

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. 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.

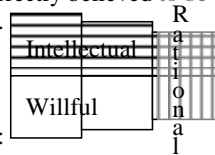
Its Horizontal Dimension

What is Intellect and the speaking of words? Intellect is the procession of Act from Act, of a word from its speaker. 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 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 has come to be as a true and permanent representation of what the mind of the speaker briefly was, when his/her mind was also in Act and produced those word, at that point in time.

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 -->

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.

Comment [LS1]: 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 [LS2]: Rom. 1:18.

Comment [LS3]: 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 [LS4]: 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.”]

Comment [D5]: Here we are talking about 1st Acts.

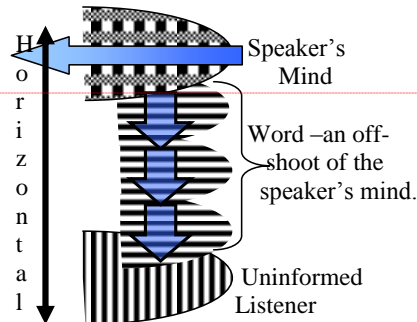
Comment [LS6]: A fact (from Lat. *factum*) is ‘a made act.’ The ‘f’ sound suggests making.

What sort of Act is this?
 Fundamentally, it is a form. 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

Besides its horizontal dimension, Intellect also has a vertical dimension based on the sublimity of its ideas (or *concepts*). Some ideas are more sublime than others. Generally an idea is more sublime the simpler, more abstract, more universal, more applicable to many things, more unchanging, and more eternal it is. 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), 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).



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.

Diagram 3.1

Comment [D7]: 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.

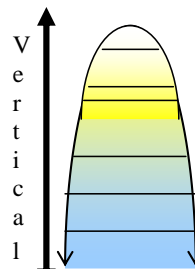
Comment [D8]: Translations and encodings are just *modifications* of the form (as if the form has something put down on top of it), not removals of the form.

Comment [D9]: 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 [LS10]: 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 [LS11]: You can think of form as "the data itself" (as opposed to the whole program or machine or medium in which the data appears).

Diagram 3.2

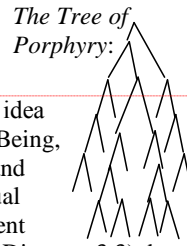


*Turn this diagram 90° to the right to make it match the diagram above it.

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!

When we chart these relationships, we see that the patterns of inclusion form a kind of ‘tree’, known classically as the Tree of Porphyry. Beginning simply at the top as “Being,” this idea then repeatedly splits and divides into many different categories of Being, which themselves then split again and repeatedly divide into more and more sub-categories and eventually arrive at all the various individual species of Being: cat, dog, olive, 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 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.

Diagram 3.3

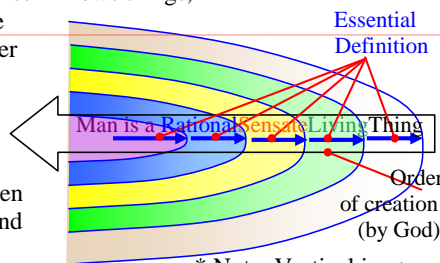


Comment [D12]: Diagram 3.3 will look more like a tree, if you turn it upside down. Cf. also diagrams 1.13 (upside-down) and 1.18 (right-side up, except for the human tree which is still upside-down).

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); and then He knows that Being which is Substantial and living (life); and then He knows that Being which is substantial, and is living, and is sensate, etc.

Diagram 3.4



Comment [D13]: 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—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 1.10); 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).

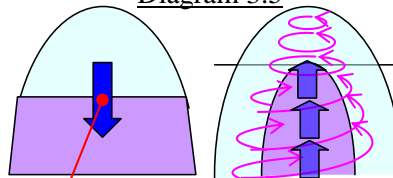
Thus too when we fully define a thing, we have to reverse direction and proceed as high up into its source as we possibly can, until we eventually arrive at the word “thing.”

Man’s essential definition is the formula that expresses his essence.

Of course sometimes a higher idea 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

Diagram 3.5



The two ways that the higher can cause the lower are when an idea begets/generates another idea (as separate from itself), or when it conceives an idea (as part of itself).

Comment [D14]: 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.”

Comment [D15]: “Thing” is the essence (essence) of Being (existence).

higher: By generation or ‘speaking forth.’

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 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.**

Comment [D16]: 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].

Comment [D17]: i.e. from the begetter’s form.

Comment [D18]: i.e. from the conceiver’s matter.

Comment [D19]: 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 [D20]: The left half of Diagram 3.5 is unique male, and the right half is uniquely female.

Comment [D21]: 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”).

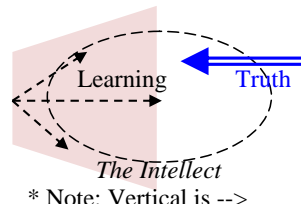
Comment [D22]: Bl. Anne Catherine Emmerich writes that reproduction in the garden of Eden would’ve been not by physical intercourse, but by *the spoken word* (Anne Catherine Emmerich, *Life of Christ and Biblical Revelations*, vol. 1, 8-9). Thus there is a way in which the physical realm of creation reflects the spiritual realm of ideas/minds etc.

Comment [D23]: 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.

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. 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. 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.

Diagram 3.6



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. 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 cause. 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.

Comment [LS24]: This '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 [LS25]: 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.

Comment [LS26]: 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.")

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"). 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 -->



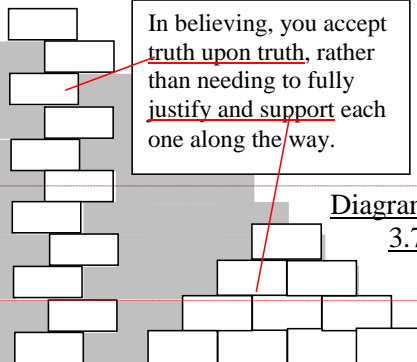
Error is a deviation, disconnect, or non-correspondence in the truth of what is said.

Learning is the reception and imbibing of such truth. 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. Then when we imbibe it, it is already 'solid' and 'sure' in

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

Diagram 3.7



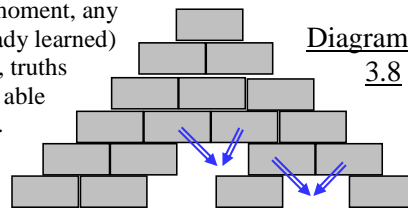
Comment [LS27]: It is fundamental because we cannot learn anything unless we—at least contingently—believe it. Even when someone is telling us a bald-faced lie, we still 'believe' the sound of their voice, the significations of their words, and that the fact that they're saying what they're saying. We 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 [D28]: We will study assent/consent more in Section 4.5.2.

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). In believing then, because you trust your teacher, his/her own well-built understanding (gray in diagram) substitutes for your own lack of understanding, and you simply accept the order in which the material is presented to you. Thus you grow in knowledge and arrive at conclusions at a *very fast rate*.

Once something has been learned, it then exists as a *structure* (see gray area) in the mind. 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. The word for being able to figure out the lower from the higher is to *infer*.

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.



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

Diagram 3.8

Comment [D29]: In the diagram above, ask the students how you might visualize the revealer's knowledgablens and trustworthiness. [Ans: His knowledgablens 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 [LS30]: Notice how the stack of bricks is much higher than the pyramid.

Comment [D31]: 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.).

Questions:

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) knowledgeable 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 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 [D32]: 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. For humans (and animals too, though they don't realize it) these images contain intellectual values implicit within them. 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 ✓ ✗ ✗



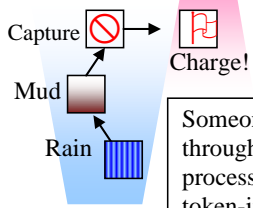
Comment [D33]: Using Diagram 3.9, ask the students, "Where does the new form come from?" [Ans: Everything in Diagram 3.9 is horizontal, having to do with matter and quantity, so it can't come from anywhere within Diagram 3.9. Rather, it comes from some higher dimension outside of this picture, and in 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.

Comment [D34]: Size is a kind of quantity, which is one of the nine categories of accidents (recall Section 1.5.5).

Comment [D35]: In the diagram, this new form is represented in Diagram 3.9 by pinkness.

Comment [D36]: 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.

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 automatically, subtly, and *instantaneously* enters/infuses into the situation.

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 [D37]: For instance, one may pass from imagining a duck to fuzzily imagining just any generic animal (not concerned for which one).

Comment [D38]: For instance, one may pass from imagining a duck to imagining a goose.

Comment [D39]: 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

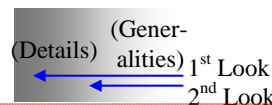
The overlapping of Reason into the sensate and physical realms has an important consequence for human beings, namely, that *all rational knowledge comes to humans through the senses*. We will now consider how this rational knowledge arises within us, and to do this, we will first study abstraction.

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.

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.

Diagram 3.12



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

Comment [D40]: 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 [D41]: 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 [D42]: 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 [LS43]: 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.

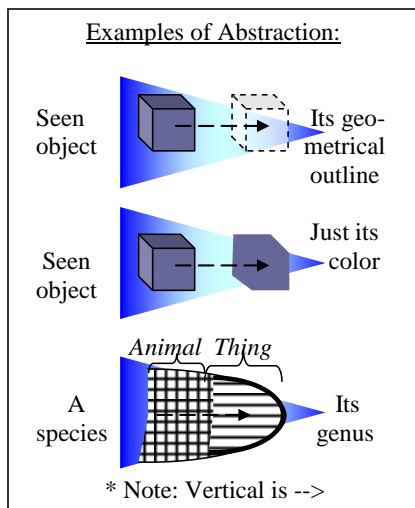
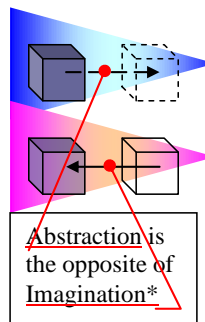


Diagram 3.13

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.

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



* in the physical mindset .

Diagram 3.14

Questions:

- 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.**
- 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.**
- 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.**
- 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.**
- Think. What are some other kinds of abstraction (you may use the word "abstraction" loosely)? **Ans: Abstracting from using two, three, or**

Comment [LS44]: 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 [D45]: We often want to figure out what is essential to something in order to figure out alternative possibilities and ways of doing it.

Comment [D46]: That Force is like Sight, see Diagram 5.2.

five senses in interacting with somebody to only using one 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).

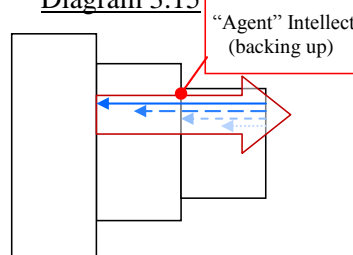
Comment [D47]: We will consider how to do in the next section.

2. Transition to human rationality: the Agent Intellect

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. 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, 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 rational

Diagram 3.15



Comment [LS48]: 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 [D49]: 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 [LS50]: 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 [LS51]: (and vegetative too, though this aspect of it isn't important here.)

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.

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, 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 object in which to exist.

Comment [D52]: cf. John 3:6-8, (also 1 Cor. 15:50).

Comment [LS53]: “Significant” means ‘making to signify’ or ‘making a sign.’

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 [D54]: Irony and jokes are good examples of abstraction occurring totally within the rational level.

Chapter III. Naming and Signification

Naming and Signification form the real connection of Intellect to the lower (sensate and physical) levels of nature. The ideas of naming and signification deal with the fields of Semantics and Semiotics. 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.

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). 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*.

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

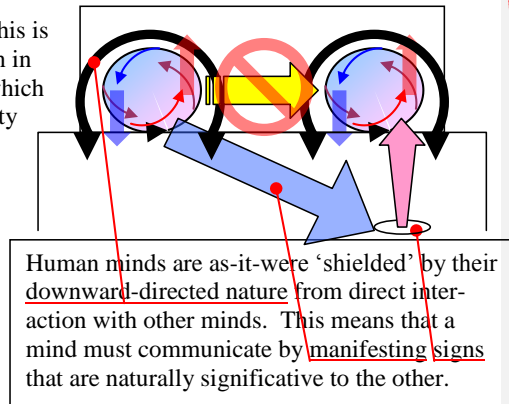


Diagram 3.16

Comment [D55]: 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.

Comment [D56]: 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.

Comment [D57]: Ask the students what this sort of language is lacking. [Ans: The word “is” and a regular syntax or ordering of subject – copula – predicate.]

for its existence (as the savage individually proves), nevertheless language and 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 concentrated downward on the experiences that it has within this body, including what can be perceived thru its senses. Thus we need language—experienced sensately—to communicate our thoughts.

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 breakdown / 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.**

Comment [D58]: 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).

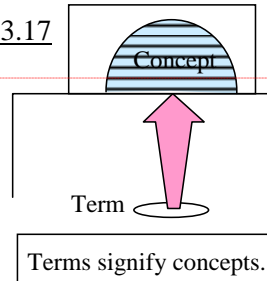
Comment [D59]: Mature adults have this problem, when they try to convey their mind to another: It isn't that they have nothing to say, but that they have too much to say, and that they must decide what to forgo and ‘pass over’ in the interest of time, and of keeping their audience's attention. In such 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 [D60]: 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 [D61]: cf. Paul's description in II Cor. 12:2 of a person hearing words in the 3rd heaven that no human may speak.

2. Terms and Concepts

Diagram 3.17



A general name for a name or word is a “term.” A term is a word that signifies a concept. What is a concept? Concepts (or ideas) are substances at the rational level. Just as sense and physical objects ‘hold their shape,’ so our ideas ‘hold their shape,’ and indeed hold them longer than the physical and sense substances to which we are more accustomed in our physical world. 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.’ 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), 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 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 sense and physical realms, as well. Just as we can have concepts of physical things, we can also have concepts of sense actions such as “Running,” “Booming,” “Blue” or “Tasting.” In these, the intellectual idea or concept enters into a sense 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 humans (who have rational Intellects), and not animals. Lastly, we can have concepts of purely rational things: “Justice,” “shame,” “wanting,” etc. In all of these the term signifies a concept that describes that action.

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

Comment [D62]: Remind the students that in Diagram 3.17 at right, the top box represents the rational level, and the lower box the sense level.

Comment [D63]: We see then that part of the process of Intellect entering into lower levels is that intellectual substances (ideas) enter into physical and/or sense substances. See Diagram 3.18 below.

Comment [D64]: A sign of the fact that we have intellectual (rational) concepts for these is that we readily associate them with other non-sense, purely intellectual concepts. Thus we associate ‘running’ with ‘campaigning,’ ‘blue’ with sadness, and ‘tasting’ with first experiencing (as in “tasting defeat”).

Comment [D65]: 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, and so we can conclude that it cannot have arisen there naturally and organically; rather, it had to have been put there by God.

‘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.’ 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, of sorts**.

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.

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) sensible **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**).

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. Thus, Luther held that God could justify a sinner simply by calling him “good,” even if he was really bad.

Comment [D66]: Monkeys and parrots probably have a very strong Imagination, and take playful enjoyment in effectively replicating a sound.

Comment [D67]: 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 ...)

Comment [D68]: 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 ...)

Comment [D69]: 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 [D70]: 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-t ...)

Comment [D71]: 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 change ...)

Comment [D72]: Here we don’t mean physically coloring it, but mentally coloring it.

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).

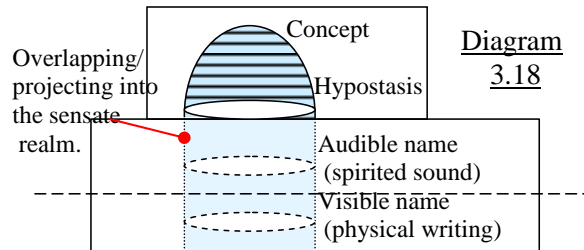


Diagram 3.18

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)

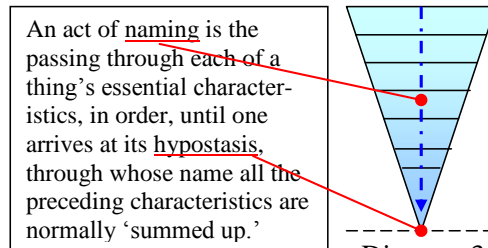


Diagram 3.19

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 were 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 its last determination, “Mark,” and thus names are best visualized at the very bottom of an essence (cf. Diagram 1.10). 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

Comment [D73]: 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 [D74]: The word “that” substitutes for the first, most general determination, “Thing.”

Comment [D75]: 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.

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 empatterment.

Naming can be direct or indirect. Only sensate phenomena—recognized word-sounds or letter-patterns—occurring in someone’s **most personal** 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 *conceptually distinct* (i.e. by a *distinction of reason*, cf. Diagram 3.39). 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.

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**

Comment [D76]: 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 [D77]: 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 [D78]: For instance mathematical signs are often unknown to non-mathematically minded individuals.

Comment [D79]: “Animal” and “deer” are only conceptually distinct, since they may both belong to the same thing.

