

# I: The First Act of the Mind: Understanding

## Section 1. Understanding: the thing that distinguishes man from both beast and computer (P)

(This section is more philosophical than logical, but it is important because it fleshes out the positive alternative to nominalism and provides the essential philosophical foundation for Aristotelian logic.)

As we have already reported, a new species of human has appeared: one that does not know the difference between a human mind and a computer, between “natural intelligence” and “artificial intelligence.” Some of these people even teach philosophy!

For centuries there have also been some people – many of them philosophers – who say they do not know what the difference is between a human being and an ape. After all, apes seem to reason quite well sometimes. If you put an ape in a pit with a dozen wooden crates, he might figure out how to get out by piling up the crates against a wall in the form of a stairway, whereas some humans would not figure that out.

But there is one simple, observable behavior that clearly distinguishes humans from both computers and animals: asking questions. Computers never question their programming (unless they have been programmed to do so); computers never disobey. They have no will, therefore no will to know. And animals, though curious, cannot ask formulated questions; their language is too primitive.

There is a story that Aristotle, after one of his lectures, was disappointed that his students had no questions afterwards, so he said, “My lecture was about levels of intelligence in the universe, and I distinguished three such levels: gods, men, and brutes. Men are distinguished from both gods and brutes by questioning, for the gods know too much to ask questions and the brutes know too little. So if you have no questions, shall I congratulate you for having risen to the level of the gods, or insult you for having sunk to the level of the brutes?”

Logic specializes in questioning. The three most basic questions humans

ask are: What, Whether, and Why, i.e. What is it? Is it? and Why is it? These are dealt with in the three parts of logic.

The part that most clearly distinguishes humans from computers is the first: understanding a "what," an "essence," the nature of a thing. Computers understand *nothing*; they merely store, process, relate, and regurgitate data. You don't really think there is a little spirit somewhere inside your hand-held calculator, do you? But the world's most complex computer has nothing qualitatively more in it than that, only quantitatively more. An *amoeba* is closer to understanding than a computer, for it has some rudimentary sensation of feeling (e.g. it detects food).

A baby often goes around pointing to everything he<sup>1</sup> sees, asking "What's that?" The baby is a philosopher. "What's that" is philosophy's first question. (Look at any Socratic dialogue to see that.)

The act of understanding, or "simple apprehension" as it is technically called, produces in our minds a *concept*. (Sometimes we use the word "idea" as synonymous with "concept," but at other times we use the word "idea" more broadly, to include judgments and arguments as well as concepts.)

We do not merely understand *concepts*, we understand *reality* by means of concepts. Our concept of a house is our means of understanding the real house. The real house is physical, but our concept is not. The house is independent of our mind, but the concept of it is not: it is in our mind. If all we understood was our own concepts, we would not understand objective reality.

Concepts are amazing things. They can do what no material thing in the universe can do. They can transcend space and time. No body can be in two places

- 1 The use of the traditional inclusive generic pronoun "he" is a decision of language, not of gender justice. There are only six alternatives. (1) We could use the grammatically misleading and numerically incorrect "they." But when we say "one baby was healthier than the others because they didn't drink that milk," we do not know whether the antecedent of "they" is "one" or "others," so we don't know whether to give or take away the milk. Such language codes could be dangerous to baby's health. (2) Another alternative is the politically intrusive "in-your-face" generic "she," which I would probably use if I were an angry, politically intrusive, in-your-face woman, but I am not any of those things. (3) Changing "he" to "he or she" refutes itself in such comically clumsy and ugly revisions as the following: "What does it profit a man or woman if he or she gains the whole world but loses his or her own soul? Or what shall a man or woman give in exchange for his or her soul?" The answer is: he or she will give up his or her linguistic sanity. (4) We could also be both intrusive *and* clumsy by saying "she or he." (5) Or we could use the neuter "it," which is both dehumanizing and inaccurate. (6) Or we could combine all the linguistic garbage together and use "she or he or it," which, abbreviated, would sound like "sh . . . it."

