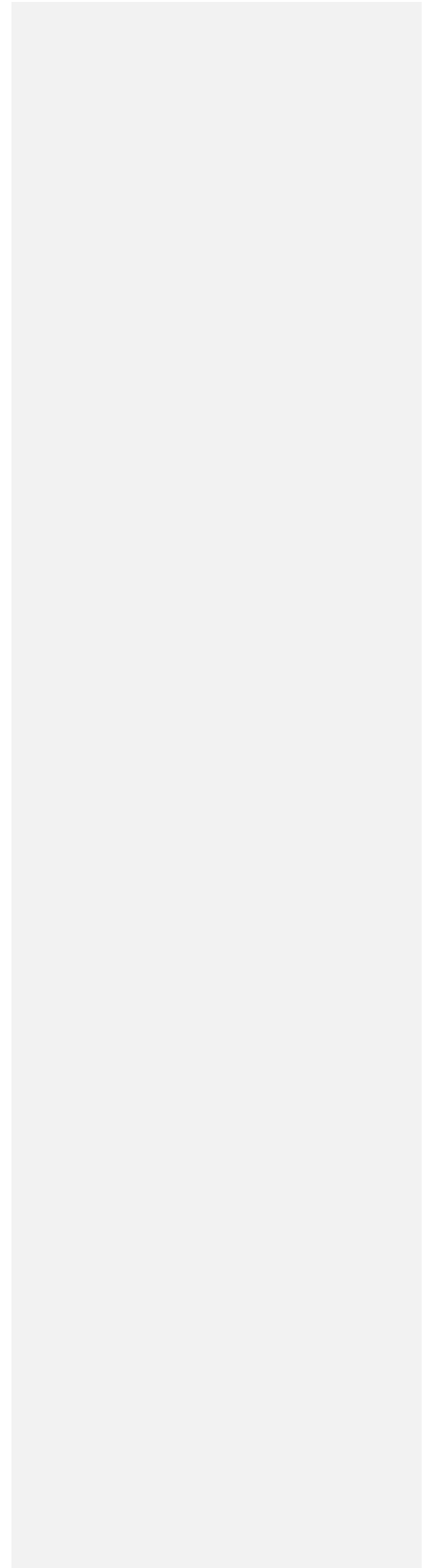

APPENDICES

- A. HANDOUTS
- B. GLOSSARY
- C. BIBLIOGRAPHY
- D. ABBREVIATIONS





Techniques for Doing Philosophy:

1. *Visualize.* It is important to visualize all of a thing's possible outcomes, both in terms of how it would be expressed in a diagram, and also how it would be experienced in real life. A key part of visualizing is visualizing graphs, and knowing not just the graph, but what realities they represent at each step in graph's transformation. Thus you should be able to visualize both the graph, and the changing reality which it signifies. Maybe a particular possibility has an in-built problem or self-contradiction, but it won't become apparent to you unless you fully visualize that possibility and mentally 'put' yourself in that hypothetical situation. Thus when it comes to hypothesizing, if you visualize all the possibilities it will often become apparent to you which of the ways are impossible and, by consequence, which way 'it has to be.'
2. *Don't over-eat.* Too many calories in the brain impairs thinking. Interestingly, different nutritional states are conducive to different kinds of thinking. If you want to react instinctively and spontaneously to people (e.g. if you are at a party and need to improvise small-talk) eat as little as possible so that a bare minimum of sugar is flowing through your brain. This will enable you to think creatively. Likewise if you want to visualize and mentally 'go over' some fine or difficult matter, again don't eat sugar, because this will help your body to quiet down and 'hold still' while your mind stays focused for a long period of time on the task-at-hand. However, if you are trying to memorize a long list of facts eat something fatty, because memories are stored in fat. Of course, never overeat fat, because that will simply incapacitate you, or put you to sleep.
3. *Understand principles.* A principle is something that comes into play everywhere, and is not confined to one or several concrete instances in which it occurs. A principle has value in-and-of-itself, even if no such instances of it should ever occur. Why? Because a principle exists primarily in the realm of *ideas*, not in the realm of *matter*. Thus when you encounter a principle (e.g. matter or form or essence or potency, etc.), appreciate it for what it is, but try not to confine it to a particular example or a particular set of objects that you have encountered in the physical world (e.g. don't identify matter with Newtonian physical matter). After all, there may be other instances of that principle that you have not yet encountered, or that do not even exist yet!
4. *Think things through, all the way.* Take your time and think through the principles and problems. Don't try to rush it. Wait until you've examined an idea from every angle before proceeding to put it into your cache of usable tools. If you don't like something, try to be able to say exactly why/what you don't like about it. You may in fact be correct, but your position cannot be effectively assessed unless you are able to coherently state some positive alternative to that position.

Techniques for Doing Phenomenology/Visualizations

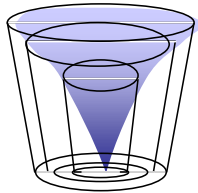
1. Visualize honestly. Visualize something in both ways that it could possibly be, both the way that you suspect and, also the way(s), which you expect to be wrong. If you find a contradiction or inconsistency in one way, so that it doesn't 'hold up,' then discard it.
2. Liken and analogize. If you can't find a contradiction in one of the ways, suspect those ways that most seem to recur at other levels. Often a thing will have a 'type' or likeness of itself at an entirely different level, or in a completely different field, which you may not have thought of (e.g. seeing reminiscences of Biology in Economics). Remember that the world is fundamentally founded on rationality, patterns, and wisdom. Follow your hankerings and suspicions, but be prudent, only supposing those things that seem realistic and feasible, not utterly fanciful.
3. Tend generally. Choose a view because it would represent as many individuals or groups as possible (i.e. in all of human nature, generalized). This means that in your searching and describing, you must try to be standard, official, and average, rather than original, unique, and different.
4. Don't belabor explanations. Most answers to things are simple; if you need a confused, complex explanation, it probably isn't right, or isn't as direct and concise as it could be. Instead, try to re-order it, so that it flows easily and smoothly. Re-work it, re-arrange, or re-orient it, but try to always aim at exactly what is essential—no more, and no less—because this will be the *best* answer you could give. Anything beyond this isn't just unnecessary; it is distracting!
5. Pursue perfection. Many times when you are trying to describe or simulate something that has two (or more) degrees of symmetry, it may be possible to place it backward, or upside-down, or both backward-and upside down, etc., and all of these may seem a little correct. Exhaustively seek the one that is most correct, most essential, or most natural in its orientation, that is, the one that explains all the others, and then more, as well. Don't be satisfied with partial or 'close' explanations. Getting just the right answer now, will permanently 'put' this tool into your tool-chest and enable you to be much more confident in the future, when you return to this matter.

Phenomenology is a way of using our Imagination to visualize and model hypothetical situations, or as a technique for gathering introspective data about oneself. In phenomenology we rehearse a pattern of visualizations to see which way(s) makes sense. Phenomenology is the equivalent of experiments in the physical realm.

Formal Progressions

Recall from Diagram 1.5 that Matter is generally represented in a horizontal manner (as a flat circle or Venn diagram), whereas Form is represented in a vertical manner (usually as an arc or semi-circle showing infusion of something higher into things lower). Recall also from Section 1.2.1 (and esp. Diagram 1.9) how within an essence, there are two standard relationships: A relationship of ‘being essential to,’ (a.k.a. essentially belonging) and a relationship of having.

Essential belonging (the black arrows accompanied by the words “is essential to” in Diagram 1.9 and 1.25) is an inherently formal relationship. When one thing ‘is essential to’ or ‘essentially belongs to’ another (so that the other ‘has’ it), there is ‘no rhyme nor reason’ to it: it just does.