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 a sensate thing.
 - 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? **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.

Comment [D80]: 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).

Comment [D81]: 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 5.3.3 and 5.1.4). 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 [D82]: Phantasm comes from Gk. phaino (φαίνο), which means "to shine." This is the same root from which we get "photon," the name for a particle of light.

4. Signs

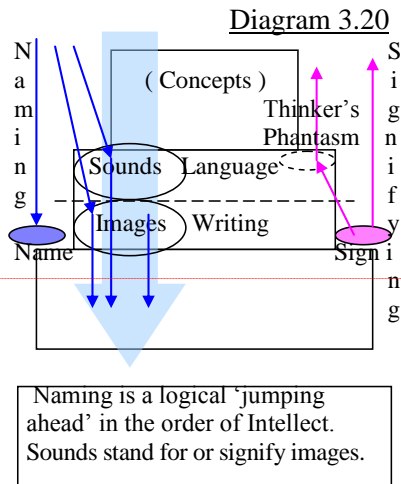
A sign (or name) is something basic, yet having potent value to signify a higher rational concept. Signs can signify things directly or indirectly. Direct signification occurs only in the speaker's mind: A particular rough-and-hazy imagination or sound, known as a **phantasm** is the highest and closest sensate approximation that someone can have to a concept. 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.

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). All of 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,

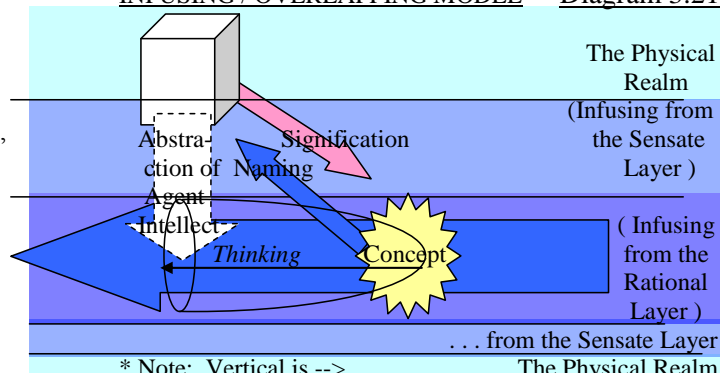


Comment [D83]: The concept enters into the sign, as a consequence of the nestling: Thus the rational concept *enters into* the sensate or physical substance. Consequently language on the sensate layer is a mere container for, or sensate analogue to higher mental processes.

Comment [D84]: 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-mumbblings, phantasms, etc.) and instead—by the Light of the Intellect—'sees' the various concepts directly in the letter-patterns written on the page.

Comment [D85]: 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 nature." 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").

INFUSING / OVERLAPPING MODEL **Diagram 3.21**



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.

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.

Proper Vocabulary Usage:

It is important that names, and concepts be clearly distinguished from one another. When two names signify the same concept, they're 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 [D86]: 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 [D87]: 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 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 [D88]: 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.

Comment [D89]: This is why the verb "runs" (present tense) can be replaced by "is running" (present progressive tense).

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, but it may be an existence only in the mind (e.g. as in the sentence "The hefalump attacks.").

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).

Comment [D90]: Concepts are always simple.

Comment [D91]: 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.

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*. 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.

Comment [D92]: 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 [D93]: This is why books are divided up into paragraphs, sections, chapters, units, etc.

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 / 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 [D94]: 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 [D95]: 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 an extra element of Potency), whereas the rational word soon disappears from the mind, as new thoughts arise.

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. 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. 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. 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 creation (cf. Diagram 1.10-1.12), in which all things are implicitly contained, and able to be known.

Comment [D96]: 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 [D97]: 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 [D98]: 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 [D99]: 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, 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 [D100]: 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.

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. 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).

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

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.’

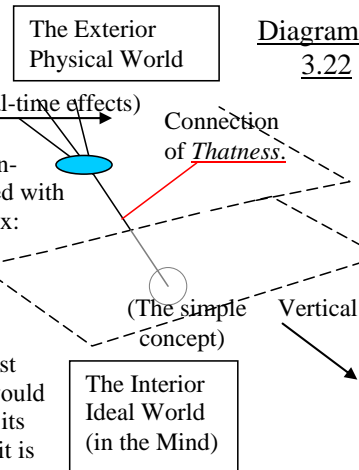
Comment [D101]: By real, we do not mean “actually existing” (as if ideal things don’t exist, whereas these do). Rather, by real, we mean *re-al* or “thing-ly” (from Lat. *res* “thing”): ‘Real’ is that which has to do with tangible, touchable things, whereas ideal has to do with ideas. Indeed, both the Ideal and Real worlds would be considered ‘real,’ if you are defining ‘real’ as ‘existing.’

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.

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 in a particular 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: 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 modification 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*’ 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!*”

We see then that when intellectual values enter into the physical world, they tell us *what* something is, and nothing 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; in its commanding forcefulness, in its logical deductions (as we shall see when we



Comment [D102]: 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.

Comment [D103]: 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.).

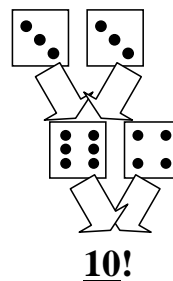
Comment [D104]: Only people with photographic memory are able to recall real-time imagery as well, so as to mentally ‘put themselves there’ again, at the very event.

Comment [D105]: 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 [D106]: 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 [D107]: 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.

Diagram 3.23



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.

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 3.22, 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—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.**

Comment [D108]: 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.

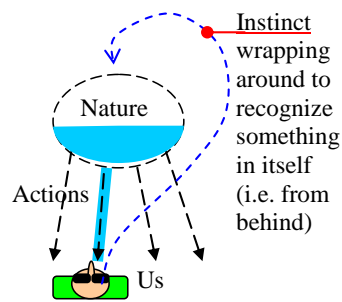
Comment [D109]: The moment that a person thinks up an idea, that idea exists, and will exist forever. Many such ideas are found in nature, and these have to be considered to have been thought up by God (and/or His angels through whom He works). After all since God foreknows everything that will ever 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.

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, Epicurism, 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. 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.

The problem of subjectivity can be solved by showing that the Senses are 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 3.24



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 [D110]: One observer says "that's a horse;" another observer who is nearby and blindfolded 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**

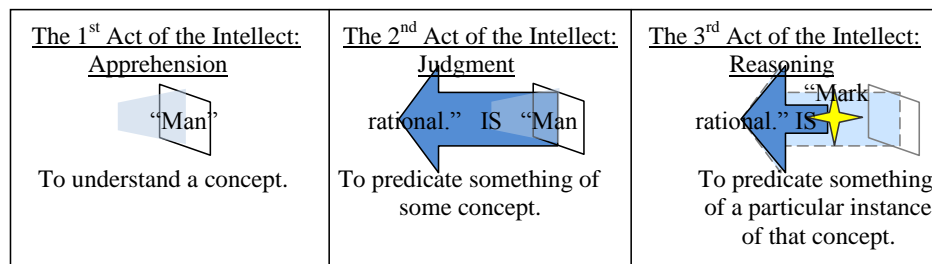
Instinct (i.e. that *something* of that concept was there, cf. Diagram 3.24).

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 3.25



Apprehension (understanding of a simple concept) 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. 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 to conceiving concepts, we will first study conceiving concepts.

Comment [D111]: 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 [D112]: 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 [D113]: The copula is the word "Is," which 'copulates' or connects the subject-term to the predicate-term.

Comment [D114]: 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.

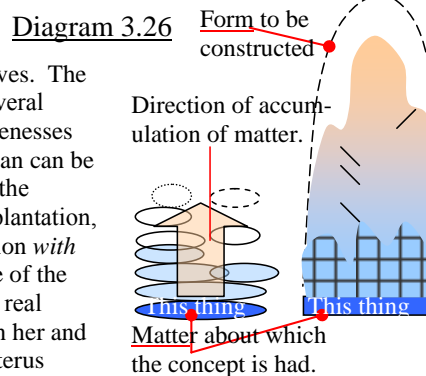
Comment [D115]: Really, conceiving concepts is the real first act of the Intellect, since it is most equivalent to the first act of the Will—Love.

Conceiving Concepts

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. Naturally a woman can be said to “conceive” a child at fertilization when the parents’ two gamete cells unite, and also at implantation, when the woman receives 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 matters—all part of a general form—in regard to a thing, while preserving that form’s unity of substance. 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; the wool is what it’s for; 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 in oneself, one has a ‘matter’—often supplied by the senses—about which one is concerned, and then one ‘thinks’ a form *at* that matter which somehow respects or regards that material. For example, one may think forms such as “useless,” “problem,” “useful for,” “belongs to _____,” etc. One also is often mindful of some end or goal that one wants to accomplish, such as what one *would like* to think about it, or what one truly *should* think about it. Desiring to accomplish this end, the Will often suggests forms—that most conduce, or ‘lead to,’ or ‘grow into’ that intended end. However, it is important to think those forms that naturally and justly apply to the matter—according to the ordering of Truth—even if it isn’t the end or understanding that one (or others) would like it to have. Truth has natural form(s) to think about every matter, and those who seek the truth, ultimately have much better (and more useful) concepts than those who don’t.

The conceiving of concepts is a function of one’s lower reason (I-II.15.4.ad1), and thus goes on almost sub-consciously. The lower reason is as-it-were a low-down, small-scale thinking machine (probably assisted by brain activity) that constantly churns out ideas in one’s mind as one is mulling over mysterious matters or questions. In the lower reason, one often presents a variety of possible explanations for something (see Section 3.8.2 on hypotheses or theses), simply by ‘throwing them at it.’ Many of them don’t stick and simply pass away. However, some of them do truthfully ‘stick,’ and it is these that we regard as correct, and leave upon the matter, thereby *taking them for granted*. We then proceed to think more thoughts about the matter, casting and attempting to mold



Comment [D116]: We regularly do this much for our children when we read them stories about sheep, and make sheep sounds, etc.

Comment [D117]: 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 [D118]: In Diagram 3.26, 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 [D119]: Point out to the students that the top of Diagram 3.26 becomes slightly pink, the color of Will in this textbook. Thus the goal is the pre-imagined or pre-known form that one would like the concept to end up as.

Comment [D120]: as in ‘more robust,’ ‘more complete’ and more ‘generally applicable.’

Comment [D121]: Accordingly then, one often has lots of ‘contingent or temporary’ concepts, that were just created for brainstorming purposes.

Comment [D122]: 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).

these new thoughts not just upon 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. 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

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

‘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

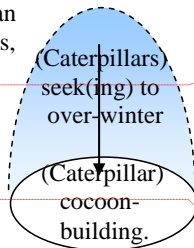


Diagram 3.27

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.” 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).”

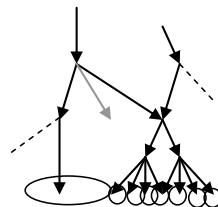


Diagram 3.28

Understanding reaches its final perfection in complete sciences known by epistematic knowledge. This will be covered later in Section 3.8.1.

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**

Comment [D123]: Explanation of “Throwing:” We ‘throw’ the supposed explanation in a downward manner (see black downward arrow in Diagram 3.27) so that the explanation’s being is super-imposed 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 [D124]: 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 [D125]: 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”).

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. 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.
5. 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).**
6. Fill in the blanks: Just as _____ is the conclusion of conceiving an idea, _____ is the conclusion of learning. **Ans: A concept, an understanding.**
7. What is the difference between the two things that you answered in Question 6? **Ans: Concepts are simple and so they involve only terms; understandings are complex and thus involve statements.**

Comment [D126]: 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 [D127]: 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.

Comment [D128]: The whole assembly process is probably quite similar to the biological assembly of a protein, where the various secondary structures (helices and parallel strands and corrugated zigzags) bend and merge in 3D space into a complex structure.

Comment [D129]: 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 3.28). 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 [D130]: 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.

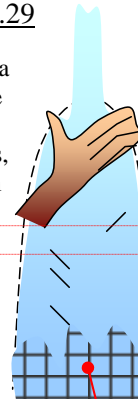
The re-shining of a form into you occurs in an essentially top-down way, even though the word (...)

2. Apprehension Itself

Diagram 3.29

Apprehension is very similar to the conceiving 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. In conception, the form arises or is formulated within you by yourself, that is, by your own willful 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 ‘grabs’ at it. This rational grabbing occurs in a vertical manner (cf. Diagram 3.29) and is completely spontaneous, but there is an analogous horizontal and sensate grabbing by which one must also ‘grab’ at the person’s audible



In apprehension you ‘grab at’ the concept as they speak its word.

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, you must do this horizontal grabbing as fast as you possibly can in order to keep up with the person's rational train-of-thought.

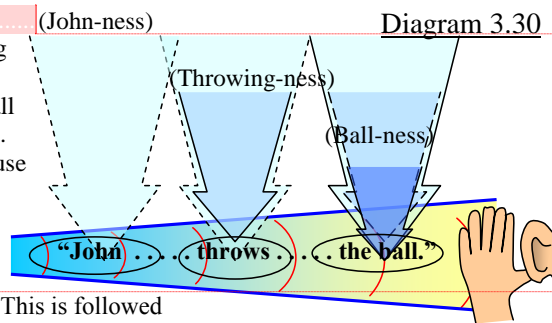
Of course this all presumes that there is a common understanding about what each word is to signify. Two words—and thus the concepts they signify—can be spoken univocally, analogically, or equivocally. Two terms are univocal when they signify exactly the same thing (e.g. “Roast the duck” and “Ducks fly”); 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.”).

You can also apprehend something unintended by, or even despite, the speaker's words. In apprehension you 'love' 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 '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 actually intend 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 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



Comment [D131]: 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 [D132]: After all, words are often exterior and superficial, and imperfect attempts at conveying the interior of what a person is really feeling.

Comment [D133]: Again, notice that the top of Diagram 3.26 is slightly pink, because that is the willed *end* for how the person would like their own idea to evolve.

Comment [D134]: In Diagram 3.30 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 [D135]: 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 [D136]: It isn't just an idea of *throwing* here, but an idea of *John throwing*.

Comment [D137]: Thus every word that you add to a sentence, *specifies* it and 'narrows it down' a little bit more.

the sentence narrows down (or *specifies*) the sentence, both for itself and for all the other words that follow.

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 Question 2 is higher-order apprehension?
Ans: Part (b).
4. Identify the following 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.’
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. 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.

Comment [D138]: 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 [D139]: A British Billion = a million millions (10^{12}). A U.S. Billion = a thousand millions (10^9).

3. Characteristics of Apprehension

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.” 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. However, under most circumstances all knowledge comes first through the senses.

After all, the senses—like the Intellect—are capacities to *receive*. 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.

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 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.

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

Comment [D140]: This section is largely review, and may be omitted, if so desired.

Comment [D141]: 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 sensed (and intellectual as well). A better restatement of this saying would be “All [natural] knowledge is occasioned through the senses.”

Comment [D142]: 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 [D143]: 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).

Comment [D144]: 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).

Comment [D145]: cf. diagrams 3.20 and 3.30.

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.**

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. 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. 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

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

Comment [D146]: Here we don't mean an intellectual word, but an audible, spoken word (in some language).

Comment [D147]: 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 [D148]: 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 [D149]: Alternative answers: "... in another dimension;" "... in itself;"

Comment [D150]: i.e. term-concept clusters (Here we're talking about sensate and audible words, not rational words.)

Comment [D151]: 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 [D152]: 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.

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.

The distribution of Terms in Common Propositions:
 A: All A (D) is B (U).
 I: some A (U) is B (U).
 E: No A (D) is B (D).
 O: some A (U) is not B (D).

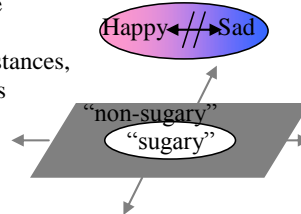
In terms of *quality*, a term can either be positive or negative. While it is obvious what a positive term is, a thing can be negative in one of two ways. A term can be another term’s contrary, or it can be another term’s contradictory. A contrary is that within a genus which is most opposite to another term. 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. 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 <i>irrational</i> B and <i>non-B</i> moral and <i>a-moral</i>	happiness and sadness A and Z moral and <i>immoral</i>

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 predication must necessarily be true, and the other must necessarily be false.

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).

Diagram 3.31



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.**

Comment [D153]: In regard to the box at right, reassure the students that in the next chapter we will learn what “A,” “E,” “I,” and “O” refer to, and so they shouldn’t worry about it now.

Comment [D154]: 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 [D155]: 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 [D156]: Adding the prefix “Non-“ is the most standard and sure way of making a contradictory.

Comment [D157]: “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.’)

Comment [D158]: Usually the thing classified will fall into the contradictory beginning “non-.”

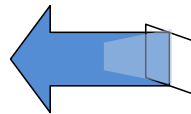
Comment [D159]: To get even more precise, two terms can refer to the same concept, but two separate concepts cannot be signified by the same term.

- 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 3.31.

Comment [D160]: 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 [D161]: 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."

