: An I proposition.
   b. E Ans: Another E proposition.
   c. I Ans: Another I proposition.
   d. O Ans: Nothing! (Or, treated as an obverted I, it converts to an I-proposition with a subject "non-___")

Comment [A255]: Depending on where you place the "not." If the "not" negates the "All," then it becomes the first answer. If the "not" acts as if it were a "non-" and negates the predicate, then it becomes the second answer.

6. Diagramming Logical Statements

The Substance in Logic

The substance in logic is always the subject-term (and in categorization the predicate-term can also be a substance). The substance can either be a group of material individuals (e.g. "antelopes" or "green things") or it can be an ethereal form ("antelope-ness" or "green-ness"). One of these is abstract and theoretical, the other solid and real. The substance is never a quality ("green") or a non-existential predicate ("running" / "in the house").

Formal substances use the quantifiers "No," or nothing at all (to indicate only one), or "some," or "All," so that formal quantity is *continuous*. Material substances tend to express quantity by the phrases "None of," "A/The/One of" "some *of*," and "all *of*," all of which indicate that material quantity is *discrete*. Additionally, quantity can be considered in terms of time. Thus the following phrases may also substitute for the quantifier.

	Quantifier	Substituting Phrases	
A	Every/All	Always	It is necessary that . . . [104]
E	No(ne)	Never	It is not possible that . . .
I	Some	Sometimes	It is possible that . . .
O	Some	Sometimes not	It is not necessary that . . .

For instance, instead of the statement "All keys are toothed," (A) you could say "It is necessary that keys are toothed" or "Keys are always toothed."

Proper vocabulary usage.
To symbolize necessity and possibility, we place a box at the beginning of a statement: "□ Men are animals" means "*It is necessary that* men are animals. "◇ The Men are Moroccans" means "*It is possible that* the men are Moroccans. Since necessity arises from the quantifier "All" used in a formal sense, and possibility from the quantifier "some" used in a formal sense, we can often draw the box around the quantifier itself: "All men are animals." "Some men are Moroccans." This gives an added degree of clarity.
We can convey impossibility by crossing out the diamond: " A is B"= "No A is B")
We can convey non-necessity by crossing out the box: "A is B" = "some A is not B."

The Two Realms of Logic

Because of the overlapping/infusing of reason into the physical realm, logic can be performed in one of two ways depending on the substance(s) used. If the substance begun from is a form or principle ("____-ness"), then the logic is in the *celestial realm*. If the substance begun from is a class or group ("___s") of physical things, then the logic

[104] Cf. Aristotle's discussion of possibility, contingency, impossibility, and necessity in Aristotle, *De Interpretatione*, 12-13. In the table in 13a(24-33), each of the four squares (A-D) corresponds to a particular one of the four propositions (I,E,O, and A, respectively).

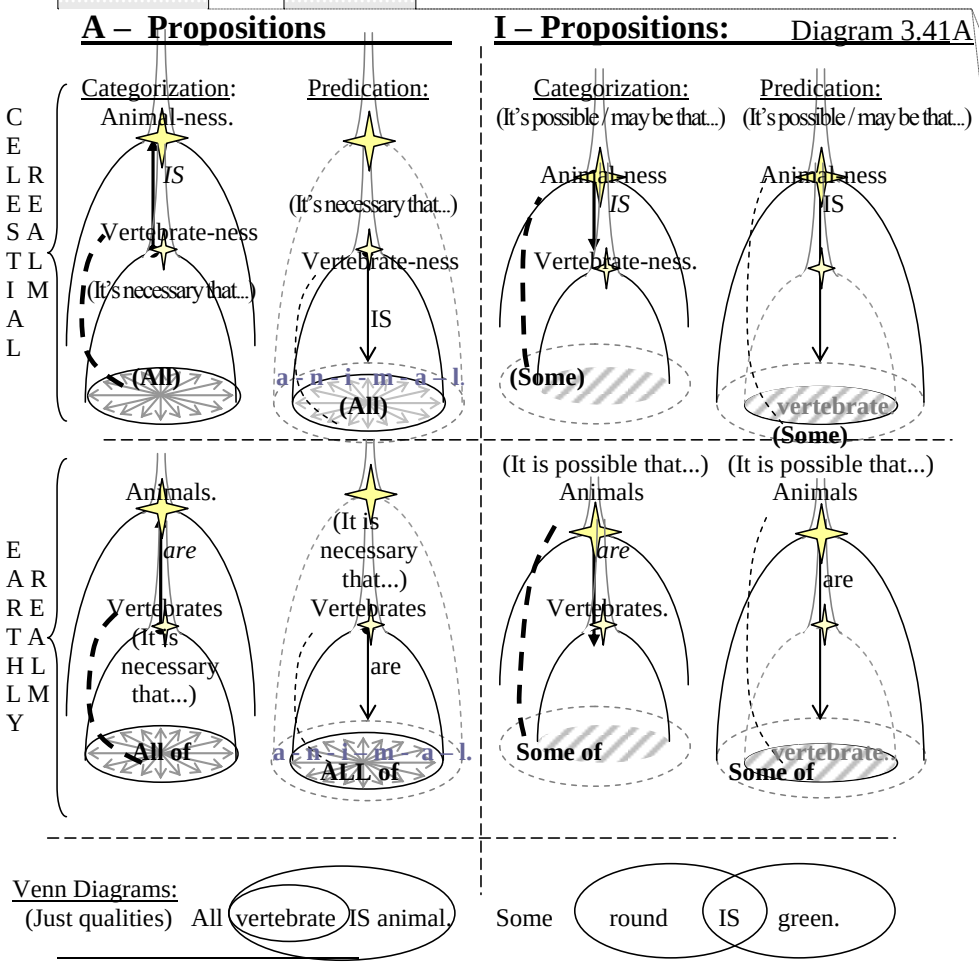
Comment [A256]: Re-emphasize to the students that just because we say that one is "real" doesn't mean that only it exists, and that the theoretical doesn't or might not exist. Rather, both exist. The only reason we call one real is because it is more visible and obvious to our senses and thus more thing-ly, or 're-al' (from Lat. *res*, "thing").