A formal Progression

For instance, if animal-ness belongs to worms, and birds, and hyenas, and whales, and so on,

Examples of formal progressions:

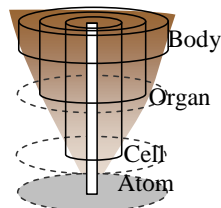
- Fractals and the Mandelbrot set.
- Virtual reality and special effects.
- Life and evolution.
- Calculus integrals (the final +c term could be absolutely anything).

then there is no end to what could follow from the concept *animal*. The situation is *open-ended*. Indeed, there could be an infinite number of kinds of animals! The only way that the concept *animal*

can be united to the concept *bird* is through a formal progression, when you see it happen ‘for real.’ For instance a computer might virtually transform one person’s face into another’s, or an artist might add more and more detailed characteristics to his drawing without ever erasing anything. In a formal progression, there is no law that indicates how the situation has to evolve (except that nothing can be erased or removed—the Law of Logical Consistency): It merely happens and evolves *that* way because it does, and the proof is that you see it actually happen, and thus know that it was possible. When a formal progression occurs, the only thing that essentially matters is the current situation, because anything to come in the future must grow or evolve out of what already is. For example, the ink shooting out of the artist’s pen is directly connected to the trail of ink that has already been laid down: He cannot erase it or undo it. If the old ink were suddenly to disappear, the artist’s current actions would appear to an arriving observer as completely meaningless, as weird detailed squiggles with no pre-existing context in which to place them. The same thing happens in the creation of an essence. As God makes an

We should note in formal progressions that the evolution is *smooth*: It doesn’t evolve in discrete jumps or steps, but occurs gradually.

essence to be, first He knows it as something general (thingness), then as something more specific (animal-ness), then as something more specific yet (primateness), and so on. We see then that as



A formal progression in matter.

Comment [D1]: Sing for your students the song “The toe bone’s connected to the heel bone; the heel bone’s connected to the foot bone; the foot bone’s connected to the leg bone; the leg bone’s connected to the knee bone; the knee bone’s connected to the thigh bone; the thigh bone’s connected to the back bone; the back bone’s connected to the neck bone; the neck bone’s connected to the head bone.”

Then ask the students “Why is your hand connected to your body?” Permit them to mull it over a little bit, and then tell them that by the end of this handout, we will have an answer.

Comment [LS2]: (As often happens in virtual effects, when one face transforms or ‘morphs’ into another.)

Comment [D3]: In other words, you know that it satisfied the Law of Logical Consistency.

Form is coming to be (in a formal progression) it becomes progressively more detailed (or more determinate), and attains new forms that can be known in new ways as they are qualified more and more.

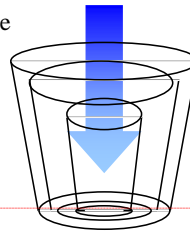
By contrast, matter operates by containing (as described in Section 1.4.1). Containing is a kind of *having* (recall Diagram 1.28) in which what is contained is smaller than oneself. One of the things contained by matter is its form. For instance the 3D area occupied by my hand has the form of my hand inside of it. Thus there is form in the material realm, only the form is found inside of matter. Because there is form in the material realm, form can and does still operate by formal progressions. Thus we see the same phenomenon happen as happened in the formal realm, except that it is inverted. The being of the atom (which contains the form of thing-ness) is formally connected and merges into the being of the cell (which contains primarily the form of living-ness), which is formally connected and merges into the being of the heart (which contains primarily the form of animal-ness), which is formally connected and merged into the being of the hand (which contains the principle of primateness), which is formally connect and merged into the being of the whole body. Thus there is a smooth transition from one to the other—not as smooth as happens in the formal realm, since there is a distinction in size between the atom and the cell, but certainly smooth enough to maintain a substantial unity among the whole being.

Comment [D4]: Having can be of something essential or of something accidental (E.g. in the formal realm, I have greenness; it is outside of me, yet pertains to me. Or, in the material realm I have a car: It is outside of me, but pertains to me.).

Comment [D5]: The heart is formally merged into the being of the hand by the blood vessels that enter into the hand. You cannot say however that the hand is formally merged into the being of the heart.

The Material Realm as Mirror-Image of the Formal Realm

Knowing what Matter and Form are, and how they relate to one another, we can now diagram Matter and Form in the following manner. In the order of Intellect, Form passes first through the realm of essences, making real first the ‘matter’ of broad universal ideas, and then making ‘real’ the matter of more and more qualified or particular ideas (as part of those broad universal ideas), as it goes. It ultimately arrives at the *infimae species* (sing. *infima species*), and the *hypostases* of individuals, making all the higher genera real *in* these. From these ‘most specific’ ideas, Form can then secondarily infuse into the material realm, making specific things real in that realm too. As Form does this, it enters into and ‘(in)fuses’ into a certain piece of matter, and thereby causes that matter to contain and express the *infima species*—the form—of what it is. Each concrete object then (as matter + form) exists *as (qua)* that thing, containing and manifesting its form (or ‘species’) in a particular place and time.

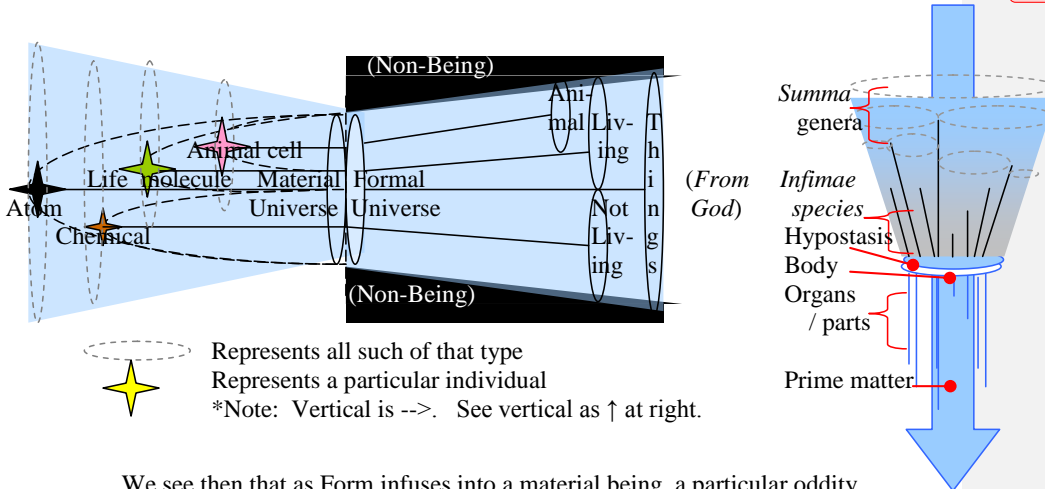


Comment [D6]: *Infima species* means “Least/lowest species;” *summa genera* means “Highest genres.” These two are at opposite extremes (lowest and highest, respectively), of the realm of forms.

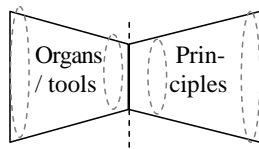
Comment [D7]: *Species* (sing. or pl.) is Lat. for “form(s)” or “appearance(s).”

Secondarily, Form can then continue to infuse down into all the *parts* of that object. For instance, into the part that is the heart, the form (soul) of a raccoon may continue to infuse. When it does this, it doesn’t infuse with the entire form of raccoonness, but only with the determination of animal-ness (i.e. one of its higher genera, cf. Diagram 1.27). After all, we don’t say that this blood-pumping, beating thing is a raccoon, but just that it is a moving, living, thing. Thus, as the species infuses into these lower parts, it becomes again more general. Consequently, Form infuses into them as well, though not simply but *secundum quid* (“in a certain way”).

Comment [D8]: The hypostasis infuses into the entire body simply.