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" 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**. 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 [D162]: 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 [D163]: 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.

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 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” (*De Interp.* 16a3.)

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. 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 3.30 and 3.32-3.33, 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.

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, the sounds are as-it-were ‘in pieces,’ and not linked together in any way.

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 1.10). 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

Comment [D164]: 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.

Comment [D165]: 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 [D166]: In diagrams 3.30 or 3.33 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).

Comment [D167]: 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 3.33 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 3.30) never arrive “simultaneously” for them; they just don’t think to ‘stack up’ concepts, like that.

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) 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.

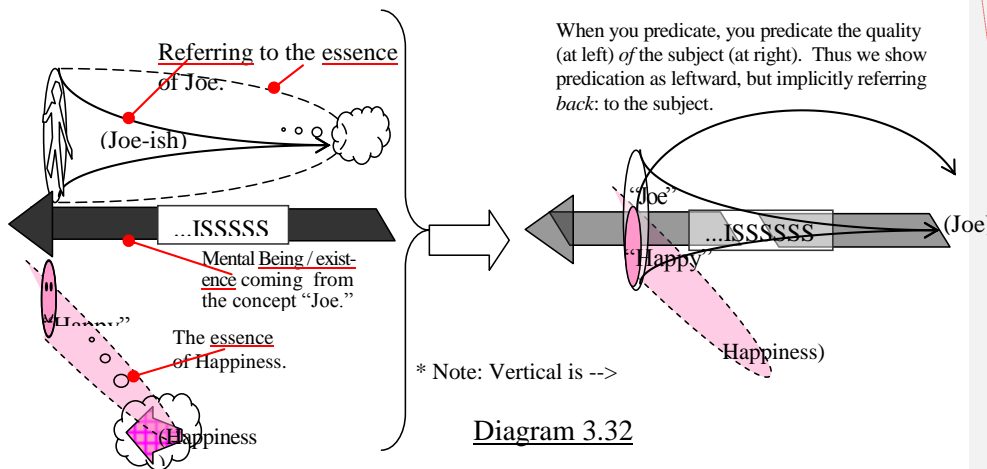
Predication in use

To predicate means to speak a predicate about something (some subject). 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-dikhet”) 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.

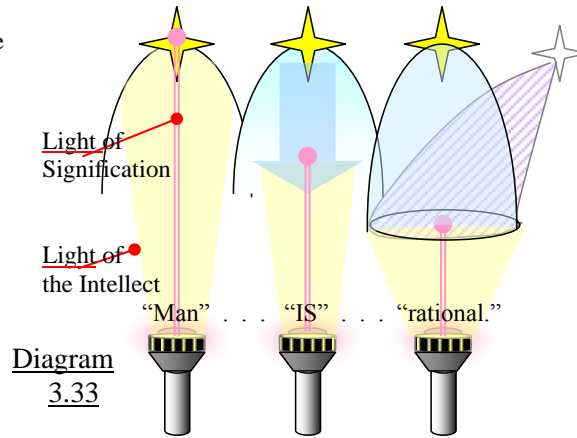
It is important to note that the verb “is” does not function like the equals (=) sign in math. In math, because of the Commutative Property of Equals, different sides of an equation can be flip-flopped without loss of truth-value (e.g. $5+3=8$ is the same as $8=5+3$). However, the same cannot always be done with the word “is.” The word “is” is often inherently directional. 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 have any problem with 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).

Comment [D168]: 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. Diagram 1.9). 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 [D169]: 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*).



In Diagram 3.33 we have the laser-pointer/flashlight-signification model of predication: “Man . . . is . . . rational.” What ‘is-ing’ are we talking about? The ‘is-ing’ that comes from humanness (the star at the top) and infuses “man”/all men. What “rational”-quality are we talking about? The part that comes from its idea of rationality (its star) and also infuses into “man”/these men. Thus the unity of substance



are speaking, provides solid context, while the 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 know the entire sentence in one simple act of comprehension, superimposing copula upon predicate and subject 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:

Comment [D170]: 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 [D171]: If necessary, use Diagram 3.30 to explain to the students how the “in front of” (or before-ness) is “in front of” in a vertical sense.

Comment [D172]: 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.).

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 3.32)? **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 [D173]: In the same way, the Intellect ‘fleshes out’ concepts (see Question 3 in Section 3.5.3, above).

Comment [D174]: 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 “*ipsam subsistens esse*,” that is, Being itself, the “I Am Who Am,” who is God.

Comment [D175]: 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).

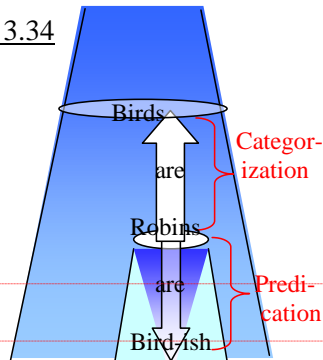
2. Other Kinds of Predication

Categorization

Diagram 3.34

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 of 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.” 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.



Comment [D176]: These downward acts of intellectual knowing are symbolized by the blue gradients in Diagram 3.34 (in which what is higher is known better—and is here represented as bluer—than what is lower). The first act begins from the subject “robins;” however, “Birds” (since it is a greater class) cannot be a lesser characteristic of robins, as normally happens in predication. Thus we need a second downward act of knowing to begin from “birds,” and then know robins *in* those birds. Thus we have effectively ‘converted’ (to be covered in Section 3.6.5) or *switched* subject and predicate.

Comment [D177]: 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 [D178]: Belonging to is an essential relation (cf. the use of “has” in Diagrams 1.9 and 1.25), 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.”

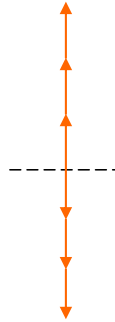
Comment [D179]: It will be seen in the next section that of the four kinds of propositions, that which is most natural to categorization, and in which categorization most stands out, is the A-proposition (i.e. a universal affirmation, “All ___ is ___”).

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 1.9 and 1.25).

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 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 3.35

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



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*. 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*. 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) ‘is’ some accident, it also ‘has’ that accident (thus going against the direction of having shown in Diagram 3.36 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:

Comment [D180]: At least the first of the two acts of knowing in Categorization. (cf. the comment three comments before this one).

Comment [D181]: 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*.

Comment [D182]: 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 [D183]: Ask the students “How do you know propositions are existential?” [Ans: Because they have the word “is” in them.]

Comment [D184]: 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 [D185]: 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 [→].”

Primarily	Primarily
<u>Existential (standard) Format:</u>	<u>Essential Format</u>
The roses are red.	Red are the roses.
“My brother is (called) Joe.”	“Joe is my brother.”
Horses are animal (i.e. living)	Horses are animals.

Comment [D186]: 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).

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*)
 - a. “The monkey is happy.” **Ans: The monkey has happiness. 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 mammalness.” “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.’

Comment [D187]: 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 [D188]: He really exists in a ‘Joe-ish’/‘Joe-y’ sort of way.

Comment [D189]: 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 [D190]: “Animal” means having *animus* or breath, i.e. “living.”

Comment [D191]: 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 example that categorization is primarily essential, not existential.

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.

Comment [D192]: 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 [D193]: Students must memorize these.

Standard Form	Alternate Forms:
A: All A is B	A IS B! (categorization)
E: No A is B	All A is non-B A IS NOT B! (denial)
I: Some A is B	Yeah, A's B (admittal)
O: Some A is not B	A isn't always B (objection)
<i>Tricky-O</i>	

All A is not B
Not all A is B.

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.

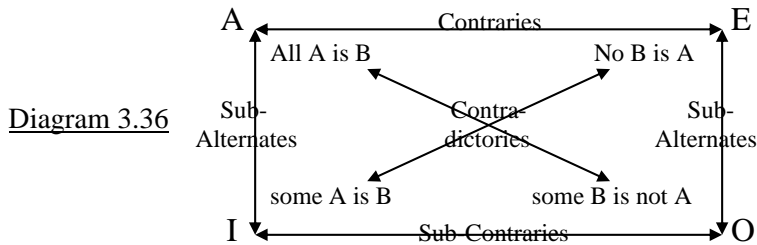
Explanation: It is important to keep in mind that a “Not” particle can do one of three things (cf. Diagram 3.59): It can negate the quantifier (All), the copula (IS), or the predicate (non-), with different results in each case. If it negates the predicate, it is obviously an **E** proposition (All A 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 [D194]: 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 [D195]: Here “No” is short for “None of.”

The Square of Opposition

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



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). 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:

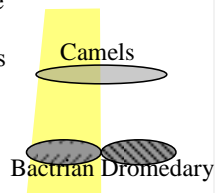
1. Label the following propositions as A, E, I, or O:
 - a. "Some moose have horns." **Ans: I.**
 - b. "No cows are horses." **Ans: E.**
 - c. "Some cars are not four-door." **Ans: O.**
 - d. "All men are judged." **Ans: A.**
 - e. "Not all men are found guilty." **Ans: Tricky-O.**
 - f. "All Republicans 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?
 - 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.**

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. 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

Diagram 3.37



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 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.

Proper Vocabulary Usage:

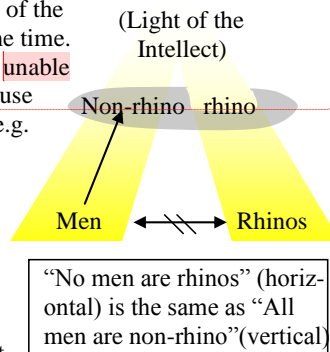
The word “*qua*” (from Lat. “by [means of] which”) is a common philosophical term, generally translated “as.” It has to do greatly with qualities. For instance if I know a man *as* yellow, I am knowing him by means of yellow (which is penetrating through and infusing him).

Denials

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 the two not 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-rhinoic.” 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); it only exists with reference to a concept that does exist. However it does exist mentally in the Intellect, and this is why we can name it.

Diagram 3.38



Comment [D196]: It is almost as if there is a magnetic repulsion between the two.

Comment [D197]: 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.

Distinctions

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: I can either distinguish real things (and *a fortiori* their essences inside of them as well), or I 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

Comment [D198]: In other words, even though you can delineate out an essence, it doesn’t necessarily exist.

Comment [D199]: (since their essences are inside of them)

other, and thus you must make an act of abstraction (recall Section 3.2.1) in order to mentally distinguish the two.

The Existential Fallacy

The existential fallacy comes from the fact that essence does not necessarily imply existence. “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-callamers,” 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.

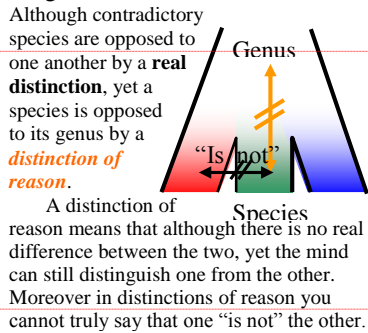
The utmost that denial can accomplish is to define some essence as *not* something else. However just because you define or delimit an essence as separate from something else (a horizontal separation) doesn’t mean that it *exists* (a vertical connection).

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 3.40 below is downward-inclined, just like I-predication, whereas categorization is supposed to be inherently upward-inclined (cf. Diagram 3.34). 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 categorial.

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



Comment [D200]: Point out to the students how “Animal” and “Thing” are separated by a mental distinction in Diagram 3.13.

Comment [D201]: 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 [D202]: This is known as a *double negative*.

Comment [D203]: 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 [D204]: 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 [D205]: Point out to the students that in Diagram 3.40, 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 [D206]: 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 [D207]: 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 [D208]: Qualities comes forth from substances (cf. Diagram 3.43).

Diagram 3.38 above); E-predications are horizontally or downward inclined since here 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 upward. 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).

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 3.38): 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 3.38). 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 which we don't know, then the only way we can get from what we know to what we don't know is if what we know fully *belongs* to what we don't know. Only universal propositions are able to classify one thing as fully *belonging* to**

Comment [D209]: 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 3.27), “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 [D210]: 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.

another, thus only universal propositions can represent a true advance in knowledge, a true discovery of a more removed and higher cause.

5. Simple Operations in The Logic of Propositions

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. 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.

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.

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. 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

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

Comment [D211]: 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 [D212]: Refer if necessary to the box showing common distribution patterns back in Section 3.5.4.

Comment [D213]: 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.

“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 [D214]: 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 . . .
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 we might call the logic is in the *celestial logic*. If the substance begun from is a class or group (“___s”) of physical things, then the logic is in the *earthly realm*. Both kinds of logic work in identically the same way, using the same syllogism-structure, as is clear from the identical similarity

Comment [D215]: 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 [D216]: 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 [D217]: 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).

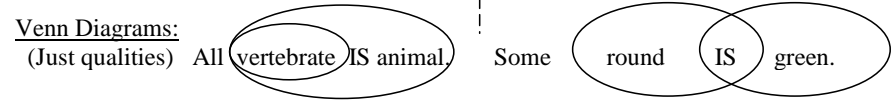
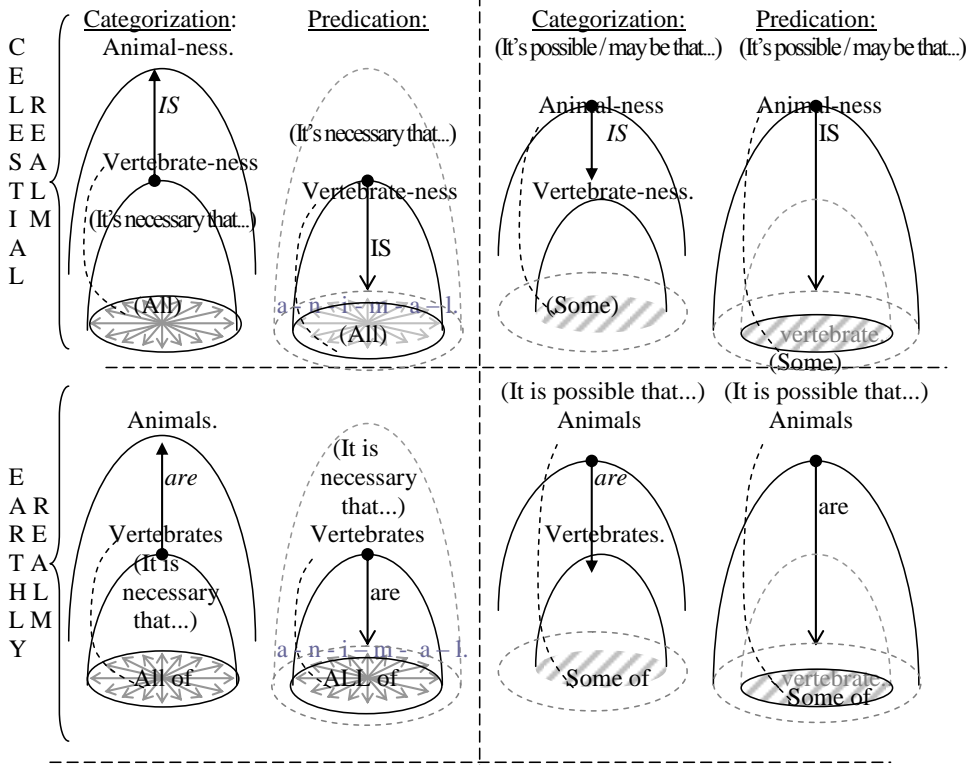
between the upper and lower parts of Diagram 3.40A and 3.40B, below. The only difference between them is that one—logic in the celestial realm—more closely simulates how we think of things (i.e. dealing in pure forms and omitting any quantifiers), and thus proves truths in themselves—i.e. absolutely 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:

Diagram 3.40A

A – Propositions

I – Propositions:



(Diagram 3.40 continued on the next page . . .)

Comment [D218]: 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 [D219]: We could call these "formal logic" and "material logic" (see labels along left side of Diagram 3.40A 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."