Comment [A257]: Time is actually a form of distance, as indicated by Einstein's Theory of Relativity, and thus it is no surprise that Time quantifiers and normal quantifiers can be freely exchanged, without losing any content or truth-value from the sentence.

Comment [A258]: The symbolism below representing necessity and possibility are symbols from Modal Logic.

is in the *earthly realm*.[105] Both kinds of logic work in identically the same way, using the same syllogism-structure, as is clear from the identical similarity between the upper and lower parts of Diagram 3.41A and 3.41B, below. The only difference between them is that one—logic in the celestial realm—more closely simulates how we think of things (i.e. dealing in pure forms and omitting any quantifiers), and thus proves truths in themselves—i.e. absolutely and eternally—whereas the other deals with the physical substitutes that we can posit in place of those pure forms, and is thus more adapted to our senses (and thus seems more relevant to the here-and-now).

At this point we can then fully diagram the four propositions in all their possibilities (Celestial or earthly, categorization or predication): As we do this, you should note that celestial and earthly logic function in exactly the same way:



[105] Ex me. These titles of "celestial" and "earthly" are my own invention, developed merely to verify that logic functions the same way, no matter which realm (physical or spiritual) it is in.

Comment [A259]: We could call these "formal logic" and "material logic" (see labels in diagram below), but these names have already been used in regard to something else, and so it is better to just say where they occur (i.e. what realm they should be diagrammed in).

Comment [A260]: In the diagram below, tell the students to either take the Quantification course ("All" / "some") or the Possibility/Necessity course, but not both. Technically, possibility and necessity exist only in the formal realm, and All/some exist in the material realm, but the terms tend to be extended to the other realm, as well, through analogy.