We see then that as Form infuses into a material being, a particular oddity happens: Certain parts of the being tend to match up with certain higher determinations in the form. For instance, in an animal the *hand* corresponds to the *primate* principle (or



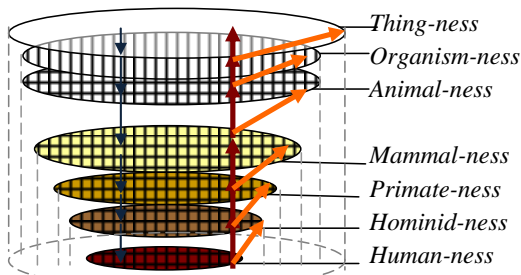
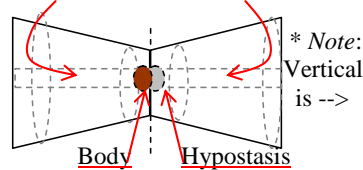
genus); the *heart* corresponds to the *animal* principle (or genus), and the *atom* corresponds to the *thing-ly* principle, and so on, as shown in the diagram at the bottom of this page. Consequently we must conclude that *the material realm is the mirror image* of the formal realm. The two realms just differ

in the manner or mode of propagation in each one. In the formal realm, more specific forms proceed from more general ones by a smooth, formal progression (e.g. the primate is a specific kind of animal), whereas in the material realm there are no such formal progressions (the hand is not a specific kind of a heart), but rather more specific

principles simply contain more general higher principles (e.g. the hand 'contains' the cell, and the hand 'contains' the heart inasmuch as it contains the heart's blood vessels). This means that in the material realm form as-it-were goes 'back up' the path from which it came. It is a great mystery of this world that form should act in this way.

The diagram above, at left, represents the entirety of the universe: all things that have ever been created. If it were to represent just a single individual, it would look like that shown above, at right: Here we are considering not the entire sea of molecules, but only those that are within the person's body; and we regard not all Form, but only the parts of those forms that are directly 'in line' with the thing's hypostasis.

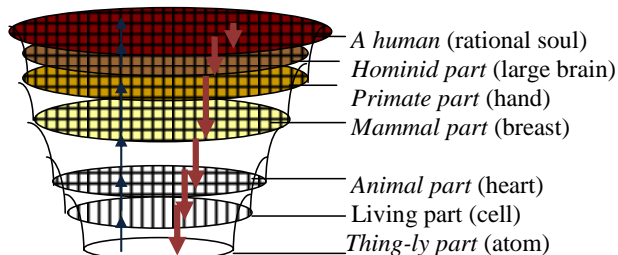
Individual's Body Individual's essence



→ "Is essential to . . ." /
"Essentially belongs to . . ."

→ "Essentially is . . ."

→ "Has . . ."



* Note diagram not drawn to scale.

Comment [D9]: In the top half of the diagram below, emphasize to the students that the circles represents *classes* of things, not individuals (since individual don't overlap). If we were to represent individuals, we'd have to draw lots of tiny little dots inside of those circles, since individuals in a Venn diagram are always represented as dots.

The Preternatural

God gives us potencies so that we may live in a way that is appropriate to our nature. However the way of living that is most appropriate to our nature often involves more than just ourselves; it also involves interaction with other individuals. Accordingly, God has given us potencies (capacities and powers) that are usable not just in relation to ourselves, but toward others as well. When we use our potencies to support an activity that engages them in a communal way, to do things beyond what our limited nature was directly designed for, such activities are called *preternatural*.

Proper Vocabulary Usage:
 Preternatural things are also known as “epiphenomena” (pl. of epiphenomenon), because they are phenomena that arise ‘upon’ (from Gk. επι- “upon,” or “on top of”) what is natural.

Things (either potencies or habits) are called preternatural (from Lat. *praeter* “besides” or “in addition to”) because although they are not essential and absolutely necessary to our nature, yet they are not inconsistent with it: They *can* be used and developed and learned, but don’t have to. For instance, we can use our normal faculties of Sight and Imagination, to learn sign-language. The ability to read sign-language is a preternatural capacity. We can use our normal faculty of voice-projection to speak Armenian; here, the ability to speak Armenian is a preternatural power. Thus all potencies depend upon—at their base level—what is natural, but when they are used in higher ways, they can develop into a preternatural potency built upon the natural one.

Where do preternatural potencies come from? They come from an outside principle, usually someone who teaches us. This person trains us in a certain habit and then, once we perfect this habit, we have that preternatural potency. Thus most things preternatural come from the outside-inward (i.e. it is partially *situational*), not from the inside-outward. Only rarely does one invent some activity, and create a preternatural potency, oneself.

Because preternatural potencies and habits come from an outside principle, they can infuse into and permeate an entire society. The potency, in a way, belongs to the whole community or population that exists there in that way. Thus when we diagram preternatural potencies, we might draw it as existing higher, almost at the level of a species or genus, and not necessarily at the level of the individual hypostases, although individuals can invent and develop preternatural potencies or habits, as well (e.g. one’s own special way to cook dinner or to build a house). Thus a preternatural potency involves an individual growing up into being a mature and well-trained member of his/her community.

Examples of Natural and Preternatural powers and/or habits:

	<u>Natural</u>	<u>Preternatural</u>
Vegetable	Sucking, pumping, rearranging	Nutrient cycles, symbioses
Animal	Mobility, sensation, data processing	Training.
Rational	Knowledge and will	Language, custom.

Preternatural habits are what sustain large societies, cultures, customs and traditions. These things are known as epiphenomena.

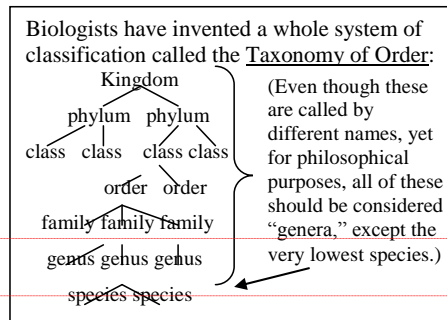
Comment [D10]: The ability to use one’s voice is what is natural; the ability to speak a language is preternatural.

Comment [D11]: Preternatural potencies then are at least partly *situational*; they depend upon the circumstances, the particular country, and era in which a person lives.

The Four Predicables Continued

Genus

The extending / expansion of one essence out upon many things makes up a genus. The word *genus* (pl. "genera") comes from the Lat. word "kind," as when you ask "What *kind* of thing is it?" By mixing with other forms into which it has been extended, parts of a genus can take on different appearances, and these are called species (pl. species)

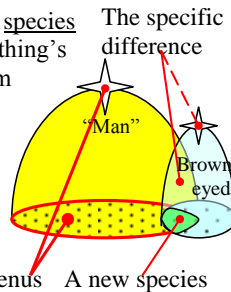


Comment [D12]: i.e. different from one another, though not from the genus, in which they are still included.

Comment [D13]: Compare the diagram at right to Diagram 3.3 of the Tree of Porphyry. Ask the students: "How are these two diagrams alike or different?" [Ans: They're identical!]

Species

In biology, a species is a grouping of organisms that can interbreed (or mix) with one another. However, in philosophy a species is any distinct particular form. The Latin word *species* means a thing's "form" or "appearance," as when you ask "what appearance/form does it take on?" The reason it is called this is because whereas genera do not directly appear to us (we have to discern them by a process of reasoning and abstraction), species do directly appear to us. It is easy to tell the difference between a loon and a mallard (two species), because you can easily *see* their different markings. It is much harder to tell the difference between two genera, for instance wildfowl and The genus songbirds (because you have to see all the similarities among the members of each class and then propose or posit a principle (a specific difference, see next section) by which to know one class as different from the other.