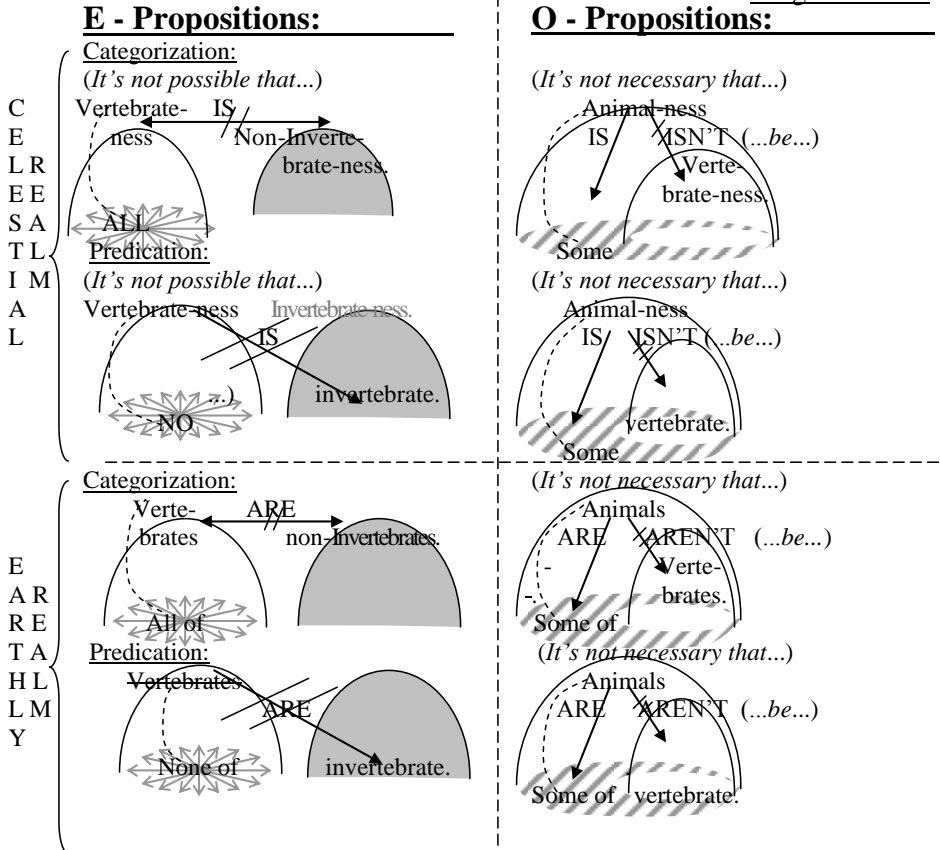
Comment [D220]: Go over this diagram with the students. In each case begin with either the quantifier at the bottom, or the "It is necessary that" phrase, and follow the dotted line and then the arrow. Doing this will give a complete proposition in standard form. In the top-left quadrant in particular, 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 [D221]: Earthly logic (in the lower halves of Diagrams 3.40A 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.

Comment [D222]: 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.

(Diagram 3.40 continued from the previous page)

Diagram 3.40B

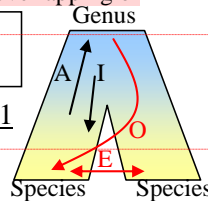


Venn Diagrams:
(Just Qualities) No round is square. Some rectangular is not square.

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 the 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 3.41 at right that

Conceptual representation of the four kinds of propositions.

Diagram 3.41



Comment [D223]: 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 [D224]: 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 [D225]: 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 [D226]: 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.

the four propositions map all four possible relationships between a genus and its multiple species.

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 [D227]: 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 [D228]: 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 3.36).

Comment [D229]: 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 3.40B (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.

7. The Four Predicables

Besides quantity and necessity or possibility, there is a third way to think of propositions, known as the four predicables. The four predicables are the four things that can be indirectly implied by making a proposition. The four predicables are genera, accidents, properties, and definitions.

A genus (from Lat. for "kind" or "type" or "class") is a higher class into which lesser forms or classes may be placed (or categorized). The genus of man is primate; the genus of primate is mammal, the genus of mammal is vertebrate etc.

We can distinguish between a proximate genus—the nearest, narrowest grouping possible—and a summum genus—the broadest, most universal grouping possible. If a genus is founded on accidental similarities between its members, it is known as a set. If it is founded on essential similarities it is truly a genus. Thus, to a certain extent, genera come from above, whereas sets arise from below.

A property is a quality that permeates through an entire class, but is not primarily essential to the class (usually because it is primarily essential to a higher, broader class). For instance, warm-blood-ness is a property of humans, because it is present among all humans, but is not primarily essential to humans, so much as it is primarily essential to *mammals* (a broader genus). Genera and properties are related to one another because we find that each genus contributes its own special property to the classes and individuals within it.

An accident is a quality that is present in a class, but is in no way essential to it. Accidents usually belong to only some of the members, and not others (If it belongs to all the members, it is probably a property).

A definition (or distinction or 'act-of-delimiting') is a separation that occurs between distinct forms or species within a class.

Each species in a genus has a specific difference, namely, the quality that distinguishes it (or makes it 'special'), as different from the rest of the members of the genus. The specific difference is an extra quality in addition to the formula of the genus. Thus if the genus "mammal" is that which is

Proper Vocabulary Usage:

The following Latin words have unusual plural forms: The plural of *genus* is *genera*. The plural of *species* is (again) *species*.

Genera are essential to their members, so each thing will have only one proximate genus; sets are merely accidental to one another, so there can be a nearly infinite number of sets.

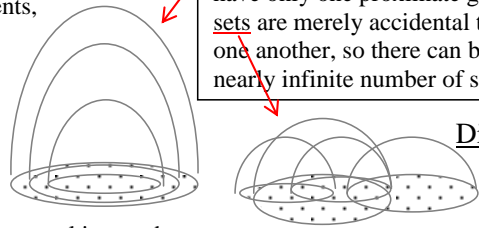
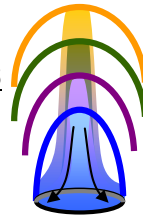


Diagram 3.42

Diagram 3.43



Each higher genus contributes its own special property to the members.

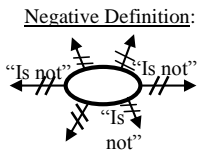


Diagram 3.44

The standard way to define is to cite a thing's genus + specific difference: Thus humans are "rational animals." "Rational" is the specific difference, "animals" the genus. By citing the genus as well, we remove the necessity of having to define something by reference to ALL the things in the universe that is not, and instead permit ourselves to only define it by reference to the things in that genus that it is not.

Comment [D230]: After this section, give the students the handout "The Four Predicables Continued" (in Appendix).

Comment [D231]: i.e. the lowest genus that is still 'above,' and thus still able to be considered as a genus.

Comment [D232]: Here, Lat. *summum* means "highest."

Comment [D233]: For instance, the genus of mammals contributes the property 'milk-producing' to all its members. The genus of polygons contributes the property of 'straight-sides-having' to all its members. The genus of butterflies contributes the property 'butterfly-ish' (or some such quality) to all its members.

Comment [D234]: Definition comes from the Latin (*de* "from/about" + *finis* "end").

Comment [D235]: Sometimes the specific difference is called a *modification*, because the genus just by itself is thought of as rather 'ordinary,' whereas the specific difference comes along secondarily, and receiving that base, ordinary kind of being, also adds something additional to it, thereby *modifying* it. Thus in the order of existence the genus is prior and simpler, and the specific difference is secondary and additional.

Comment [D236]: Really, the specific difference is an extra property which unlike most properties *is* primarily essential to the class in question, the species.

“warm-blooded, chordate, living, and thingly,” its species “man” would be that which is “*rational*, warm-blooded, chordate, etc.” Here, *rational* is the specific difference, and it is a property that belongs only (and thus *primarily*) to men. Another species would have a different specific difference. “Specific differences define both the one species that has it *and, negatively*, the many species that don’t have it.

How the Four Predicables relate to the Four Propositions:

The four predicables relate to the four propositions in the manner shown at right. We will next give some examples of how the two are similar.

A implies a Property.
E implies a Definition.
I implies an Accident.
O implies a Genus.

Definition - No A is B. *No horses are men. / No horse-ness is human.* Horseness helps negatively *define* men. How does this happen? The specific difference of ‘horse-ness’ (That they alone of all animals are large, ride-able, four-footed runners that eat oats) helps distinguish them from ‘men,’ and from many other animals as well. Of course, you’d need to add the specific differences of all these others animals to completely distinguish man in his own right.

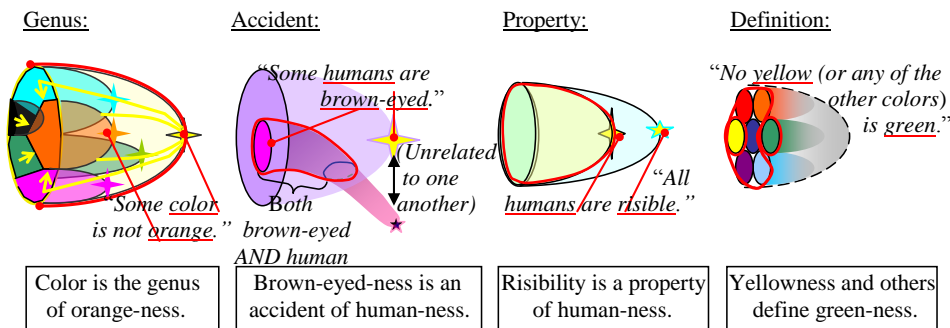
Genus - Some A is not B. *Some animals are not men. / Some animal-ness is not human.* If some animals are not men (and some are men), then ‘men’ must be one of the species of ‘animal,’ and ‘animal’ is the genus of ‘[hu]man[ness].’

Accident - Some A is B. *Some men are 11-fingered. / 11-fingered-ness’ is an accident of ‘humanness.’*

Property - All A is B. *All men have a sense of humor. / All humanness is risible. / ‘Risibility’ is a property of ‘humanness.’*

We can then diagram these in the following ways:

Diagram 3.45



When we diagram them in these ways we see that each of the predicables bears an uncanny resemblance to each of the four propositions. In fact, they are the same thing. Knowing this, we can better understand what it is that we are doing when we predicate, and where such concepts as genus, species, etc. come from (i.e. from Intellect and the inner mystery of how *word / λογος* operates).

Comment [D237]: It does not belong primarily to lawyers, or adults, or Lithuanians, but to *men*.

Comment [D238]: Of the two of these, negative defining is more essential and important because sometimes the members of a class will not have any one distinguishing characteristic proper to them alone. For instance, red is only what is not green nor blue; blue is only what is not green nor red; and green only is what is not red nor blue. Thus the only way you can define red is negatively, not positively. This is what would be expected, since the E-statement, to which definition is inherently connected, is a primarily negative (No ___ is ___), not positive (All ___ is non-___) statement.

Comment [D239]: Either form of the predication can be used. One deals with beings, the other deals with essences.

Comment [D240]: Point out to the students that in the examples of the two previous negative predications (E/definition and O/genus), “men” fell into the predicate. Here in the examples of the positive propositions (A/property and I/accident), “Men” is placed into the subject. If we were instead to again place man into the predicate, you might think that an accident was actually a property. E.g. If you said “some two-legged ones are men,” someone might be tempted (perhaps correctly) to say that although “some two-legged ones are men” (as stated), yet “all men are two-legged,” and therefore two-legged-ness is not an accident, but really a *property* of humans. However if you clearly state that only “*some men are two-legged*” (by putting ...

Comment [D241]: Risibility is the ability to laugh (a.k.a. a sense of humor).

Comment [D242]: Ask the students: “Does the statement ‘Some color is not orange’ imply that some IS orange?” [Ans: Yes! This is how genus is different from definition. In a definition, none of the one quality is the other, but here some is.]

Comment [D243]: Tell the students, “Convert the statement to ‘Some brown-eyed are human.’ Is this also true? [Ans: Yes! An I-proposition always converts to something equally true, which tells you ...

Comment [D244]: Generally it is held that only humans laugh (and nothing else). Some might take the position that hyenas, or crows, or even God laughs, but this is probably not the same sort of laughing as human laughter. ...

Comment [D245]: Tell the students that the better way to think of this E-proposition is “(All Yellow) is not green.” We here use parentheses to avoid a potential ambiguity of a Tricky-O proposition. It is often helpful to think of the E- ...

Comment [D246]: Have the students compare this Diagram 3.45 with diagrams 3.40 and 3.41 above until they are convinced that the two are the same (i.e. that a genus = an A-proposition, that an accident = an I-proposition, etc.). Also, if desired ...

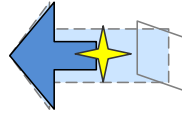
Comment [D247]: “Logos” is Gk. for “word.” It connotes the Greek understanding of word as ‘unfolding’ throughout time and multiplying, producing more and more species and other effects. Many Greeks (Heraclitus, the Stoics, Plato) had a ...

Questions:

1. What are the four predicables? **Ans: They are the four situations that characteristically arise between a genus and/or its species, as a result of one of the four propositions.**
2. Why are they called predicables? **Ans: Because if you are predicating, you indirectly imply one of them.**
3. What special property is contributed to human nature by the genus . . .
 - a. ‘animals?’ **Ans: Mobile.**
 - b. ‘invertebrates?’ **Ans: Backboned.**
 - c. ‘mammals?’ **Ans: Milk-producing / hair-having.**
4. Is a property always essential to a class? **Ans: Yes. It just isn’t always primarily essential to it.**
5. Is an accident essential to a class? **Ans: No.**
6. What kind of property is **primarily essential** to a class? **Ans: A specific difference.**
7. Which kind of definition is more of the nature of definition: positive definition (genus + specific difference) or negative definition (what it is *not*)? Why? **Ans: Negative Definition. The true nature of definition comes from the E-proposition, “No __ is __,” which is negative, not positive. Alternate Explanation: Even positive definition has implicit negative definition within it (i.e. by naming both the genus and the specific difference (S.D.), it is taken for granted that anything in that genus not having that S.D. is defined outside of it. Alternate Answer: The etymology of the Lat. word “definitio” signifies to delimit or “put an end to,” which is more a negative thing (concerned with the perimeter) than a positive thing (concerned with the center). Thus any definition which conceptually surrounds and ‘limits off’ something in any way is a satisfactory definition.**
8. For each of the four kinds of propositions, give an example in standard form, and show how one of the four predicables is implicit in that statement. **Ans: Answers may vary. Make sure that in the negative propositions (E and O) the students have the species defined in the *predicate*. Make sure that in the positive propositions (A and I) the students have the thing of which it is a property or accident in the *subject*. Cf. comment in the example (11-fingeredness) on Accidents, above.**

Comment [D248]: “Primarily essential” means not only that it always is found in the thing, but that it—more than anything else—is of the nature of *what* that thing is.

Chapter VII. The 3rd Act of the Intellect: Reasoning



1. Reasoning and the Syllogism

Reasoning is the 3rd act of the Intellect. Reasoning is a slow, methodical process by which we ‘flesh out’ the consequences of what we know. Whereas Apprehension and Judgment occur in the lower realms of human nature, reasoning takes place entirely in the highest level of human nature: the rational level (which is why it is called “reasoning”).

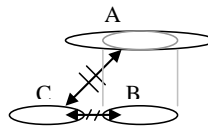
Comment [D249]: Human reasoning is discursive, meaning that it happens one thought at a time. By contrast, angelic reasoning is not discursive, but rather angels know what they know instantaneously—by a kind of intellectual sight. Thus human reasoning accomplishes by separate acts (2nd acts), what angels possess all at once (as a 1st act).

No matter what kind of modus the syllogism follows, it is still true that the A syllogism is a kind of ‘fleshing out of truth’ based on what is already known. For instance, if I haven’t yet considered all the relationships of A’s essence to lesser matters, I can start to figure it out on the basis of one thing that I already know B (B): If I know that All B is A (upward) and No B is C (rightward), then I can conclude that “some A is not C” (angling downward to the right).

Diagram 3.46

Even though it occurs purely at the rational level (which is silent and eternal), reason is not totally unknowable. Acts of reasoning can still be represented by combining propositions—its building blocks—in various ways, and these combinations can be diagrammed. Thus we can come to understand the paths of reasoning by carefully analyzing and diagramming the deliberate judgments that make up the reasoning process.

Diagram 3.47



An example of an act of reasoning.

The primary act of reasoning is the syllogism, which is a way by which from the knowledge of two known judgments we can come to the knowledge of a third judgment. There are many ways to reason based on the context, but the syllogism is unique because it enables you to figure out (infer) certain truths automatically without any outside contextual knowledge. A syllogism is thus a ‘figuring out’ of the peripheral consequences of the ‘natural thrust’ or ‘force’ of a proposition. For instance, if you say that “No C is B,” one of the consequences of this statement is that no *part* of B can be C either; so if you add the additional proposition that “some A is B” you can then conclude that *that* A is not C, either. We see then in this circumstance (the circumstance of some A being B), that the natural import of “No C is B” is also that “some A is not C.”

The first two judgments in a syllogism are called “premises,” and the last judgment is called the “conclusion.” One premise is called “Major” because it contains the “Major Term,” and one premise is called “Minor” because it contains the “Minor Term.” The Major Term is represented “P” because it forms the predicate of the Conclusion; the Minor Term is represented “S” because it forms the subject of the Conclusion. Besides these two terms, there is also a third term, called the “Middle Term (represented “M”) because it connects the two premises together.

There are four possible **Figures** of the syllogism, each with a different configuration:

<u>The 1st Figure</u>	<u>The 2nd Figure</u>	<u>The 3rd Figure</u>	<u>The 4th Figure</u>
<u>M is P</u>	<u>P is M</u>	<u>M is P</u>	<u>P is M</u>
<u>S is M</u>	<u>S is M</u>	<u>M is S</u>	<u>M is S</u>
∴ S is P	∴ S is (not) P	∴ (some) S is P	∴ S (would) be P
			∴ P belongs to S

* The three stacked stones (∴) is a symbol meaning “Therefore.”