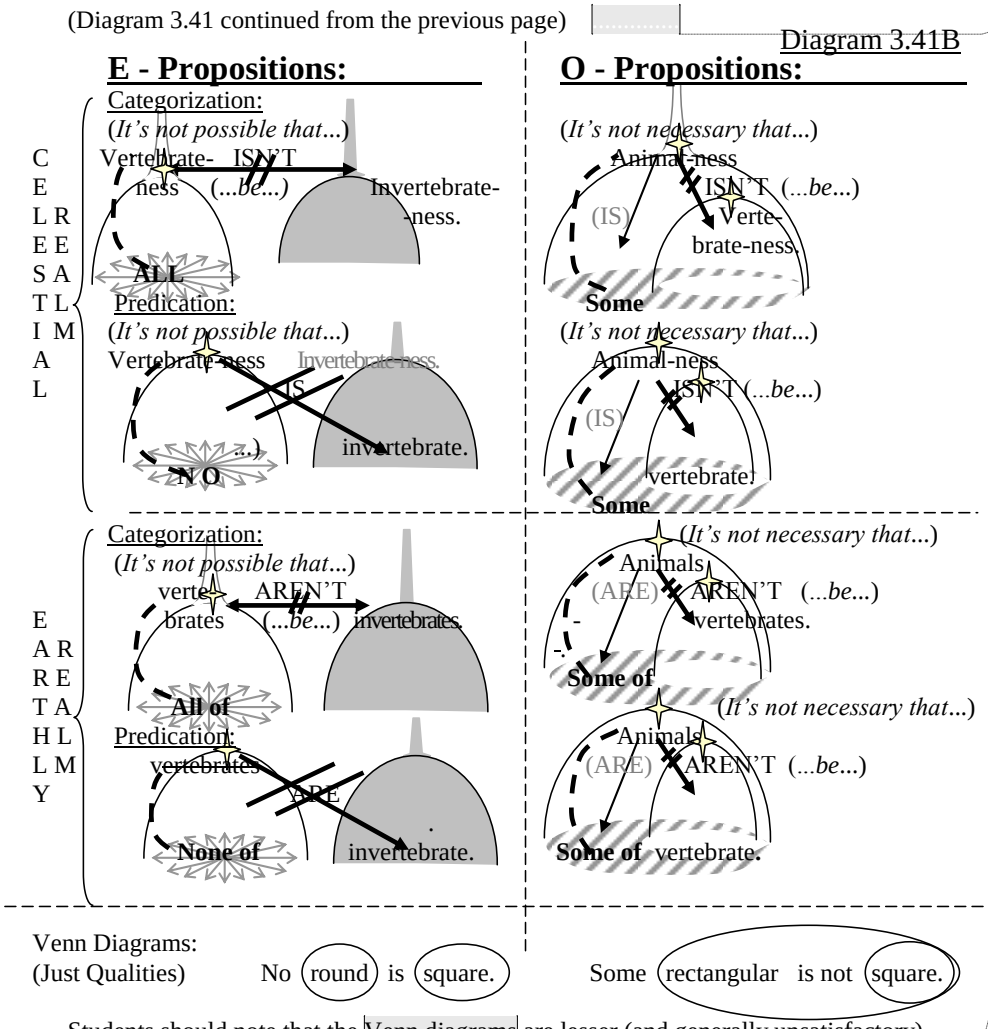
Comment [A261]: We could call these "formal logic" and "material logic" (see labels along left side of Diagram 3.41A and B below), but these names have already been used in regard to something else, and so it is better to just make up new names: "Celestial logic" and "earthly logic."

Comment [A262]: Go over this diagram with the students. In each case begin with either the quantifier at the bottom, or the "It is necessary that' phrase, and follow the dotted line and then the arrow. Doing this will give a complete proposition in standard form. In the top-left quadrant in particular, point out to them how in these certain individuals (all those inside the black circle), comprising the matter of vertebrate-ness (the same black circle in the center) overlap and are identical with the matter of animal-ness (the dotted gray circle around the outside). Thus in A-Predication, we don't just say that vertebrate-ness is vertebrate (a tautology), but that vertebrate-ness is animal. If the students have trouble seeing the matter at the bottom because it is so crowded, point out to them that the bottom of each of these eight diagrams is equivalent to the flat Venn diagram shown at the bottom of the page.

Comment [A263]: Earthly logic (in the lower halves of Diagrams 3.41A and B) should actually be drawn upside-down, but is here drawn right-side-up merely to demonstrate its similarity to celestial logic. We know that it should be upside-down because the substances involved in earthly logic require this: After all the proper part/unit/receptacle of vertebrate-ness (the backbone) is much larger—and thus higher—than the unit of animal-ness (the cell), which is much smaller—and therefore lower. Thus the earthly realm would be flipped upside-down. It is here drawn right-side-up because Reason enters into it and considers it in a right-side-up way, just as it would in the celestial realm. However in itself, its actual nature is inverted.

(Diagram 3.41 continued from the previous page)

Diagram 3.41B

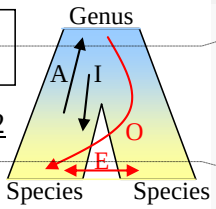


Venn Diagrams:
(Just Qualities)

Students should note that the Venn diagrams are lesser (and generally unsatisfactory) ways of representing propositions, because they just represent the overlapping of qualities. By contrast, the full vertical, formal-material diagram is much better because it shows the 'sense' in which each proposition is being thought of by its predicator, and how it is able to be used in constructing complex understandings, not just what the bottom-line results are. Students should also notice in Diagram 3.42 that the four propositions map all four possible relationships between a genus and its multiple species.

Conceptual representation of the four kinds of propositions.