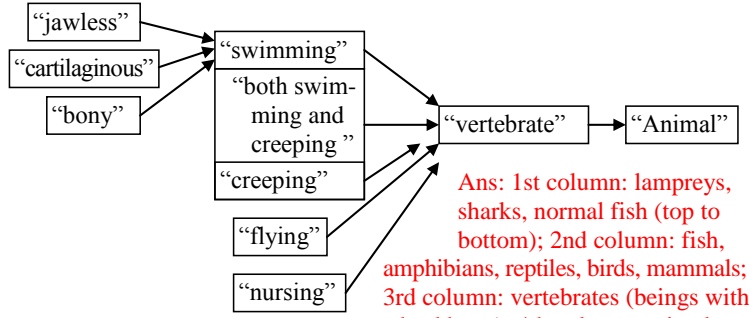


Everything has a form—even invisible things, whose forms are purely *knowable*. In fact invisible things have a stronger and more distinctive form than anything else, and so philosophy is more concerned with them—since they are eternal and unchanging—than with the transitory and changing forms that we see visibly through our eyes. The forms of things that are not physical but spiritual are known as intelligible species. The main difference between sensible (visible) species and intelligible species is that sensible species come from the physical realm, and so sensible species can contain many individuals: We can see many dogs at once, because the light from all of them is shining into our eyes. By contrast, intelligible species can only be known singly, *in kind*, because the light from the single concept of 'dog-ness' is shining into our Instinct or Intellect. Thus there is no difference between the concept 'dog' as known in my own dog, and the concept 'dog' as represented in the star-constellation *Canis major*: In both, 'dog' is understood as referring to a kind of short, four-footed animal that has a certain wolf-y

Comment [D14]: The Instinct (possessed by animals) recognizes intelligible species *in a certain way*, that is how they function and act. The Intellect (possessed only by humans) recognizes intelligible species *simply*, in themselves.

Questions:

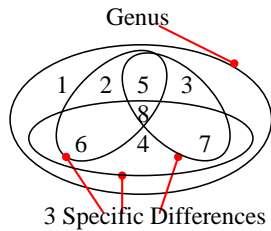
1. See if you can indicate what class of animals each of these specific differences indicates:



Ans: 1st column: lampreys, sharks, normal fish (top to bottom); 2nd column: fish, amphibians, reptiles, birds, mammals; 3rd column: vertebrates (beings with a backbone); 4th column: animals.

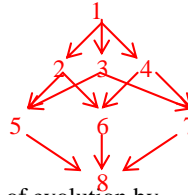
2. Based upon the following Venn-diagram of kinds of beings possessing common specific differences . . .
a. explain what probably caused what: Ans: See writing below.

Comment [D22]: Tell students that this diagram represents the end-on bottom of a diagram, as at the bottom of diagrams 3.40A and B.



Ans: Genus 1 causes its species, genera 2, 3, and 4; these cause additional species 5, 6, and 7; and these as genera generate species 8.

Paths of Evolution:



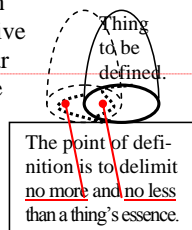
- b. diagram these groupings and their paths of evolution by placing the most general at the top and the most specific at the bottom, and drawing arrows to suggest causality. Ans: See diagram above at right.
- c. What classes of individuals have common specific differences? Ans: 2,6,5,8; 3,5,7,8; 4,6,7,8.
- d. What class of individuals has no specific difference? Ans: 1.
- e. What class of individuals has all three specific differences? Ans: 8
- f. If this describes an evolutionary process, how many species did we begin with and how many do we ultimately have? Ans: We both began and ended with one species.
- g. Explain what happened during the time in between: Ans: 3 new species appeared (2,3,and 4), but then because they were not contradictorily opposed to one another, they eventually combined in a much more replete being (8).
3. With regard to genus, if you say “some men are not green,” what is the genus and what is the species? Ans: The genus is men, the species is green men.

Comment [D23]: It doesn't matter that this is an unlikely species. All that matters is that green is a division or class of men by some method of sorting, that is. In other words, however you choose to sort and divide up the genus into various species is logically permissible.

Definition

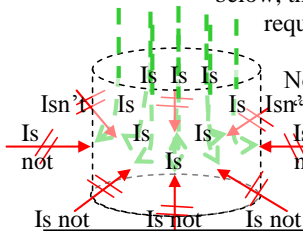
Aristotle calls all of the four predicables “definitives” (*Top.* I.5.102a9) because they each say something distinctive or definitive about the being in question. However, just because you predicate something distinctive of something (e.g. “blue!”) **doesn’t distinguish it from other similar things** (also “blue”). Thus there is a greater and more proper sense of definition which is to delimit or separate off something from everything which is not that thing.

There is a key distinction in philosophy between Essence and Existence. Essences are the forms of possible Being, into which God can pour existence and make it real (cf. Diagram 1.7). Thus essences do not necessarily yet exist. They may exist—in a real thing—but they do not have to. In definition then, we fundamentally define just *essences*—i.e. things that are **not necessarily existing**—not *existents* (i.e. things already existing). Thus for instance, you could perfectly define the idea (or essence) of “hephalump-ness” **to an infinitely precise degree**, even though no hephalumps anywhere exist. We will see



Comment [D24]: Predicating “man is bipedal” says something distinctive about man, but it doesn’t delimit his essence from all other essences (since storks are bipedal as well).

below, that in both kinds of definition—positive and negative—it is not required that the thing yet exist.



Fundamentally, an essence is a quality (e.g. “round”). Now note here that just because you use the word “round” or “roundness” in a sentence does mean that you’re talking about a round, really-existing *thing* (an existent). Thus if you perfectly define a certain quality, or appearance (Lat. *species*), there’s nothing that requires it to yet exist.

In definition we try to seek out the *extremity* of what something is. There are two ways to define an essence: One may **negatively** state what it ‘is not’ (ex extra), or one may **positively** suggest the quality of what it ‘is’ or would be (ex intra).

However, because the *things* defined often do exist, the most natural way to define them is to *limit* or cordon them off *from* other things that exist. In doing this we refer to them negatively, by saying that something else “Is not” them. Thus the most natural way to define (esp. when dealing with real existents) is *negatively*, to tell **what it is not**. Here we say that something else—which usually is existing—is not them. However, even here it isn’t required that the thing defined exist, because just because that other thing exists—and isn’t them—doesn’t mean that they exist. After all neither I, nor you, nor any of us here are five-footed monkeys; however, **just because we aren’t, doesn’t mean that any five-footed monkeys exist.** However, what something

or some quality ‘is not,’ extends itself to **everything else** in the whole universe, and it would take an infinitely long time to list all these things. Thus there is a need for a much more practical manner of definition.

Because we cannot define everything by the infinite number of things that it is not, a more practical way to define a species is to define it *positively*, by its genus + specific difference. When we do this, the genus is usually taken as existing (since we speak of it as a noun), but the specific difference is still only a quality, and so although the genus must exist, the species doesn’t have to. For instance, in the genus of flamingos,

Comment [D25]: The fact that in definition we define things that are not necessarily existing will be very important, when we cover the Existential Fallacy in Section 3.6.4, as well as the 4th Figure of the Syllogism.

Comment [D26]: . . . so that you would know exactly what a hephalump was, if you ever saw one. (E.g. “A pink, honey-eating monster with sewn skin, and the ability to transform in shape.”)

Comment [D27]: Hence, as stated above, definition comes from an E-statement: “No ___ is ___.” No amphibians are fish, no reptiles are fish, no birds are fish, and no mammals are fish (The five classes of vertebrates).

Comment [D28]: Nothing ever follows from a negative statement.

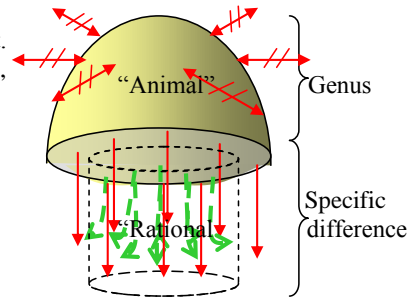
Comment [D29]: Not only are the above four classes of vertebrates not fish (in Question 1 of previous section), but... No buckets are fish, no sledge hammer are fish, and no democracies are fish, either (This rapidly becomes a *reductio ad absurdam.*).