The four Figures are written in this way to show that the 2nd Figure always proves a negative conclusion (E or O), the 3rd Figure always proves a particular conclusion (I or O), and the 4th Figure only proves something essential (though not necessarily existential). We see then that the 2nd, 3rd, and 4th figures are each deficient from the 1st Figure in some special way: The 2nd Figure loses the ability to prove positive propositions (~~A or I~~); the 3rd Figure loses the ability to prove universal propositions (~~A or E~~); and the 4th Figure loses the ability to prove what is actually the case (~~is~~) and instead only proves what **essentially** would be the case. We can therefore gain all necessary insight about the syllogism, simply from studying the 1st Figure.

How to determine Figure

Generally to determine what figure a syllogism is in, you first look to see where the Middle Terms lie. If they are both on the right side, it is the 2nd Figure. If they are both on the left side, then it is the 3rd Figure. If they are both diagonal, one from another, then it is either the 1st or 4th Figure. **To determine whether** it is 1st or 4th, you must look to see whether the conclusion flows in the same direction as the premises. For instance if X--->Q---->R is the flow of the argument (i.e. “All X is Q, all Q is R”), then if the conclusion flows in the same direction (i.e. “All X --IS--> R”), it is 1st Figure. However, if the conclusion flows in the opposite direction (i.e. “X<---IS---R *some*,” read right-to-left), then it is the artificial 4th Figure.

Moods

Each figure of the syllogism has a determinate number of **moods**, which constitute all the possible ways that that figure can be valid. Each mood has a special name, whose three vowels (A,E,I, or O) indicate what kinds of propositions make it up. The 1st Figure contains only four **valid** moods “Barbara,” “Darii,” “Celarent,” and “Ferio.”

Each mood’s name has three vowels that tell you what propositions it is made of:
 “**cElArEnt**” contains the vowels E – A – E.
 Major Premise — “No M is P” (E)
 Minor Premise — “All S is M” (A)
 Conclusion — .. “No S is P” (E)

Comment [D250]: Emphasize to the students that each of these are in **standard form**. However, in real life you might see things not in standard form, and out of place. For example, maybe the top line will be on the bottom, and the bottom on the top; or maybe one of the premises will need to be converted or obverted.

Comment [D251]: The 4th Figure often violates the existential fallacy. For instance, “All animals are things [Major premise], All unicorns are animals [Minor Premise], therefore Some things are unicorns [Conclusion].” This syllogism supposedly proves *that unicorns exist*. Of course, unicorns don’t exist. Thus the 4th Figure only proves what *would* be true, should the concepts of the terms themselves *really* exist.

Comment [D252]: Another way you can think about it is that in the 1st Figure, the relevant terms (S and P) seem to ‘drop straight down’ into the conclusion. In the 4th Figure, they don’t.

Comment [D253]: “Valid” means that from the premises given (regardless of what those premises may say) they infallibly confer truth upon the conclusion (regardless of what the conclusion may say). From 3 premises, and 4 possible choices for each premise, theoretically every figure would have $4^3=64$ possible moods. However in the 1st Figure, only 4 of these are valid; in the 2nd Figure again only 4 are valid; in the 3rd Figure, 6 are valid, and in the 4th Figure 5 are valid. Thus out of $64 \times 4 = 256$ total possible moods, there are only 19 that are valid (and 14 if you discount the 4th Figure, whose validity is questionable since it violates the existential fallacy).

Barbara:	Darii:	Celarent:	Ferio:
<u>All B is C</u>	All B is C	All B is C	No B is C
<u>All A is B</u>	<u>some A is B</u>	<u>No A is B</u>	<u>some A is B</u>
∴ All A is C	∴ some A is C	∴ No A is C	∴ some A is not C

The word “Barbara” has three A’s in it. Consequently Barbara is composed of three A-propositions. The word “Darii” has one A and two I’s, and so it’s mood has an A-premise, an I-premise, and an I-conclusion. The same can be said for the other moods.

Generally to determine what mood a thing is in, you *must* first determine what figure it is in. Once you know what figure it is in, then and only then can you select from the moods appropriate to that figure. The reason you must do this, is because sometimes two separate moods will have identical vowels (e.g. “Celarent” in the 1st Figure and “Camenes” in the 4th Figure both have one A and two E’s), and to make matters worse, it doesn’t really matter which vowel comes first. For example, Darii is essentially Darii, whether it is AII or IAI. The only way you can then distinguish it from Datisi, is by knowing that Darii is 1st Figure (M’s diagonal), whereas Datisi is 3rd Figure (M’s at left).

Questions:

1. What is reasoning? **Ans: It is a slow, methodical process by which we ‘flesh out’ the consequences of what we know.**
2. In each of the syllogisms in this section, draw a single oval around both of the Middle Terms.
3. What must you do before you determine mood? **Ans: Determine figure.**
4. Fill in the blanks: The _____ Term forms the subject of the conclusion. The _____ Term forms the predicate of the conclusion. **Ans: Minor, Major.**
5. Which of the following still represent the mood “Darii?”

All B is C	some A is B	All B is A	some C is B
<u>some A is B</u>	<u>All B is C</u>	<u>some C is B</u>	<u>All B is A</u>
∴ some A is C	∴ some A is C	∴ some C is A	∴ some C is A

Ans: All four! The first one is the standard form of Darii shown in the previous section. In the second, the Major and Minor premises have just been switched from their locations, but that doesn’t matter. It is still essentially the same syllogism. In the third, the Major and Minor terms have instead been switched, but this doesn’t matter: it is still essentially the same syllogism. In the fourth example, both the Major and Minor premises’ locations, and the Major and Minor terms have been switched.

6. Research project: Find all 19 valid moods of the syllogism.

Ans:	1 st Figure	2 nd Figure	3 rd Figure	4 th Figure
	bArbArA	cEsArE	dArAptI	brAmAntIp
	cElArEnt	cAmEstrEs	dIsAmIs	cAmEnEs
	dArII	fEstInO	dAtIsI	dImArIs
	fErIO	bArOco	fElAptOn	fEsApO
			bOcArdO	frEsIsOn
			fErIsOn	

Comment [D254]: Here, instead of using S’s, M’s and P’s, we’re using A’s, B’s, and C’s. Remind the students that since we are here making 1st Figure syllogisms, as we write the premises (each premise of the format “All/some ___ is(n’t) ___”) we always keep the B’s in the same places: at the top-right and in the bottom-left (cf. the example of the 1st Figure earlier in this section, using M’s, S’s and P’s). We also always keep the C (The Major Term) in the top row (The Major Premise), and we always keep the A (the Minor Term) in the Second Row (the Minor Premise).

Ask the students: “What does the word “bArbArA” tell you to do?” [Ans: Make all three lines/premises A-propositions.]

Comment [D255]: After the students have looked over these four moods, you might point out to them a handy trick to figure out the 1st Figure: Remove both middle terms and drop the major and minor terms—including the minor term’s quantifier—straight down. Of course they will also have to keep any negatives, as we shall learn in the next section, but assuming that they do this, the cut-and-drop rule works well in the 1st Figure.

Comment [D256]: Emphasize to the students that the ordering of the premises *really doesn’t matter*. Even though we name the mood “Celarent” with E coming first and then A, that really doesn’t matter, at all. As long as the middle term is diagonal in some way (rather than both at the right or both at the left as in the 2nd and 3rd Figures), and the major and minor terms drop straight down into the conclusion (in the 4th figure they don’t drop straight down, but rather diagonal down and ‘swap’), then it is still the 1st Figure. Once you know it is the first figure, as long as one of the premises is E and the other is A (in either order, it doesn’t matter which comes first), you know it is Celarent. Thus the terms ‘Major Premise’ and ‘Minor Premise,’ ‘Major Term,’ and ‘Minor Term’ often move around fluidly in their positions, and should not be thought of as rigidly ‘possessing’ a certain location (e.g. top row left side) of the syllogism. They do possess this location when the syllogism is in standard form (as shown in the previous section), but syllogisms are often not in standard form.

Comment [D257]: It is still essentially Darii, because in both examples, you have one I-proposition combining with one A-proposition, and the tail-end of the I proposition matches up with the head of the A-proposition. The variables used (A/B/C/M/S/P/etc.) don’t matter. Ask the students: So what is essential to Darii? [Ans: One I-premise, one A-premise, and 1st Figure-ness.]

Comment [D258]: After the students have done this project, give them the handout (in Appendix) on the 19 (or really 12) valid moods of the Syllogism.

2. Verifying a syllogism's validity

A useful tool for figuring out whether syllogisms are valid is by checking distribution. Distribution is the application of a term to all, or only some of its class (recall Section 3.5.4). In regard to the subject, a term is "distributed" if it has the universal quantifier "All" in front of it, and it is "undistributed" if it has the particular quantifier "some" in front of it. In regard to the predicate, you must either figure it out from the context (asking yourself "does this intend to talk about every member of the class or just some of them?") or follow the chart reprinted at right. Here we see that negative propositions have a distributed predicate (because when you deny, you refer negatively to the *entirety* of the concept), and positive propositions have an undistributed predicate.

A: All S (D) is P (U).
 E: No S (D) is P (D).
 I: some S (U) is P (U).
 O: some S (U) is not P (D).

Comment [D259]: Point out to the students that E propositions really do have the quantifier All at the start of them, but it is just hidden: "No S is P" is really "(ALL S) <— isn't —> (P)."

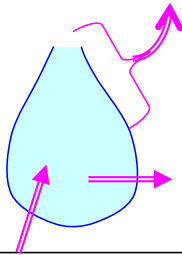
By verifying three simple rules, you can confirm whether a syllogism is valid:

1. The Middle Term must be distributed at least once.
2. If one of the premises is negative, the conclusion must be negative. If both of the premises are negative, nothing follows (the syllogism would be invalid)!
3. No term can be more distributed in the conclusion than it was in the premise.

Comment [D260]: This means that the Middle Term must somewhere have an "All" in front of it, or a "not" in front of it (or a "No" way out in front of the whole proposition, since "No . . ." is short for "All . . . is not . . .").

The concept of distribution shows us that in syllogizing we must be putting concepts fully distributed (i.e. referring to all of the class, or 'bursting at the seams') into other concepts that are not fully distributed (i.e. horizontally 'trailing off' into more content, about which we are not concerned). Only in this way can one lesser concept *belong* to another.

However, if a term is more distributed in the conclusion



Things can be put into or out of the context, and the context itself can be put into or out of other things.

Diagram 3.49

than it was in the premise, then we have reversed this process (i.e. flipped Diagram 3.48, shown at right), and committed a fallacy of *over-extension* (overextending that term). For example if I say "All Basques are men; some animals are not men. Therefore, no animals are Basques," I would be overextending the term "animal," because in the 2nd premise it is undistributed, whereas in the conclusion it is distributed. To avoid this mistake, I would need to say "Some animals . . ." in the conclusion, not "No animals . . ."

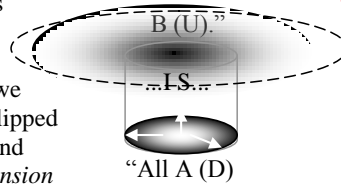


Diagram 3.48

The same issue of distribution applies to the Middle Term. The Middle Term must be distributed at least once, and if it isn't, then nothing follows.

The Middle Term forms the *context* for the syllogism (Sort of like a carrier, or purse, or capsule, or water-droplet). Things are either put into that context, or distinguished as being

Comment [D261]: *Nothing follows from a negative.* This principle is universally true . . . (1) In logic: Just because a premise was false doesn't mean the conclusion deduced from it is also false. (2) In sweeping generalizations: Just because one of the employees was a 'bad apple' doesn't mean that the whole institution is bad. (3) In negative moral situations: Just because things are going badly for you, doesn't mean that you should 'pass it on' and in turn do bad things to others, as well. (4) In positive moral situations: Just because you're not worse, or as bad as another person, doesn't mean that you're necessarily *good*. (5) In contests of Will: Just because one battleship sinks, or one football play fails, doesn't mean that that side is doomed to failure. Rather sometimes its margin of victory is found in something else (e.g. aircraft carriers, or the kicking team's field-goals), and what was lost wasn't needed anyway.

Comment [D262]: The Middle Term, however, which links the two propositions, is a case where we often put the part-ness of a concept into the fullness of the concept. We can do this because when we put the Middle Term (in one proposition) into the Middle Term (in the other proposition), we are not putting one concept into another, but one concept into itself, and so here we can put the part into the whole; however normally (i.e. within a single proposition), we do the reverse of this and put the *whole* of one concept—a distributed subject—into the *part* of another—the undistributed predicate (cf. diagrams 3.48 and 3.49).

Comment [D263]: Thus the Middle Term is like the 'engine' of the force of the syllogism (cf. Diagram 3.50, where you can imagine the pipe as a kind of jet-engine, or gun.): It gives force to connecting the Minor Term to the Major Term, yielding a conclusion.

outside of it. On the basis of how things are put into, or out of that context, and on the basis of whether the context itself is put into something else (while carrying things inside of it), the things themselves can then be either connected (with both inside that context, at least in part) or separated (with one inside and one outside of that context, at least in part). Thus the Middle Term is as-it-were the pre-existing *intellectual* component of the syllogism, and the premises themselves—which forcefully ‘put things into’ others—are as-it-were the *willful* component of the syllogism.

Comment [D264]: Interesting fact: At about the age of 2, children begin developing their Will, and it is then that they like to ‘put things into’ others. Ask the students: “Why do you think children like to do this?” [Ans: Because they are performing syllogisms, using objects. They are delighting in thinking to themselves “All the pieces are inside” (an A-proposition) or “This can’t be put in that” (an E-proposition), etc.]

Questions:

1. Circle any terms that are over-extended. Then either check off the syllogism as ‘valid’ or re-write what the conclusion should be, or write “nothing follows.”

a. some A is B	b. All B is C	c. No A is B
<u>All C is B</u>	<u>some A is B</u>	<u>All B is C</u>
All C is A	some C is A	some A is not C

Ans: [B is overextended] [C is overextended]
 Nothing follows. ✓ Valid. some C is not A

2. Fill in the blanks: If the Middle Term is over-extended then _____; if one of the other terms is over-extended, then _____.

Ans: Nothing follows; the conclusion is wrong.

3. Write whether the following syllogisms are invalid, and if invalid, why:
 - a. Some men are strong.
All Basques are men.
 Some strong ones are Basques.
Ans: Undistributed Middle Term.
 - b. Marijuana use is medical.
No medical things should be forbidden.
 No marijuana use should be forbidden.
Ans: Overextension of the Minor Term.
 - c. Some living things are strange.
All men are alive.
 Some men are strange.
Ans: Undistributed Middle Term.
 - d. Nothing fun is boring.
All boring things are part of life.
 No life is fun.
Ans: Overextension of the Major Term (life).
 - e. It’s forbidden to do bad things.
Some judging of others is bad.
 Therefore, don’t judge!
Ans: Overextension of the Minor Term (judging).

3. Understanding Syllogisms

The Force of the Syllogism

The force of a syllogism (represented by the wide arrows in diagrams 3.51 and 3.52), is what mental action you must undertake in order to figure out (or solve) the syllogism, and produce a conclusion. In a way, it is the *tendency* of the syllogism, as when you ask yourself “Where is it [the argument] *tending toward*?”

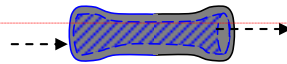
In the 1st Figure, the force of the syllogism is in parallel with the Major Premise. The Major Premise is like a kind of rule, or pipe, or mathematical *function* into which you ‘plug in’ something at one end, and from which you ‘get out’ something at the other end. This is

the distinctive characteristic of *Modus Ponens*, and *Modus Ponens* characterizes the 1st Figure. In the 2nd Figure, the Major Premise is again a pipe, but this time, the force of the syllogism is directly *against* the Major Premise. By denying something at one end, you are forced to deny something *even more* at the other end. This reversal is how *Modus Tollens* works. Whereas in the 1st and 2nd Figures, the pipe is the Major Premise, in the

Proper Vocabulary Use:

Modus Ponens is Lat. for “Mode of putting [or depositing].” *Modus Tollens* is Lat. for “Mode of taking.” We will study these more in Section 3.

Diagram 3.50
Subj. ...is... Pred.



Comment [D265]: It is absolutely imperative that students have out in front of them the Handout “The Valid Moods of the Syllogism” (see Appendix) while going over this section. They will understand the general statements so much more if they can simultaneously see tangible examples of what is being declared.

Comment [D266]: In math, a function $f(x) = 3x + 6$ has the input on the right side of the equals sign, and the output on the left side of the equals sign. Thus the function is like a pipe or engine in which things flow from right to left.

Comment [D267]: This transfer from input to output is the *force* of the syllogism (at least, in the 1st Figure).

Comment [D268]: Notice how the wide, dotted arrow in the second example of Diagram 3.52 is going *against* the thin, solid arrow.