Diagram 3.42



Comment [A264]: If necessary, go over these diagrams with the students, as well. In particular, in E-Categorization, point out to the students how the "Non-" is outside of the gray area. So we say that the vertebrates are "*non-*____." Remind them that the class "non-____" refers to *everything* outside the gray. In the O-propositions point out to them how since some of animal-ness isn't vertebrate-ness, by implication some of animal-ness is *something else*. This is why we have not one, but two arrows coming from animal-ness: Some is vertebrate-ness, and some isn't vertebrate-ness. If desired, ask the students what sorts of things could go there (in the default shaded gray area). [Ans: Invertebrate(ness), or even things like arthropod(ness), crustacean(ness), annelid(ness), or octopus(ness), or anything else which isn't vertebrate.] If we were to affirm these things, it would become an I-proposition.

Comment [A265]: Although Venn diagrams may be phrased using substances (e.g. "No humanity is green" or "No men are birds"), these should all be thought of as just the combination of their respective qualities (i.e. "No human is green" OR "No human is avian"). Thus Venn Diagrams occur totally in the horizontal (non-essential plane), and imply nothing in the vertical. Thus the nature of Venn diagrams is that you are comparing qualities, not substances.

Comment [A266]: Even if you label the parts of your Venn diagram with substances (e.g. "Animals" and "Vertebrates"), it is really the flat, 2D, materially-viewed qualities that come from those substances (cf. Diagram 3.43) which you are dealing with.

Comment [A267]: Knowing whether a proposition is being thought of as an upward act of categorization or just a downward act of predication enables you to gauge whether or not it is being used in an attempt to construct a logical/metaphysical argument/understanding, or whether it is just admitting what is in fact happening, here and now.

Comment [A268]: If you want to have a good understanding of something, then you want a nice, neat, vertical flow-chart, not a confused mass of flat, intersecting, ovals.

Questions:

1. Which realm of logic do . . .
    a. children think in? Ans: Earthly logic.
    b. adults think in? Ans: Celestial logic.
2. What is the substance in . . .
    a. celestial logic? Ans: Some abstract form ("___-ness").
    b. earthly logic? Ans: Some physical thing.
3. Change the following into standard form:
    a. "It is necessary that every bottle be stamped." Ans: All bottles are stamped.
    b. "It's impossible that one of them could be a criminal." Ans: None of them are criminals.
    c. "Sometimes a plane doesn't land on time." Ans: Not all planes land on time (OR: Some planes are not landing on time.).
    d. "It's not necessary that all black bears be black." Ans: Some black bears are not black."
    e. "It's possible that meteors can reach the ground." Ans: Some meteors reach the ground.
4. Think: What are some differences between the complete diagram and a Venn diagram? Which is better? Ans: The complete diagram is better because it shows what is infusing what (i.e. what is active, and what is passive, what is a genus, and what is a species.). Also, a Venn diagram can't distinguish between categorization and predication, even though these are two radically different mental acts. Consequently, Venn Diagrams are often used to process all the data; but what needs to be done here is just to process the essential data which is the result of categorizations. Consequently, Venn Diagrams are not given to charting essential connections (cf. Section 1.5.4). In sum, the Venn diagram charts just the results of a statement, not the statement itself.
5. What is the distinctive characteristic of . . .
    a. A-statements? Ans: It rises vertically.
    b. I-statements? Ans: It sinks vertically.
    c. E-statements? Ans: It separates horizontally.
    d. O-statements? Ans: It angles down, both vertically and horizontally, some of it out of the lesser species and, by implication, some of it into the lesser species, as well.
6. Think: From what two propositions is an O-proposition derived? What do these each contribute to the O-proposition? Ans: An O-proposition is comprised of both an E-proposition and an I-proposition. The E-proposition (separation) provides the horizontal component, but and the I-proposition provides the vertical component.

Comment [A269]: Using just Venn diagrams, people often have to use checkmarks (✓) and "x"-outs in the various regions to signify what they're focusing on (i.e. what is active, and what its result are). We don't do this in this book.

Comment [A270]: Since the O-proposition is "Some . . . is not," this is what is more essential to the O-proposition.
The part that goes into the lesser species, isn't really necessary, because if none of the higher genus went into the lesser species, it would be an E-proposition, but O-propositions can always be derived from E-propositions (by the Square of Opposition, cf. Diagram 3.37).

Comment [A271]: In the diagram, you could instead draw the E-proposition at the bottom, rather than at the top, and this would better match the areas shown in Diagram 3.41B (since it is two species which we're separating at the bottom, not two genera at the top). It was drawn here with the E-proposition at the top, and all the lines emerging from the same point, just to schematically represent how the angling-down force, comes from the horizontal force and the vertical force.