Comment [D30]: E.g. in the definition “Man is a rational animal,” “a . . . animal” is the genus,” and since we speak of it as “a . . . animal,” it is taken for granted that it is something really existing.

we could speak of a species of “three-footed-flamingo,” but there may not be any individuals in that species. The point of this is that when we positively define, even though we are entering from the inside of it (ex extra)—thinking about what it positively would be, rather than what it is not—yet we are still going to mentally indicate only its essence, not necessarily any real existing thing. Things may fall into that essence subsequently, but in defining we’re still fingering only the ‘mental space’ in which stuff might exist.

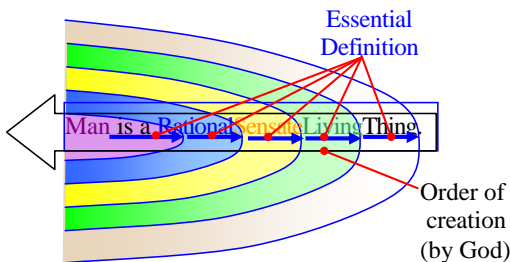
To positively define then, we take a genus, and we indicate an even more specific form within that genus. In so doing, we signify/define exactly what part of that genus we’re talking about. It is here taken for granted that we are not referring to anything *else* in the genus (note red arrows in diagram at right), which doesn’t have that specific form, nor anything outside of that genus (since we’ve already stated it to be in this genus). Thus the genus here performs the negative role of limiting other things out, *shielding* us from everything else in the universe which it is not.

Of course, to fully define and understand something, one needs to make reference to the genus’ genus, as well, for this is part of the definition, too. After all, if one doesn’t understand what an animal is, one certainly won’t be able to distinguish a moth from non-



When defining positively, we name a thing’s genus + specific difference. Here the genus is really existent, but the specific difference is just a further quality, and thus not necessarily yet existent.

animals. But this extra genus also needs to be defined and so we need an even higher genus, and so on. Thus a complete definition of an essence requires mention of **all the essential genera right up to the very essence of thingness**. Once we have attained this, we cannot delve any further into the definition, because insofar as a thing is a ‘what,’ it is the most basic solution to the original question (“What is it?”). Thus when we arrive at thing-ness, we have fully defined *what it is*.



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

In defining, we should seek to use the lowest genus, and the widest specific difference:

Now in regard to the lowest genus, we cannot use something even *lower* than the lowest genus, because that would be the species itself, and one can never use something in its own definition. Why not? Because the terms by which we define (genus / specific difference) should be *better known than* the new term (the species) being defined. Thus we should seek to use not the species itself, but a higher, and better-known genus. Nor should one use a much, much higher genus, because that is imprecise, and can introduce

Comment [D31]: One will notice, that the diagram shows two genera intermediate between “rational” and “thing.” However, if a person understands that “sensate” implicitly includes or suggests “living” then we could have used just one intermediate genus. The pattern can go the other way as well; there can really be an infinite number of intermediate genera if one wants to be that exhaustive in explicating the definition.

Comment [D32]: If you don’t know what an “L-bar is,” how will somebody telling you that it is “a green L-bar” get you any closer to understanding about it?

an element of ambiguity. Defining an airplane as a “winged flying *thing*” (rather than what it should be defined as: “a winged flying *machine*”) introduces ambiguity because there may be other such things included in that high-genus (e.g. birds, which are also “winged flying *things*”), which would’ve been ruled out if you had picked a lower genus. Thus we say that the genus picked should *immediate*, that is, as low as possible, with no intervening genera in between it and the species.

In regard to the species, the species should be as wide as possible, so as to fully include all of, but only the species intended. To do this one should try to hone in on the single quality or specific difference which is most essential to the species, and no other quality. For instance, defining man as a “house-building animal,” is not what is most essential to him, because ants and many other animals build houses, too. Here you have ‘overshot’ and used a specific difference which is wider and more general than what you should’ve. Nor should you use a quality which is too specific, e.g. defining man as a “gun-shooting animal,” because some men don’t shoot guns, and so the quality is obviously not what is most essential to him. Lastly, if you cannot find a most essential quality, although you can combine two qualities artificially (e.g. defining a “hate-crime” as being the murder of any one of six often-targeted groups), it isn’t good to do so, because it is subject to the charge that that is not *primarily* what the thing is. (e.g. that there’s nothing special about these six groups, and that hate-crimes are really known in a different way, e.g. by the *way* in which the murder occurred).

We see then that the terms by which one defines should be *true*, *better known than*, *immediate*, and *primarily* what the thing is (Aristotle, *Post. Analy.* 71b21).

Questions:

1. What’s wrong with the following definitions?
 - a. “A cricket is a green animal.” **Ans: Not the immediate genus.**
 - b. “Man is a right-or-left-handed, rational animal.” **Ans: Not primarily what he is. Primarily, he is just a rational animal. Also you could say that the specific difference is too specific (some are both right and left handed)**
 - c. “A button is something to be pushed.” **Ans: Genus too general. So is a plunger, and a cart.**
 - d. “The United States is the country of Virginia.” **Ans: True, but not primarily what it is.**
2. Which form of definition defines from the inside, and which from the outside? **Ans: Negative definition from the outside, positive definition from the inside.**
3. Do we list a thing’s entire essential definition every time we define it? **Ans: No it is sufficient to just list the genus, and leave all the higher genera as assumed or implicit within that term.**
4. Circle the correct answer: When positively defining, the separation from everything else *outside* the genus is (explicit / implicit), but the separation from other species *inside* that genus is (explicit /implicit). **Ans: explicit . . . implicit.**

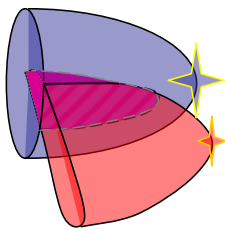
Accidents and Properties

Accidents and properties occur when one essence enters into another, but in a temporary, and non-essential way. An accident is something that arises exterior to the essence in question, whereas a property arises, in a certain manner, from within one of the essence's higher genera.

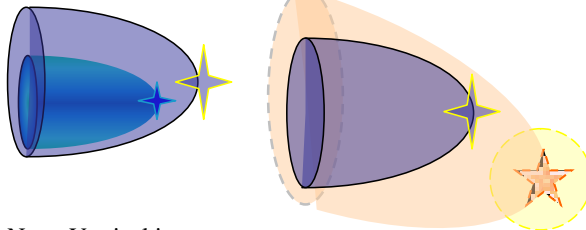
Accidents can enter in *incompletely* (as the green is incompletely in the leaf, since green is also elsewhere in the world), or fully, but *temporarily* (as the Kingship of England belongs entirely to one person at a time, but does not remain with that person forever).

A property is an accident that applies all of the time. Properties apply all the time usually because they come from a higher genus in one's essence (cf. Diagram 3.43). In fact a property is often the specific difference of a much higher genus. For instance, a stork is mobile (i.e. a property not of storks, nor even of birds or vertebrates, but of *all* animals). Thus the property of mobility flows into storks—and all other animals—from the higher essence of animal-ness. Because they apply all the time, they are in fact *essential*, but they are just treated as accidental, because they apply *primarily* to the higher genus itself and not to this particular species.

ACCIDENTS: _____



PROPERTY: _____



* Note: Vertical is -->

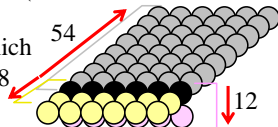
Accidents come from the I-proposition "Some ___ is ___," while properties come from the A-proposition "All ___ is ___." Inasmuch as an I-propositions can always be deduced (by the Square of Opposition, cf. Diagram 3.36) this indicates to us that every property is also indirectly an accident.