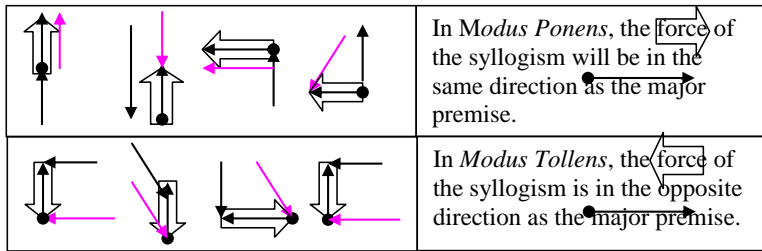


Diagram 3.51

3rd and 4th Figures, it is the Minor Premise. In the 3rd Figure, the force of the Syllogism reverses direction and flows down the pipe provided by the Minor Premise. Moreover, in the 3rd Figure, the force of the Syllogism is *identically the conclusion*, which is why the conclusion is so natural and *easy* to recognize in the 3rd Figure. In the 4th Figure, the force of the syllogism goes directly *against* the conclusion. The 4th Figure is the most *unnatural or counter-intuitive* figure. None of the premises in the 4th Figure suggest or ‘bespeak’ in any way what the conclusion should be, which is why the 4th Figure must be solved in two separate steps. In the 4th Figure you have to *first figure out what the unique relationship is between the Major and Minor terms, and then, discarding what you just said in discovering this, ‘start over’ again at the other end of the syllogism, and restate the conclusion anew.* We see then that each syllogism has a kind of pipe (Most obvious in the 1st and 2nd Figures), and the force of the syllogism somehow flows—depending upon the Figure—*up or down it.*

Comment [D269]: In other words, the conclusion flows *through* the Minor Premise: If the Minor Premise says one thing, the conclusion uses and starts off from the exact same idea-matter presented by the Minor Premise.

Comment [D270]: 3rd Figure syllogisms practically give you the answer.

Comment [D271]: Because the conclusion and force are against each other, in the 4th Figure you have to really understand what is going on.

Comment [D272]: By up- or down-ness, we mean either going with the arrow representing that statement (i.e. “down” it), or against the arrow (i.e. “up” it).

The Hinge and the Pipe

In the examples at the start of this chapter, the M term opposite the Major Term (opposite what will become the predicate of the conclusion) is always in **Boldface**. This is the *hinge* of the syllogism. Every syllogism involves either plugging one entire premise into the hinge-term, or having two premises emerge out of the hinge-term.

In the 1st Figure, the hinge is on the left side of the syllogism. This makes the syllogism bend, according to the manner shown at right. You push/put all of S into the hinge (by saying “S is M”). Consequently S takes the place of M and results in the force of syllogism’s *conclusion* (in pink) being rightward-directed.

In the 2nd Figure, the hinge is on the right side of the syllogism (since all Ms in the 2nd Figure are on the right side). In the 2nd Figure, you put the Minor Premise into the M, and this immediately—and as-it-were *retroactively*—generates an identical (effectively parallel) proposition as if you were also putting the S into the P (because the P is part of M, usually). Thus the conclusion “S is P” effectively ‘slides out sideways’ from the Minor Premise. It is as if the force of the argument is flowing backward, back up the pipe. It should be noted however that the 2nd Figure is the figure of negative arguments: If something isn’t in the whole, then it can’t be in the part, either (and this is *Modus Tollens*, par excellence). Since we’re here ‘ruling out’ rather than ‘ruling in,’ it is then as if the backward flow is actually occurring around the *outside* of the pipe rather than in it (which explains how it can accomplish the counterintuitive feat of flowing backward, since it is contrary to nature for things to flow back up the way they’re intended to go).

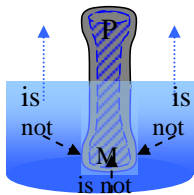
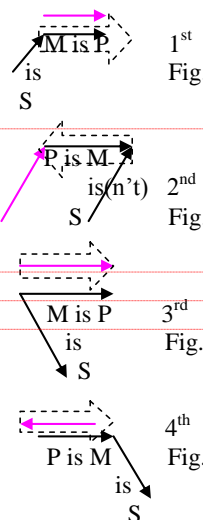


Diagram 3.53

In the 3rd Figure, the hinge is on the left side of the syllogism (since all Ms in the 3rd Figure are on the left side). In the 3rd Figure, you *convert* the Minor Premise, and then starting from the Minor Term, you merely ‘read’ out the answer, picking up any “Some”s or “Not”s that you may encounter along the way. The 3rd Figure is the figure of *addition*. Thus when you ‘add on’ the “Some” or the “Not” it doesn’t affect any other part of the conclusion. This is the way addition works—simple and easy! It is merely cumulative. The 3rd Figure thus is extremely intuitive. In fact the force of the 3rd Figure is the very conclusion itself: It is the most natural thing to say, given what has been stated.

The 4th Figure is just an artificial version of the 1st Figure, in which you are making the syllogism run backward from how it is naturally inclined to go. Consequently, in the 4th Figure, the premises have been flip-flopped (between Major and Minor), so that you are now focusing on what was the Minor Premise. In the Fourth Figure, you convert the minor premise—i.e. the *Pipe* itself, which *would be* the Major Premise if it were 1st Figure—and you treat it as a 2nd Figure. Thus in the 4th Figure, the conclusion slides out sideways (just as it did in the 2nd Figure), from the converted Minor

Diagram 3.52



Comment [D273]: In order to help the students understand Diagram 3.52, it is highly recommended that you pass out the Handout “The Valid Moods of the Syllogism,” found in the Appendix.

Remind the students that the final outcome represented by the pink arrow has to be S . . . is . . . P. Thus, in Diagram 3.52, after—and as a result of—the operation of the Minor Premise (“S is M”), the “S” shown, *relocates* to the start of the pink arrow (in the 2nd Figure the “S” is as-it-were already at the start of the pink arrow).

Comment [D274]: Tell the students to imagine ‘plugging’ or compressing the whole “S is M” premise into the M (using an upward motion) in the 1st Figure part of Diagram 3.52. Once this is done, S (or some part of it) takes the place of the M, and you have your conclusion, “S is P.”

Comment [D275]: In other words, if the minor premise is an E-proposition, the conclusion will be an E-proposition. If the minor premise is an I-proposition, the conclusion will be an I-proposition. The sole exception to this is Festino, in which the minor premise is an I-proposition, and the negative from the major premise combines with it to give a conclusion that is an O-proposition. However inasmuch as I is like O, it is almost parallel.

What we mean by “parallel:” In these sorts of diagrams (esp. those in the Handout in the Appendix), A-propositions will generally be represented as directionally upward, E-propositions as directionally sideways, I-propositions as directionally downward, and O-propositions as directionally angling-down. Thus if two things are . . .

Comment [D276]: Except in Festino.

Comment [D277]: In the 2nd Figure part of Diagram 3.52, have the students imagine the whole pink arrow, without turning, drifting leftward out of the black arrow.

Comment [D278]: It is as if the water is flowing not down through the inside of the pipe, but instead mounting up and rising all around the outside of the pipe (cf. Diagram 3.53). In this way the water, starting at the location of the predicate—by denying it—eventually gets back up to what had been the . . .

Comment [D279]: For instance, if the minor premise is “All B is A,” you change it into “some A is B.” Thus you generally follow all the rules for converting.

Comment [D280]: Note captions on the far right of the Handout “The Valid Moods of the Syllogism.” The 1st Figure is like multiplication, the 2nd Figure is like division, the 3rd Figure like addition, and the 4th Figure like subtraction.

Comment [D281]: It is the converting of the Minor Premise that makes the 4th Figure not existential, but only essential. After all, in the 2nd Figure, the pipe ‘flowed’ backwards as *Modus Tollens*. Thus if we are flipping the pipe (by now converting it), then the 4th Figure *should* become . . .

Comment [D282]: Remind the students that the 1st Figure and 4th Figure are nearly identical. Indeed, the following match up in similarity: Barbara (1st Fig.) and Bramantip (4th Fig.); Celarent (1st Fig.) and Camenes (4th Fig.); Darii (1st Fig.) and Dimaris (4th Fig.).

Premise. However the 4th Figure is different from the 2nd Figure in that the 4th Figure can be not just negative, but positive as well. Thus the 4th Figure slides out left not outside the pipe (cf. Diagram 3.53) but *inside* the pipe. This is *truly* unnatural: Things don't flow backward in causality. The only way this can occur is if you are not concerned for causality but merely *revising or rethinking or rearticulating* what you already know. This revision is the true force of the 4th Figure. Since the 4th Figure merely revises, and doesn't truly cause, it obviously has nothing to do with existence (which depends par excellence on an efficient cause), but has only to do with essence.

Analogy to Mathematical Operations

Modus Ponens is a kind of **multiplication**: The operation performed by the Minor Premise gets combined with the operation performed by the Major Premise, and the two have a **multiplicative effect** on one another in producing the conclusion. Thus the operation performed by the 1st Figure is analogous to multiplication. By contrast, in the 3rd Figure, the premises do not propel the conclusion, but merely serve as a platform on which quantifiers and qualifiers ("some"s and "not"s) can be presented. Thus in the 3rd Figure, things do not multiply, but merely add. The statements "B is C" and "B is A" bear no inherent connection to one another, but rather *diverge* in their forcefulness. Since they aren't formally combining, the best that the forms A and C can do is stand side-by-side. Thus in the 3rd Figure, you merely 'sum up' what you already know in the conclusion. In the 2nd Figure, *Modus Tollens* is a kind of division. When two things are in ratio to one another, if you divide one of them by a certain percentage, you must divide the other by an equal percentage. This is what happens in *Modus Tollens*. In *Modus Tollens*, we often divide something not just in part, but to an infinite degree, in which case it gets reduced all the way down to zero. The former case is represented by the conclusion "some A is not C," the latter by the conclusion "No A is C." Thus the 2nd Figure is the figure of division. The figure most akin to this is the 4th Figure, which is the figure of subtraction. In the 4th figure, by converting the Minor Premise, we are 'taking something away' from the Minor Term. What are we taking away? We are taking away some of its universality; we are making "All" into "some," or even "none." Thus the 4th Figure isn't *Modus Tollens* in a formal sense, but only in a material sense. We see then that the mental operations symbolized by the four figures give us the four operations known to algebra.

Comment [D283]: Multiplication is not just the 3 x 4 multiplication with which we are concerned in grade school. Multiplication also concerns things like the *dot-product*, used in things like Matrix Algebra. Indeed any time one thing formally combines with another, multiplication has occurred. Thus multiplication is the combining of two forms.

Comment [D284]: The "is" of the one gets combined with the "is" of the other, producing an "is" in the conclusion which has double the force of both. This can be heard by a certain emphasis or extra drawn-out-ness with which the "is" is said, each subsequent time.

Questions:

1. What is the hinge of the syllogism? Be specific! **Ans: The Middle Term (In particular, it is the one opposite the Major Term).**
2. What must you do to the Minor Premise in the 2nd and 4th Figures? **Ans: Convert it, following all the rules of conversion.**
3. Given the following sets of premises, write which figure it is, circle the hinge, and then propose a conclusion:

- | | | |
|---|---|---|
| a. No B is C | b. No B is C | c. some A is B |
| <u>some A is B</u> | <u>some B is A</u> | <u>No C is B</u> (careful!) |
| Ans: some A is B
(1 st Figure) | some A isn't C
(3 rd Figure) | some A isn't C
(2 nd Figure) |

Comment [D285]: Really both Middle Terms are the hinge because they get combined together into one. However, of the two, we call the one opposite the Major Term more of the hinge, in order to keep the syllogizer correctly goal-focused on the predicate of the conclusion (which is the Major Term). As long as the syllogizer does this, he/she won't get disoriented, and totally mess up, thinking that the Major Term is the Minor Term, and changing the Figure and Mood into something radically different from what they are.

Chapter VIII. Science

1. Science

Logic defines the inner workings of reasoning, but the establishment of a science is the place where reasoning bears its real fruit. Thus we naturally consider sciences next.

The Term "Science"

The common understanding of "Science," as the term is used today is different from what it meant classically. Today when we speak of "Science" we mean empirical science, namely, anything that can be proved by experimental and repeatable methods. Thus today we talk only about chemistry, physics, and at the extreme such things as experimental psychology as being "sciences." This empirical notion of "science" is based on the principle of complete induction, that when you survey all the possibilities for a fact, and test each one, you can inductively prove which one of them is the higher explanation or reason (*ratio*) for a certain observed phenomenon. This idea of "Science" came into its own only relatively recently by the publication of a textbook of accepted methods and criteria for establishing truth, by J.S. Mill (1806-1873).

However, the older classical meaning of a science was based instead on the principle of Deduction. To the classicists, a science was any ordered body of knowledge in which lower truths would depend upon and hang from, and thus be deduce-able from higher truths. Thus by the classical meaning of the term, there could be a science of "rhetoric" or "grammar" or "concrete mixing," or "sailing" or "growing vegetables," etc. It didn't mean that you had to take measurements and assign numbers to have a science. Indeed even such things as "prayer" and "devotion" and "self-discipline" and "governing" could be called sciences (e.g. "the science of the spiritual life") if you truly knew what you were doing in them. In short, anything that you 'knew' could be called a science. It is this classical meaning of a science that we will study below, in order to establish just how we come to the knowledge of a 'science.'

The classical idea of a science was focused on obtaining epistematic knowledge (or episteme). You had obtained epistematic knowledge of something when you had truly gotten your mind 'around it so that there were no more questions to be asked about it. Episteme (from Gk. for "standing upon") is had when you know not only all there is to know in the science, but also what each thing stands (or depends) upon. In other words it is when you both know and understand at the same time (cf. diagrams 3.11, 3.6). When you have epistematic knowledge, if anybody asks you a question you can answer it in the best way possible, because you know all the 'why's,' that is, you know immediately which fact(s) it comes from. Ultimately all sciences 'rest upon' (in the physical mindset) or 'hang from' (in the spiritual mindset) the first principles, which are usually very generalized and universal statements that are affirmed because of massive amounts of experiment and induction (e.g. not just swans and horses, but *all animals* are .

Comment [D286]: This is the root meaning of the word. "Science" is from the Lat. present participle *sciens*, meaning "knowing."

Comment [D287]: επιστημη is a Greek word pronounced "epi-STAY-MAY," meaning "standing upon." The etas (η) are hard e's pronounced in English as hard a's.

Comment [D288]: In Step (4) in Diagram 3.64, the farthest left thing hangs or 'depends upon' what is immediately to the right of it; and that hangs or 'depends' from what is immediately to the right of it, etc.

Comment [D289]: Recall (cf. diagrams 3.6 and 3.11) that knowing is a simple downward process, whereas understanding is a complex upward process. Combine the two and they form a very rigid structure. The knowledge provides the strength, while the understanding determines what goes where.

Comment [D290]: "Immediately" (from Lat. *im-* "not" + *medium* "middle") means that there is no other fact in between the fact in question and its cause. For instance if I ask you "Why do you have the genes that you do?" you could either answer "Because my father had the genes he had, and my mother had the genes she had." Or you could answer "Because my grandfather had the genes he had, and my grandmother . . . (etc)." Here your father and mother are the *immediate cause*, whereas your grandparents would be called the mediated, removed, or *remote cause*).

. .). Today, empirical science no longer talks about “first principles,” but instead speaks of “laws,” which are often formulated in a mathematical equation. However, the two are the same thing, one occurring in a logical context, and the other occurring in a physical context (as when we speak of ‘the laws of the universe’).

The Objects

The ‘material object *quid*’ of a science is the material thing(s)—the ‘whats’ (Lat. *quid*)—that it studies.

The ‘formal object *quo*’ of a science is one’s method of investigating, with special attention paid to ‘how’ (Lat. *quo*) one goes about it. The formal object of a science might be, for instance, everything that is investigable by means of a microscope. The invention of a new tool can thus cause a whole new science because it can cast a whole new light upon things.

Some possible formal objects:

- Sight or touch
- radar or sonar waves
- methods of investigation (psychology vs. psychiatry)
- the light of divine faith

Comment [D291]: The Lat. word for “what” is *quid*.

Comment [LU292]: Quo is the ablative of the relative pronoun. Thus it could be translated “by which,” as in that *by means of which* you study something.

Axioms and Postulates

To correctly orient a science in the realm of Being, we have things called axioms which are formulations that are so basic, that they tie a science into one of the four Transcendentals, which are ultimately the most basic principles in this universe. Because they are so closely related to Transcendentals, axioms (from Gk. “worthy,” as in ‘worthy to be believed’) are naturally self-evident: You don’t need to check them because anyone in their right mind could not possibly doubt them. Indeed, axioms flow from the nature of Transcendentals, and are thus naturally understood and recognized.

Examples of some axioms (along with the particular Transcendental that they come from) are as follows:

- (1) (In *physics*) That the whole is greater than the part, and that the whole possesses the part – from Oneness.
- (2) (In *metaphysics*;) The law of non-contradiction. – from Being
- (3) (In *speaking*;) Signification, i.e. that words *mean* things. – from Truth.
- (4) (In *art*;) That the good is desirable in itself. – from Goodness.
- (5) (In *practical arts*;) That the goal of all willful activity is Happiness (possession of the complete and total good) – from Goodness.

Comment [D293]: Axioms are things that are so simple that they do not need to be taught, but are habitually believed and recognized. They generally have to do with one of the Four Transcendentals.

Additionally, certain other formulations are also taken as axiomatic because though not connected to a Transcendental, yet they are the most basic thing in that science, from which all other deductions flow. These other things are often called postulates (from Lat. *postulare*, “to demand”). For instance, in Math, you might postulate the existence of a line passing at two points through a circle. This is not something that one can doubt, because you have willfully done it, and thus its own existence is as-it-were its own justification. The line’s existence doesn’t directly flow from any one of the four Transcendentals, but in a way it indirectly flows from the Transcendental of Being, since

it is itself a being. Thus postulates are often considered the same things as axioms, although the two are slightly different.

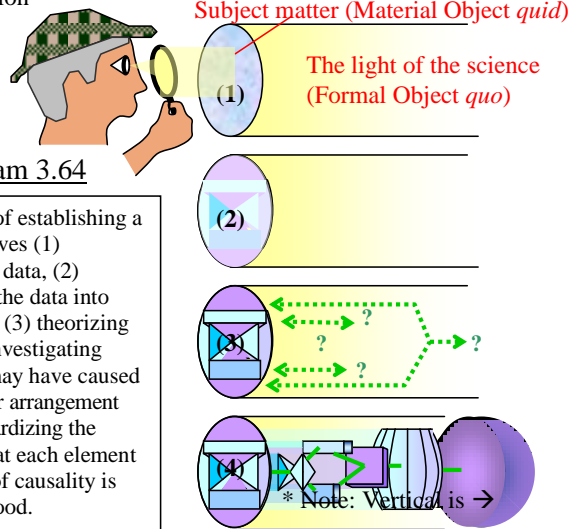
The Process of Establishing a Science.

In a science we begin from a fact or set of facts and strive to study them more closely, bringing the facts **into conformity** with one another. As we become aware of more and more facts, we may start to become aware of commonalities between them. If we notice a set of commonalities among an entire class, **we may then be led to suggest** some explanation for this mysterious unity. Explanations themselves can be either horizontally unrelated; or they can be ordered one on top of—including and explaining— one another, thereby allowing us to construct a **complex vertical framework** of causality. Since the reasons for things are often very hidden, and three, four, or even many times removed, the latter vertical situation

is more common, and here we must search *deeply* for answers. During this process, it is extremely important to exhaustively enter *into each one of the* material objects of the science and study it deeply, and even try to mentally *be(come)* that thing. In so doing, one will have the best chance of constructing the correct vertical explanation.

Diagram 3.64

The process of establishing a science involves (1) gathering the data, (2) categorizing the data into distinct types (3) theorizing and further investigating about what may have caused this particular arrangement and (4) standardizing the science so that each element in the chain of causality is fully understood.



Comment [D294]: Bringing two facts into conformity with one another, is like trying to merge two strobe lights that are flickering at different rates, or like trying to find two notes on the piano that harmoniously merge rather than dissonantly clash. When things harmonize, the peaks of one wave are interspersed among the peaks of the other wave in some regular geometric ratio (e.g. 1:3, or 1:4). When they are dissonant the peaks match up some of the time, but not all the time (e.g. 2:3, or 3:7)

Comment [D295]: Recall that complete horizontalness suggests prior verticality (recall end of Section 7.8 on Induction).

Comment [D296]: Cf. the column of bricks on the left of Diagram 3.7.

In order to arrange things in this vertical way, you must methodically enter into each one of the objects (this is known as **investigation** or **study**) and **must mentally be** that thing, only in this way will you be able to gain a complete view of the situation, and be qualified to establish an appropriate framework of knowledge. The goal during study then is to be extensive, and if possible exhaustive in searching out all that there is to know about each topic that is studied.

Comment [D297]: This is where technology becomes very useful. You may be completely unable to imagine what it is like to 'be' a DNA molecule; but the invention of a new tool (e.g. a mass spectrometer) may nevertheless enable you to uncover its nature, or even physically *see* it.

Questions:

1. What term does modern science now use, in place of the term "first principles?" **Ans: "Laws."**
2. Name the formal and material objects for the following sciences:
 - a. Experimental psychology. **Ans: MO: The human mind. FO: Investigation by means of observation and interviews.**

- b. Chemistry. Ans: MO: Atoms and molecules, and their macroscopic elements or compounds. FO: The same, viewed in the light of how they act and react in various situations.
 - c. Biology. Ans: MO: Everything living. FO: How it functions, esp. in performing biological processes.
 - d. Math. Ans: MO: Numbers. FO: In the context of various equations, functions, and expressions.
3. Pick one field of study, and describe the differences by which modern and classical science would approach investigating it. Ans: Experimental psychology. Modern science would put the person under observation and regard as solid only things proven by inductive experimental evidence. Classical psychology would regard what various wise men had said by their own self-introspection (e.g. Plato, Aristotle, Augustine), and then try to deductively reconcile their perspectives into some unified corpus or system of understanding.
 4. What is episteme? What does it mean, and when do you possess it? Ans: Episteme (from Gk. For “standing upon”) is the state of knowledge when you both know and understand, that is, when you know all there is to know in some field, and also understand how and why those interrelate to one another.
 5. Suppose the invention of a new tool or technology has ‘broken open’ a whole new field of science. How would you go about standardizing this new science? Ans: First gather all the data possible, and group it. Then try different arrangements of causality: What causes what? Lastly, when it has been fully experienced what the capabilities of each of the elements in the field are, propose a final standardized model that explains all observed phenomena.

2. The Framework of Knowledge

Hypotheses, Theses, and Laws

When one is establishing a line of causality (Step 3 in Diagram 3.64), it is important to keep in mind that in order to explain the causes of some lower phenomenon, the higher always unilaterally causes the lower, and not vice versa. Thus it is necessary to put oneself in the position of the higher and propose guesses—statements—describing what causes what. Something that one posits or ‘puts out there’ as an explanation, is known as a thesis. In this section we will study theses, as well as their precursors (hypotheses) and their successors (laws).

An hypothesis (involving the Gk. prefix ὑπο— “underneath”) is an educated guess in which one suggests a possible explanation for a fact or group of facts. Hypotheses are made when you are not yet ready to ‘put yourself into’ and ‘take a stand upon’ the position that you are defending. Instead, you merely ‘cast it forth’ in a very preliminary way or ‘suppose’ it, as a possible explanation. Thus it is understood that an hypothesis

<u>Greek:</u>	<u>Latin:</u>
Hypothesis - - - - -	Suppositio
Thesis - - - - -	-Positio
What English words are these like?	

Comment [D298]: In Diagram 3.66, point out the thin black arrows of causality, going *against* the direction of inference or discovery (represented by wide green arrows)

could be either right or wrong. The simple goal in hypothesizing is to offer enough suggestions (enough hypotheses) that one of them eventually 'sticks' to the evidence (recall Section 3.5.4 on Learning and Understanding) and is able to develop into a larger thesis. Thus the goal in hypothesizing is *breadth*: to cover all bases and all possibilities. If the matter is a simple one, an hypothesis may involve the relationship between only

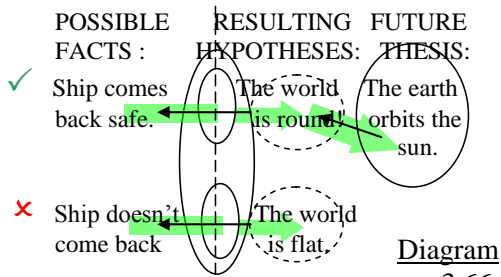


Diagram 3.66

Normally, Being flows through a correct thesis into the correct hypothesis. Facts then shed light upon hypotheses (and also theses, indirectly) so as to confirm which way the Being truly flows. However, a single false or contrary fact can tear down an entire established structure of knowledge

course fields of study can be very broad, and can merge into other areas of study. Thus a thesis can be less broad than another thesis. Consequently these may be *corrected*, *expanded*, *updated*, or *integrated* into even broader theses which are even more explanatory and comprehensive.

If one arrives at an explanation that is sweeping, comprehensive, and necessarily descriptive of *all* activity/occurrences of a certain type, then that is a law. A law must be true in every case as stated, and so a law can be declared only by a person who has epistemic knowledge of the whole science in question, because only (s)he can foresee any exceptions. Now laws may be subject to exception in the light of other sciences, but at least within the science for which it is formulated, a law should be universally true, and without exception. Thus a law is a property of that science's frame-of-reference (its formal object). Consequently, whereas theses and hypotheses may be particular or universal, Laws must always be universal (i.e. an A or E proposition).

Questions and Explanation: What, Why, and How

As we are constructing this framework of knowledge, we should note some basic relationships. When the Will rises higher, also accessing and making use of a wider and wider array of facts and

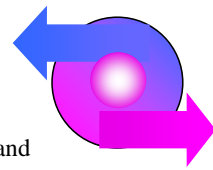


Diagram 3.68

two elements (either A causes/precedes B, or B causes / precedes A); thus an **A ? B** hypothesis can usually be empirically tested and out-rightly proved or disproved with a single experiment. Thus hypothesizing enables the preliminary investigations by which one can then later link up many facts in a grander explanation.



Diagram 3.65

A thesis (from Gk. τιθημι, "to place"), is an adequate explanation for a whole group or system of facts. It is a systematic explaining or 'laying out' of the explanation(s) in a whole area or field of study. Of

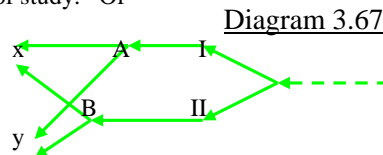


Diagram 3.67

Comment [D299]: Casting forth hypotheses is like spiritually casting forth seeds. In this way hypothesizing is very much like the functioning of one's lower reason (cf. Section 3.5.1). When one of the hypotheses 'sticks' and develops into a larger thesis, that is like the plant taking root, and growing.

Comment [D300]: /ti-thay-mee/

Comment [D301]: By "adequate" we don't mean that it is the ultimate, final, truly correct, and best explanation. We just mean that it has 'hold its integrity' and show itself to be a logical explanation, either in a certain situation, or from a certain perspective.

Comment [D302]: We aren't talking here about Moral Law (e.g. God's law or a nation's laws which ordain what you should, or shouldn't do), but about physical laws inherent in natures.

Comment [D303]: For example, Newton's 2nd law of motion (F=ma) was shown to be false in the extreme situations described by quantum mechanics and General relativity, which are as-it-were a separate field from that of solid-state physics. What has happened here is that an even *higher first principle*—*outside* of this entire science (with its own set of first principles/laws) and proper to an even higher science—has supervened and taken over.

Comment [LU304]: Recall from Section 3.6.7 that a property is described by an A proposition.

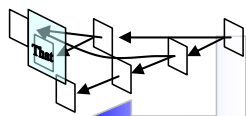
values, Intellect—which is like the reverse of Will (cf. diagrams 3.68 and 4.5)—automatically gets pulled along with it. Thus as you will to do more and more actions, your Intellect simultaneously gains broader and broader experience, not even by trying to, but just by being there. This is called experiential knowledge: knowledge *that*. Moreover, the more one willfully acts (this time vertically rather than horizontally), the more one also gains experiential knowledge of connections of vertical causality: *Whys*. Why does this fact occur? Because of some other reason hidden ‘behind’ (or ‘above’) it. Having lots and lots of experiential knowledge enables one to know enough connections to know what-causes-what, and why. If we gain enough experience *why* something is the case, we can usually then reverse course and explain *how* it comes about, or transpires. When we have complete knowledge what, why, and how, we then have total scientific knowledge (i.e. episteme), and we can summarize the whole framework from the top-down point-of-view of the teacher.

Comment [D305]: Scientific Knowledge is absolutely certain knowledge. It is absolutely certain because you know what the truth is based upon, and that it cannot be otherwise. The ancient Gk. word for Scientific Knowledge is “episteme.”

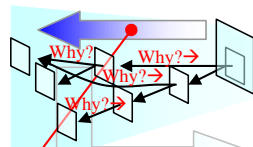
Diagram 3.69

Experiential Knowledge

Scientific Knowledge



Knowledge *That*
(motion to the left,
knowledge of particulars)



Knowledge *That* & Understanding *Why* (Inquiry and Understanding to the right).



Knowledge *How* (the particular path(s) taken, motion to the left).

* Note: Vertical is →

Questions:

1. Is the newest theory that has come out usually an hypothesis, a thesis, or a law? **Ans: Usually a thesis. An hypothesis is too uncertain and preliminary to be worthy of publishing, and it needs lots of confirmation before it can become a law.**
2. What must a law be, that a thesis does not have to be? **Ans: A law must be universal (usually an A-proposition), and true always and everywhere within the science.**
3. Are the following laws based on mathematical, entitative, or some other kind of necessity?
 - a. Newton’s 2nd Law of Thermodynamics. **Ans: Some other kind, especially, since the universe didn’t have to be made this way.**
 - b. Natural Law (written on one’s heart) **Ans: Entitative**
 - c. The Law of Independent Assortment (in Genetics) **Ans: Entitative.**
 - d. The Law of Diminishing Returns (in Economics) **Ans: Mathematical.**
 - e. The Law of Unintended Consequences: **Either entitative or other**

Comment [LU306]: If every law comes from an A-proposition, then every law must be necessary (cf. captions in Diagram 3.40a).

Comment [LU307]: States that “the entropy of the universe is increasing.”

Comment [LU308]: States that when genes divide in meiosis, the two similar, but slightly different copies of a given gene assort themselves—one in one gamete the other in the other gamete—independently of how other pairs of genes assort themselves. Thus just because one egg cell receives brown hair, and the other yellow hair, has nothing to do with whether it receives blue eyes, and the other hazel eyes, or it hazel eyes and the other blue eyes.. This is entitative necessity because it is caused by the being of the DNA, that the being of one chromosomal pair of DNA is unconnected to the being of the other 22 pairs.

Comment [LU309]: States that as more and more goods of one type are produced, the amount for which you can sell each one decreases.

(i.e. if one should argue that there is no real entity here, but rather just Sin—which is a lack or deficiency).

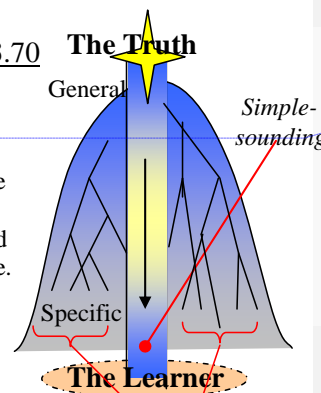
4. Is episteme *a priori* or *a posteriori*? Ans: Episteme is infallible knowledge of a creature's lower characteristics, based on a higher understanding of its nature, and in this way it is *a priori*. However, episteme cannot be had unless one first thoroughly studies, apprehends, and understands the entire nature of the thing, and in this sense episteme is *a posteriori*. Episteme is then both *a posteriori* and *a priori*, but it is more *a priori* because the part of it that involves organizing the knowledge into a its proper structure and hierarchy—deciding *why* and *how*—is much greater (requiring one to be more thorough) and more comprehensive than the part of it that is *a posteriori*—i.e. merely gathering evidence *that*.
5. Receiving a doctorate (from Lat. *doctor*, “teacher”) signifies that you are qualified to teach a subject. Why is this such a hard degree to attain? Ans: Many people often don't realize how thoroughly one must know something, in order to be able to teach it. Being a doctor signifies that you know not only everything that there is to know in the field, but also all the ‘Why’s and ‘How’s, that is, all the connections to other things. Only when you fully understand all the lines of causality in this way, are you ready to answer any question that might be raised about the matter.

3. Teaching

In teaching we should seek to impart ‘broad’ and universal concepts first, and more particular ones later, often only when they are inquired about. Thus in teaching, we teach from the top down. However, when we teach those first universal truths, even though they may have lots of ramifications, implications, and consequences, yet we should always seek to impart them in the simplest language possible. Such truth then appears simple (rather than far-reaching) because it is not ‘fleshed-out’ in all its consequences. Instead, we merely plant the seed of it within them—the formula that most concisely expresses it—and then leave the seed to slowly germinate and grow within them. Thus lessons are imparted in their most general, unspecific form into the hearer's comprehension.

After the students have learned all the broad, general truths—the first principles of the science—then they can begin to move on to more particular consequences. Oftentimes the students themselves should become proficient at deducing these secondary conclusions, since knowing *how* to reason is often more

Diagram 3.70



Comment [LU310]: We teach our children the most important lessons first, and we do it in the simplest language.

In teaching students a great truth, we do not digress or diverge or take the time to explicate and enumerate all its specific consequences. Rather, we feed it to them in its direct, most general, most simple-sounding form.

important than knowing that something is the case. A standard deduction is often called a **theorem** (from the Gk. “theoria” from Gk. “orao,” to see), because when you know *how* to do something, then you can as-it-were ‘see’ (or imagine) your way through **the necessary steps**, to the desired outcome. Of course because of the nature of the science or the immaturity of the students, it may not always be possible to personally derive every conclusion, and then students must be content to learn the lower consequences simply by being told what is what.