Questions:

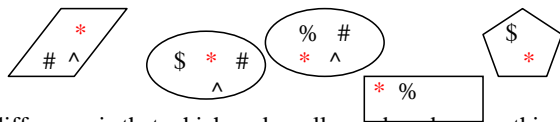
1. T/F: Every property is an accident. **Ans: True.**
2. Classify as an accident or a property:
 - a. The green occurring in a leaf. **Ans: Accident.**
 - b. The flying-nature of a sparrow. **Ans: Property.**
 - c. The fact of having a brother. **Ans: Property.**
 - d. The fact of being married. **Ans: An accident.**
3. Is a specific difference a property? **Ans: Yes! Most certainly.**

Common Material Concepts

Greatest Common Factor (GCF): 6 is the GCF of 12, 18 and 54 (6 contains each of their qualities of *evenness*), so 2 is like their material constituent. Viewed materially, Divisibility by 6 is a context in which all of them can (and do) occur. Here the red arrows show why this is material viewing: It is as if the viewer is inside of the 6 and only from that internal perspective can see the 12, 18, and 54.



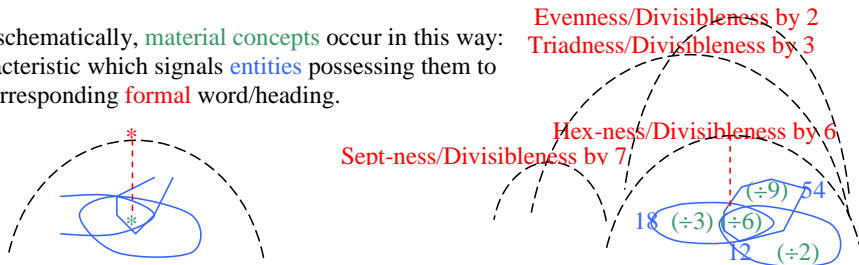
Specific Difference: A species' Specific Difference (*) is the broadest common attribute(s) that occurs throughout all members of that species. For the human species, it is the combination of being both animal and rational. Thus human beings are called "rational animals."



The specific difference is that which makes all members be something else.

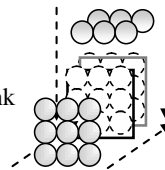
Body: The body is the receptacle in and through which all human forms (vegetable, and/or sensate, and/or rational) are expressed.

Viewed schematically, material concepts occur in this way: They are a characteristic which signals entities possessing them to fall under the corresponding formal word/heading.



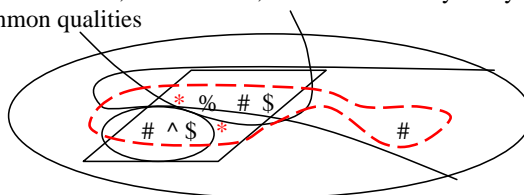
Common Formal concepts

Least Common Multiple (LCM): The Least common multiple of 6 and 9 is 18, so 18-ness is like where the values of 6-ness and 9-ness first combine (If you have groups of 18 you can certainly have groups of 6, and you certainly can have groups of 9.) We think of 6 and 9 as being aspects or views of the form of 18. This is *formal viewing* because the external forms—6 and 9—can project or 'speak' themselves into the 18, thereby creating or generating it to be. This is how angels create material creatures.



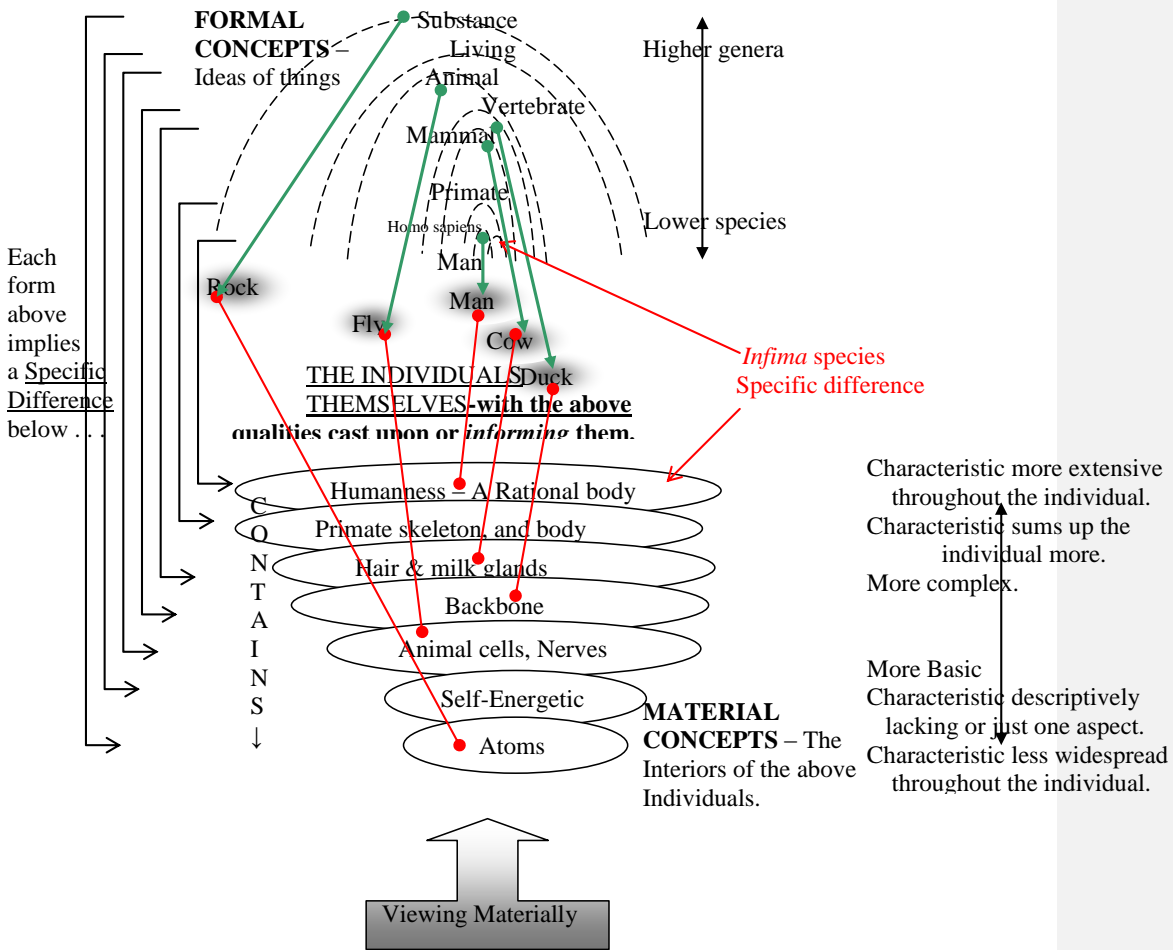
Infima Species: The infima species is the lowest, most limited, most efficient way that you can express, summarize, and account for the common qualities