After students have derived or learned all the major conclusions of the science, **it is then possible** to cross into the physical realm and justify certain essential truths with hands-on examples and experimentation. The goal here is to either ‘prove’ (if doubttable) or ‘cement’ (if far-reaching) a particular fact or set of conclusions into the child’s memory, so that the child will have a particular vivid experience to refer to, when encountering this situation, or applying its principle in the future. When the goal of the science is especially for its physical consequences, then this stage can be the major part of the work. Thus after all the book-learning, doctors and engineers, and secondary-language-learners spend a long time learning to actually *do* and make use of what they know. We see then that the third step as-it-were exposes the science to the light of day, and sees how it actually functions in real life.

As we teach, we of course impart knowledge, and also show how to do things, but we should also periodically check for understanding: *why* something must be the case. Ideally, a student who knows *how* to do something, will also know *why* they do what they do (which is why in a two-column proof we require the students to list the “reasons”). However, what may seem intuitive to one student, may not always be explicit or clear to another, and so we must often put them on the spot and ask leading questions, to try to get them to ask these questions for themselves. Consequently testing and answering **open-ended questions** is a **critical part** of any learning-experience.

The goal in all of this teaching is twofold. On the one hand, it is to ultimately establish episteme in the learner—not so much episteme as an expert or teacher might possess, but enough for the learner to construct a loose framework or understanding out of the most important principles of the science (cf. Diagram 3.7-8). A good teacher keeps track of where his/her students are in the process, and doesn’t feed them more than they can handle. Ideally, truths would be presented in so logical an order, that the learner would never feel that a new concept was out-of-context in relation to what came before. However, it isn’t always possible to present things in so natural a way, and thus the teacher must make wise and prudent choices about when and where to regroup, ‘change tracks’ and start a whole new topic. The other goal is to cultivate a climate of inquiry and interest in the student, so that the student will want to seek *more*—either by applying it to real experiences out in the physical world, or interiorly in other fields of study. Indeed, the idea of a **liberal art**, is to train the mind into a method of investigation which will serve it throughout its whole life.

Questions:

1. Why do we impart universal truths in the simplest language? **Ans:**
Partly because the universal truth is of its own nature simple, but

Comment [D311]: Do not confuse this word “theorem” with the word “thesis,” because they come from two different Greek roots. “Thesis” means ‘to put’ [an act of putting]; “theorem” means ‘to see’ [an act of seeing]. Do not confuse it either with the word “theory,” because they are two different things: Whereas a theorem is a discrete deductive proof (descending from first principles), a theory is an hypothesis or thesis (ascending toward becoming a law, or first principle).

Comment [D312]: Developing a good sense of intuition (one of the integral parts of Prudence) is often the key element in remembering how to go about deducing or proving something in a theorem. However if one’s intuition is not likely to be able to remember how to go about it, then one should leave for oneself mental ‘signposts’ along the way to remind oneself how to go about doing it. These signposts can be found in things like mnemonic devices, acronyms, pre-visualized ‘cheat-sheets’ or ‘flash-cards,’ self-invented songs, or rhymes that contain the subject-matter, or simply in the firm resolve to remember that something is/goes one way, rather than another.

Comment [D313]: Obviously, hands-on experience cannot occur unless teaching has preceded it and reached a sufficient depth and specificity so as to have relevant, practical, experience-able consequences.

Comment [D314]: Open-ended questions are normally essay questions (Why is it . . . ? / How do you . . . ? / Explain . . .) which give no hint about what kind of an answer the questioner is looking for. Consequently to answer an open-ended question, the answerer must positively *show* what he/she knows. Multiple choice, Fill-in-the-blank, True-False and Matching are not open-ended questions.

Comment [D315]: Students often admit that they learn the most when studying for (or taking) tests.

- mainly because the hearers themselves are not ready to hear all the consequences at once; thus we impart only the un-fleshed-out seed.
- Which of the three parts of Diagram 3.69 do theorems have to do with?
Ans: Explaining *how*.
 - Why is it often more important to know *how* than to know *that*? Ans: Because if you know how to reason, than if you should ever forget something, you will be able to re-deduce it from the first principles.
 - What are the three steps in teaching a science? Ans: (1) Learning the first principles, (2) deducing secondary conclusions, and (3) verifying select conclusions with direct, hands-on experience.
 - Why is it important to ask oneself 'leading' questions? Give an example in real life, where doing so could be important or beneficial. Ans: When things aren't going right (e.g. in a company structure), it often pays to ask oneself why. Oftentimes, it is one's own boss who is being negligent towards oneself. A proactive employee who demands to have clear answers and instructions, and who even goes to higher ranks in order to get them, will quickly either be fired (in which case the company itself is bad, and probably not worth working for anyways), or rise in the ranks.
 - What are the two goals in teaching? Ans: To establish episteme in the learner, and to inspire them to seek more.

Comment [D316]: In effect, this ability to re-derive is what long-term memory is (as we shall see in Section 5.1.4), except that those with long-term memory haven't necessarily yet forgotten. People with long-term memory have organized all their facts into a rational structure, so that they know particular truths *through* (i.e. as instances of) the more general truths that cause them. Thus as things fade, and memories become foggy, they remember and hold firmly to the few *key* things that are most important in that science, and from these they can remind or 'refresh' themselves about all the other things, whenever they need to. These "key things" are usually just the (1) first principles (laws), and (2) how to re-derive or 'think about' a handful of particularly important theorems, and maybe (3) a few general impressions about the scope or nature of the science.

Chapter IX. The Intellectual Faculties

Having studied the functioning of Intellect, we are now prepared to study the ways in which it actually occurs in human nature, and all throughout the Universe. To do this, we shall study the intellectual faculties. As shown at right, there are typically only two Intellectual faculties in each level. In the sensate layer, all four faculties have an intellectual component, but the most properly intellectual of them occur in the willful order. We will learn the explanation for why this is in Unit V, but for now it is sufficient to note that the most properly intellectual faculties are in fact Sight and Imagination, not Instinct and Action (although these are somewhat intellectual, too).

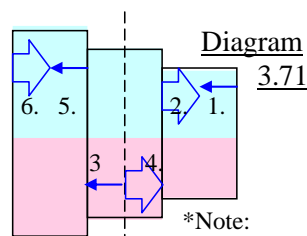


Diagram 3.71

***Note:** Vertical is →

<u>Faculties of Being</u>	<u>... of Becoming</u>
1. Knowledge	2. Understanding
3. Sight	4. Imagination
5. Force	6. Growth

1. The Rational Faculties

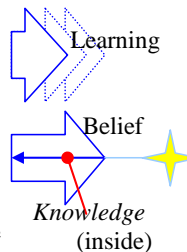
We have already extensively studied the rational faculties, and so only a brief review is necessary.

Knowledge

As stated earlier, knowledge is a statement that “[higher thing] is [lower thing].” The first is called the subject, the second the predicate. Usually the subject is some substance, and the predicate a quality. If the predicate truly applies to the subject, we say that the sentence is “true.” Thus in knowledge (and in all Intellect in general), truth occurs when the lower is suitable to the higher.

Understanding

Diagram 3.72



As earlier stated (cf. diagrams 3.7 and 3.26-28), understanding occurs by the construction of multiple statements together into a framework that is broad and also high. Whereas knowledge is a kind of Being at the rational level, Understanding is a kind of Becoming at the rational level. Thus we construct our understandings all throughout life. Understanding has three alternate forms: As it is in the process of coming-to-be it is known as Learning. When

To believe is “to think with assent” (*Summa*, II-II.2.1). When we willfully ‘force’ our own assent to something we believe it.

understanding exists with knowledge surely within it, it exists as Belief. There are many kinds of belief. In its fullness,

Understanding’s two alternate forms: Learning and Belief.

Belief occurs when your Understanding has that rigor and certainty which belongs to Knowledge (a Being faculty). Thus those who believe things understand what they believe, but they understand it not in a Becoming way, but in a sure, permanent, eternal way. Thus Belief is like the Being-component of Understanding. Since it is the Being-component of Understanding, all understanding has at least a preliminary or rudimentary kind of belief within it. We need this temporary, contingent belief in order to grant what someone else says ‘a hearing.’ Belief (or faith) exists in this preliminary and rudimentary way, when you simply ‘take someone’s word for it.’ Here it isn’t implied that you actually believe them, that what they say is real, but only that it is hypothetically real, that it could be the case. Thus Belief can exist in the Hypothetical, but it reaches its perfection when it believes that something is *real*. Lastly, when Understanding attains to the level of understanding some higher principle (the star in Diagram 3.72) that one didn’t understand before, but which now sheds a whole new light on everything within that genus, understanding becomes Episteme.

Questions:

1. Explain the three other forms of Understanding, classifying each one as a kind of Becoming or Being. **Ans: Learning is understanding in the process of becoming. Belief is understanding based on some inner knowledge; since knowledge however is a**

Comment [D317]: Every expression of Becoming must have a framework of Being within it, to hold it up, and around which to grow. As can be seen from Diagram 3.71, the Becoming and Being go in different directions: If the Becoming is growing up, the Being is compressing down.

Comment [jdr318]: There can be many kinds of faith based on who is revealing/teaching, and on what authority, or grounds. There can be divine faith (if you are believing God), there can be general faith in a large set of truths, or specific faith in some particular statement; there can also be active faith (a.k.a. trust) if it is triggering one’s acts. There can also be merely natural faith, as when one has ‘faith in oneself’ or ‘faith in one’s best friend,’ that he won’t let you down. Also, belief doesn’t have to be final belief, but can be just temporary or hypothetical belief, given only so that we can grant a ‘hearing’ to what someone is saying. This contingent or temporary kind of belief is an integral part of Apprehension.

kind of Being (not Becoming), belief is also a kind of Being, that is, it is Understanding as-it-were frozen in time. Lastly Episteme is also a kind of Being, since it includes and comes from a principle which is also frozen-in-time (as just what it is, in an eternal 'now.').

2. Recall: What are some ways or methods that one can learn new principles? **Ans: Induction, Deduction, Dialectic, etc.**
3. Recall: Why is ____ partly intellectual? Draw these into Diagram 3.71.
 - a. Action **Ans: Because it is seen in an exterior visible way.**
 - b. Instinct **Ans: Because it is the response to intellectual values (e.g. the value of a tiger).**
In the students' drawings, Instinct should be located in the intellectual/spiritual quadrant of the sensate realm, and Action in the intellectual/physical quadrant, cf. Diagram 2.14. Instinct should be drawn as an ascending arrow of Being (i.e. a thin arrow), and Action as a descending arrow of Becoming (i.e. a thick arrow).
4. Does Belief also involve the Will? Hint: Think about what direction it is pointing in Diagram 3.72. **Ans: Yes. Belief is "an act of the Intellect determined to one by the power of the Will" (Summa, II-II.2.1.ad3,II-II.2.2,II-II.2.9). This is why it is represented as pointing to the right (i.e. toward what is higher), in Diagram 3.72.**

2. The Sensate Faculties

Of the sensate faculties, the two that are properly intellectual are Sight and Imagination. Just as Knowledge and Understanding were respectively Being and Becoming in the rational realm, so Sight and Imagination are Being and Becoming in the sensate realm. Because the two levels are metaphysically akin, rational Knowledge then works *thru* Sight, and rational Understanding exists with Imagination.

However, Sight and Imagination—though Intellectual—are located within the willful order (cf. Diagram 3.71), and so they also display willful characteristics. The eyes can be moved about from side-to-side and can focus far-off, or close-at-hand. Similarly, we see that in Imagination, brain-waves are continually circulating around the brain in a willful way, and—in humans—under the Will's direction. We see then that the two intellectual faculties at the sensate level nevertheless have particularly willful natures.

Sight

Sight would just be an ordinary form of sensation—like touch, taste, or smell—except that the organs of Sight have developed willful abilities, as noted above. This however should not prejudice the fact that Sight itself is a properly intellectual occurrence. Scientifically, Sight occurs when energetic electrons in objects before us, 'blow off' their excess energy as photons, or packets of light. This light enters into our eyes, and is sensed when the chemical retinal within the rods and cones of our eyes, is hit

Comment [jdr319]: Imagination causes or generates Understanding, because you often cannot understand a concept until you visualize it all the way through. This is why people use flow-charts, conceptual diagrams, and other visual aids. Note that in the faculties of Being, the higher pre-exists the lower (prior in Being), but in the faculties of Becoming the lower triggers or occasions the higher (prior in Becoming).

by the photon and is knocked into a straight configuration thereby triggering a nerve signal. We see from this that Sight itself is fundamentally apprehensive: that things are being *received* into the eyes. However, in a philosophical sense, the emission and reception of a light-packet is simultaneous in time, and thus it can be thought of as a connection of direct Being between the eyes and the thing seen. Consequently, one's consciousness is able to penetrate out of oneself and, traveling back down these incoming light rays, become aware of the objects at the other end of them. Thus despite its physical, incoming nature, Sight itself (as a sensate act) is inherently out-going.

Because Sight is outgoing, one's sensate consciousness and rational Intellect are both able to pass through Sight and directly know (about) physical things out in the physical realm. For this reason then, Sight is intellectual, namely, that Intellect and knowledge pass *through* it on their way to knowing real things.

Imagination

How does Imagination occur? When we see an event transpiring before our eyes that we cannot control, it is natural to wish to control it. The brain has developed a way of forming its own imagery about things, and this imagery is formed using the faculty of Imagination. The Imagination is like the mind's eye: It is like a little 'movie' in the mind that is fully under the person's power to develop as (s)he wishes.

Where did the Imagination come from? It is likely that the Imagination developed as a kind of willful Sight. Many times we can imagine with our eyes fully open, imagining some desired action 'over top of' the image that we are in fact seeing. Judging from this, it is likely that Imagination evolved from the same nerve-pathways as Sight (i.e. the optic nerve), but in a reverse manner so that instead of taking in data (of the visible), it began spitting it back out (as the imaginary). In any case, Imagination has developed to the point where it is today a massive, circulating brain-wave with many capabilities. Of course the sense of Imagination can still be strengthened. Initially Imagination only deals with stationary, envisioned outcomes: the wanted parent; the piece of food; to sleep. However, the more children use their eyes (e.g. while manipulating toys in their hands), the more they indirectly also increase the strength of their Imagination, to the point where they can fully imagine doing in their mind, what they *would* do with their hand. What has happened here is that the Imagination has passed from merely watching and 'overlying' in the physical mindset, to imaging in its own right in the spiritual:

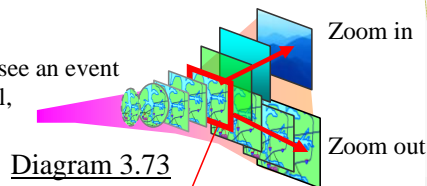


Diagram 3.73

Eventually, the Imagination becomes better at visualizing the elements or steps that lead up to the final outcome. It can even hold one particular images in stasis, and study it, and then decide where to take it or what to make of it.

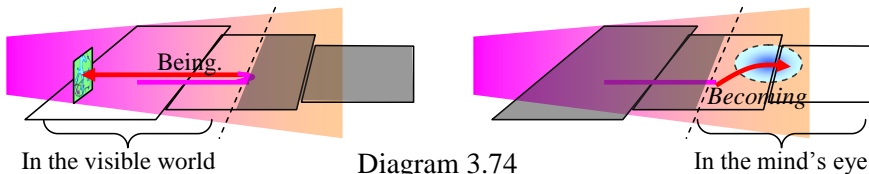


Diagram 3.74

Comment [jdr320]: Time can only travel (or unfold) as fast as the speed of light: 300,000 km/hr. When a star emits some light, and it arrives at another planet which is 300,000 km away exactly one hour later, the two are for all *practical* purposes at the same moment in time. Why? Because there is a direct relationship of Being (i.e. the light-ray, which is traveling as fast as it can possibly go) between the one and the other, and so no other Becoming can possibly transpire in the meantime to alter or prevent the star's effect upon the planet. Thus time, as the rate of Becoming, ceases to exist when only Being is present.

Comment [jdr321]: In philosophical terminology, we would call such a connection of Being a "per se series" (as opposed to a "per accidens series"). People with a materialistic view of the world often deny that per se series even exist; it is fashionable to deny that the material world has any true substances (beings) at all, and to hold instead that matter is nothing but the aggregates or accumulations of infinitely divisible pieces of matter (i.e. that you can always get smaller and smaller). However the Bell Inequality shows that long-distance connections of Being do exist, because there is no way that information could be transmitted faster than the speed of light between two widely separated, but correlated electrons (e.g. in Rydberg states). Consequently, we must conclude instead to the only other possible explanation, namely, that the two electrons have a connection of direct Being between one another and are, for all practical purposes, *the same thing*.

Comment [jdr322]: Certain philosophers have described sight as two beams or headlights that come out of your eyes which travel around the room 'feeling' things at the other end of them.

Comment [jdr323]: Humans know them (in their substance); animals only know them in their sense-qualities—that they are there to begin with; and also that they are dangerous-looking, yummy, brown-and-furry, etc.)