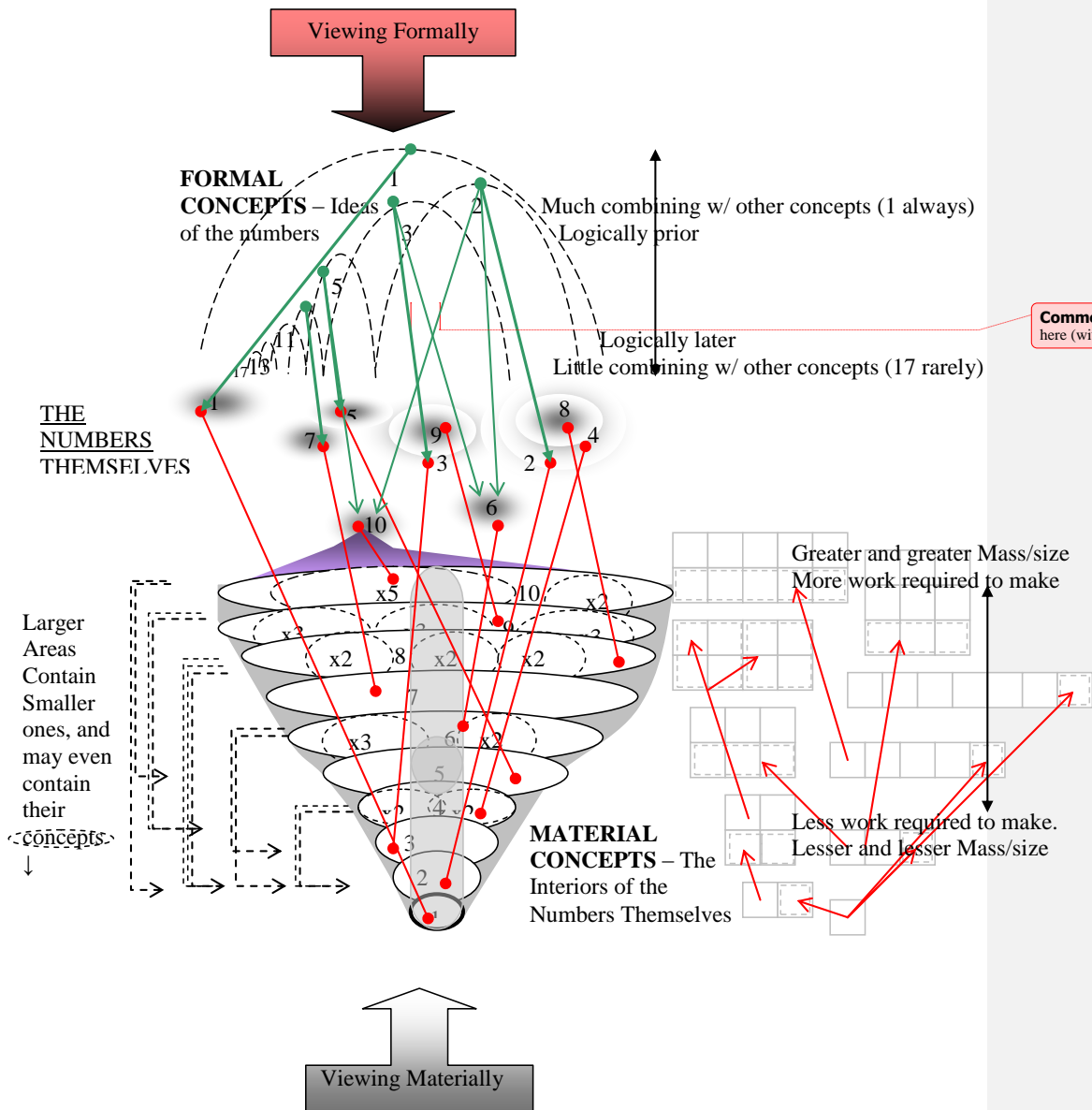
of a group of individuals. Human-ness is the infima species of Slavic-ness and Bantu-ness. However, speaking in this way, one may implicitly include other individuals that one didn't realize one was including: e.g. Chinese.



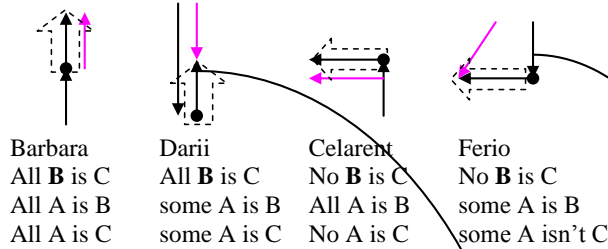
Soul: The soul is the form that expresses / includes all the forms that the body takes on. Sometimes the body acts rational; sometimes the body acts like an animal; sometimes the body act like a vegetable (while sleeping). The soul includes all of these activities.

Viewing Formally

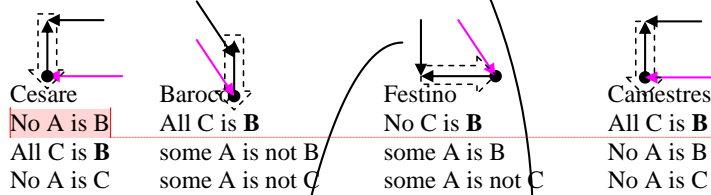




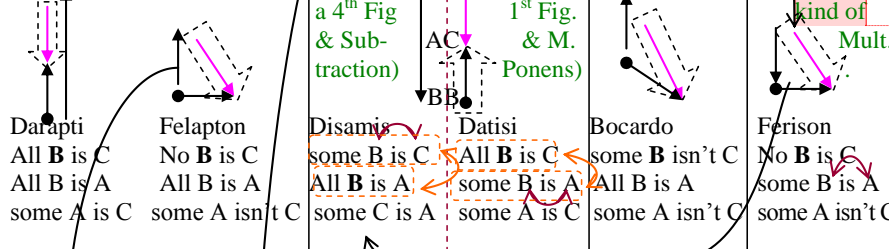
The 1st Figure:



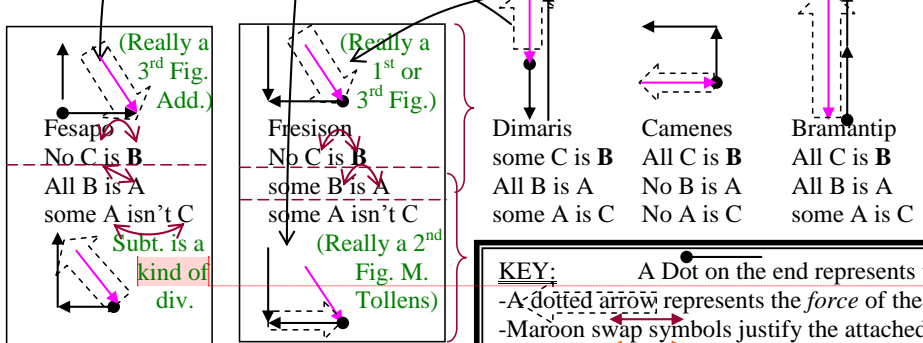
The 2nd Figure:



The 3rd Figure:



The 4th Figure



Generic model for the entire figure.

M. Ponens (like Multiplication)

M. (Like Division) to

Addition (Direct inference)

Subtraction (revision / rethinking)

Comment [D34]: Note that in this mood, the A and C are reversed from what they should be. Thus the two premises are reversed (Major on the bottom, minor on the top), from what it should be, and the conclusion is converted from what it should be. This is done only to preserve the A—C order in the conclusion (i.e. since we had said earlier—in Section 3.7.1—that the major term—C—always forms the predicate of the conclusion). Thus a published, professional version of this sheet would have the As and Cs reversed.

Comment [D35]: Instead of doing 4x3, you can do 4+4+4.

KEY:

- A Dot on the end represents the *hing*
- A dotted arrow represents the *force* of the syllogis
- Maroon swap symbols justify the attached diagram
- Orange swap symbols show reversible correlatives.
- The convention here, according to that indicated by Diagram 3.41 is that A propositions point upward, I propositions down, E sideways, and O angled down.

Comment [D36]: For instance, if you divide and divide and divide, you end up with essentially nothing. Thus one of the ways you can subtract is by dividing something up into infinitely tiny pieces.

B

Glossary:

Absolutely simple perfections – Perfections which are found in God because they are not composed of multiple or accidental considerations. Opp. to mixed perfections (q.v.).

Abstract – To mentally separate something from some or nearly all of the forms within it, often leaving oneself with just (1) the fact of its bare existence or (2) what is *essential* to (necessary for) that bare existence. Something then that is fully abstracted, is a mere concept (q.v.) up on the top, rational level.

Accident – A form or quality that can be other than it is without effecting the kind of being; incidental; peripheral. It is secondary to substance (q.v.).

Accidental Change – Peripheral change in Being that doesn't fundamentally affect the kind of substance that it is.

Act – An Act is a procession of Being that proceeds or evolves in a straight line (usually from above toward what is below) until its logical conclusion. Opp. to potency (q.v.). An Act in the material realm is a physical object; an Act in the spiritual realm is an idea, concept, or spirit. These two existential meanings of act (1st Acts) are opposed to the sensate level's Becoming kind of Act (2nd Act), which is properly an action (q.v.).

There are two kinds of Act: 1st Act and 2nd Act. 1st Act is the first act that any being does, namely, existing. Thus 1st Act is nothing more than one's *Being*, and is given by God. 2nd Acts are then those things that proceed secondarily from one's Being as Actions (q.v.). These secondary acts flow from the creature's own Will.

Action – One of the four sensate faculties, it proceeds in time to effect some real change in the physical world. An action can be called a (2nd) Act (q.v.) when it is considered abstractly, in its spiritual aspect. Also, actions often produce (1st) Acts that is, new beings in the bodily and/or spiritual realms.

Comment [D37]: For instance an action of doing carpentry can result in a new 'act,' that is, a new stably existing table.

Acquired virtues (A.k.a. Natural Virtues) – Virtues that are learned by repeatedly performing the action rightly. As time goes on, they make acting easy and pleasurable. Opp. to infused virtues (q.v.).

Ad intra – Lat. for "Towards the inside." *Ad intra* actions are developments which occur within one's Being. In God, there are only two *ad intra* Acts: God's own self-knowledge—which forms the person of God the Son, the Word—and God's own self-love—which forms the person of God the Holy Spirit.

Ad extra – Lat. for "Towards the outside." *Ad extra* actions are developments which occur outside of one's Being (i.e. to other beings). God's *Ad extra* acts are those by which He creates (and perhaps responds to) creatures.

Agent Intellect – The reputed human faculty, posited by Aristotle, which would generate or cause ideas (concepts) to be created from the sensible species of seen images.

Analogical – Signifying two things similar and related, but not identically the same. Opp. to univocal and equivocal (q.v.).

Anger – The self-propagating passion which results from incurring a hated evil. Opp. to joy.

Antecedent – That which precedes. In an If-then statement, it is that which comes after the "If." Opp. to consequent.

A posteriori – Knowledge which results from or is consequent upon knowledge of the evidence. It is

Comment [D38]: It is possible—especially in light of the 2nd Commandment—that God only relates to creatures in ways which are creative of their be(com)ing. In other words, God will not respond to a creature twice in the same way. Under this theory, for God to respond to a creature twice in a seemingly similar way, there would have to be some at least slight alteration in the creature's being so that the 2nd situation would in fact be different from the first, and thus the creature could still be said to be 'growing' through both experiences.

roughly equivalent to induction (q.v.) and is used in conceiving interior concepts of outside, physically sensible objects or situations. Cf. right half of Diagram 3.5. Opp. to A priori.

Apprehension – The 1st of the three Acts of the Intellect in which a concept is recognized and ‘grasped’ as being present in something. A spontaneous kind of ‘grabbing’ in which the potency of the soul encloses around some outside Act.

A priori – Knowledge which precedes any knowledge of the evidence. It comes either from someone else speaking a word to you (without or before any experience has been had of it), or when the mind ‘figures it out’ for itself through the process of deduction (q.v.), in which case the conclusion of the deductive syllogism is equivalent to such a word. Thus a priori knowledge comes from words (cf. left half of Diagram 3.5). Opp. to A posteriori.

Audacity – The irascible passion which results from performing one’s actions despite the awareness of a threatening evil.

Axiom – A fact that is self-evident and ‘worthy’ to be believed. It is usually self-evident because it is based on one of the four Transcendentals.

Beauty – The knowability of the Good. Its three aspects are *Integritas*, *Proportio*, and *Claritas*. Cf. Goodness.

Becoming – The process of successively being different things in an attempt to participate more fully in the perfect being who is all things (God). Opp. to Being (q.v.).

Being – One of the four Transcendentals, it is that which is real, instantaneous, and unchanging.

Believing – A kind of learning in which you antecedently grant assent to what the speaker is going to say on the basis of his/her reputation, i.e. their (1) knowledgability and (2) trustworthiness.

Blessedness – Happiness (q.v.) in the spiritual mindset; the state in which one possess a final end that is spiritually greater (higher) than oneself.

Body – An Act in the material realm.

Boldness – The integral part of Fortitude by which one approaches a difficulty or danger, in the first place. Cf. magnificence.

Capacity – A potency for receiving some kind of action. Opp. to power (q.v.).

Categorization – A special kind of predication according to what is most of the essence of a thing: it always involves two substances (a species/individual and a genus). A kind of abstraction in which one places some concept into one of the broader genera to which it wholly belongs.

Cause – Something whose Being goes *into*, modifies, creates, or motivates something else’s Being. There are four fundamental causes: Material, Formal, Efficient, and Final, respectively (q.v.).

Chaos – The effect of things combining and interacting by accident, rather than by nature; disorder.

Charity – Upward-inclined Love which stretches and broadens one’s heart.

Circumstances – The who, what, where, and when of an Action, equivalent to the action’s Material Cause.

Common Good – Within a society, it is the Good or flourishing of each individual thing, and of each of the major groupings of those things. In human terms, all those who are rational fully participate in and thus should benefit from the Common Good.

Complex – Containing two or more distinct simple forms within it.

Concept – (From Lat. *concipere*, “to conceive”) An organic accumulation of ideas in regard to a thing, while preserving that thing’s unity of substance. An immanent rational word. Since all Being is knowable, there are concepts for everything. In fact the concept is like the pure Being of the thing, independent of all its physical manifestations.

Concept is practically a synonym for essence (q.v.); the only difference between the two

is that the word “essence” focuses more on mental Being *as having been created by and in God the Word*, whereas the word “concept” focuses on mental Being *as being known here and now by us*.

- Concupiscence – The overshooting of emotions/passions beyond the rule of reason.
- Consciousness – The circulation that occurs around some central identity or “I-pole.”
- Consequent – That which ‘comes after,’ or follows. In an If-then statement, it is the part that comes after the ‘then.’ Opp. to antecedent.
- Containment – The act of matter in the material realm. Matter can contain form or lesser forms.
- Contradictories – Terms that are simple denials of one another (usually by the appellation of the prefix “non-” to one of them). Two contradictories exhaust (encompass) between themselves the whole realm of Being.
- Contraries – Terms that are most opposite within the same genus. This is a lesser kind of opposition than contradiction (q.v.).
- Copula – The word that copulates or ‘joins’ the subject to the predicate: It will be either positive (e.g. “is”) or negative (“is not”).
- Death – The permanent separation of soul from body.
- Deduction – The process by which one comes to the knowledge of universal truths through the combination (often in a sylogism) of already-known universal truths.
- Definition – A delimiting or distinguishing of some essence as somehow different from others. Definitions can be positive (genus + specific difference) or negative (“*not _____*”).
- Degrees of Freedom – Ways (or directions) in which something can act or be used, as determined by the situation in which it exists. In the physical realm, the Acts in which we exist are material things, and so there are three common degrees of freedom, equivalent to our three dimensions.
- Desire – (1) Downward-inclined Love which shrinks and narrows one’s heart (spiritual desire). (2) The passion which arises in the sensate layer from the objective horizontal apprehension (i.e. by Sight or Hearing) of an absent and not-yet-possessed good. Opp. to repulsion (q.v.).
- Despair – The irascible passion which results from trying to envision a good end, but being overcome by the Sight of the contrary reality, in which it appears that this end cannot be obtained. Opp. to hope.
- Discursive – Passing one-by-one, from one thing to another.
- Distributed – Applying to all of some class.
- Divine Conservation – The Act by which God holds a creature in existence and continues to make it *to be*.
- Efficient cause – That which causes a thing to be or to be in Act.
- Elicit – To call upon, or invite some action to occur.
- Emotion – A passion that is active in character (and outward-flowing), rather than passive (and just inward-flowing).
- Empirical science – The modern idea of “science,” as anything that can be proven by experimental and repeatable methods. Empirical science centers around *the scientific method*, which is an inductive way of establishing some truth, by means of repeatable experimentation. See also empiricism.
- Empiricism – The view that reality is primarily material, and that it cannot be known except by the