I believe in the equal intelligence and value of women, but not in the intelligence or value of "political correctness," linguistic ugliness, grammatical inaccuracy, conceptual confusion, or dehumanizing pronouns.

at the same time, but a concept can. Suppose someone asks you whether you think San Francisco or Boston is a more beautiful city. You understand the question, and you answer it. Your mind compared (and therefore was present to) two cities 3000 miles apart – at once! Your concepts did what your body cannot do.

Though your body is unimaginably tiny compared with the universe, your concept of the universe is greater than the universe! For if you understood the word “universe,” your thought ‘surrounded’ the universe – the same universe that surrounds your body. You did that by having a *concept* of the universe.

Concepts have at least five characteristics that material things do not have. They are spiritual (or immaterial), abstract, universal, necessary, and unchanging. reducing  
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1. **Concepts are spiritual (immaterial, non-material).** Compare the concept of an apple with an apple. The apple has size, weight, mass, color, kinetic energy, molecules, shape, and takes up space. The concept does not. It is “in” your mind, not your body. It is not in your brain, for your brain is part of your body. It has no size, so it cannot fit there. (If you say that it does have size, the size of an apple, then you must say that your brain must get as big as an elephant when you think of an elephant.) It has no weight, for when you stand on a scale and suddenly think the concept “tree,” you do not gain the slightest amount of weight.

In contrast to the *concept* “apple,” the *word* “apple” is just as physical as an apple. It takes up space on the page, and it is made of molecules. The spoken word also is made of molecules: wave-vibrations of sound of a certain size and shape. But between these two material things – the apple and the word “apple” – there is the concept. That is the only reason why we can use the word “apple” to mean the physical apple we eat. We use one physical thing (the word “apple”) as a symbol of another physical thing (the apple we eat), and that mental act, or mental relation, that we set up, is not a third physical thing. It is a concept, and its *meaning* is the real apple even though its *being* is not the being of an apple. (It is not in space, has no molecules, etc.) The concept’s *meaning* is “a physical fruit that grows on apple trees, has red or green skin, etc.,” but the concept’s *being* is not physical (material), but spiritual (immaterial).

Our having the concept of an apple is dependent on our having a physical body, of course: it is dependent both on the eye, which perceives the apple, and on the brain, which works whenever we have a concept. If we had never seen an apple, we would never have a concept of one, and if we had no brain we could not think the concept of an apple. But the concept is not just the physical apple or the visible word or even the sense image, which is somewhere between a physical and a spiritual thing. (We will see the difference between a concept and a sense image more clearly in the next few paragraphs.) The sense image is like a scouting report sent out by the intellect. The intellect is like a king who stays in a soul-castle and sends out scouts (the senses) to report to him what’s going on in his kingdom. Or, to change the image, the intellect is like a paralytic in a wheelchair who directs a blind man where to push him. (In this image,

the intellect is symbolized, paradoxically, by the physically sighted paralytic and the senses by the blind pusher.) The two are interdependent.

When a thing is known, it acquires a second existence, a mental existence; the *thing* becomes a *thought*. If familiarity did not dull us, we would find this utterly remarkable, unparalleled in all the universe. No galaxy, no physical energy, no cell, no animal can do this; only a mind can give a thing a second life.

Every language speaks of the human mind, or intellect, as doing something more than the (animal) senses do: as going “deeper” or “below the surface” or “penetrating” what is sensed, like an X-ray; as going beyond appearances to reality, beyond *seeing* to *understanding*. (Thus the irony in a blind poet or “seer” like Homer, John Milton, or Helen Keller “seeing” more than sighted people.) Only because we distinguish between appearance and reality do we ask questions. There would be no philosophy and no science without this distinction.

**2. Concepts are abstract.** The English word “abstract” comes from the Latin *abstraho*, “to draw (*traho*) from (*ab(s)*)” or “to drag out of.” Our mind extricates, or separates, something from something else. What is this something?

When we form a concept, we abstract one aspect of a concrete thing from all its other aspects – e.g. the size of a flower (when we measure it), or its color (when we paint it). No one can physically or chemically separate the size from the color, or either one from the whole flower; but anyone can do it mentally.

We can abstract, or mentally separate, adjectives from nouns. Animals simply perceive “green-grass,” but even the most primitive men mentally distinguished the green from the grass; and this enabled them to imagine green skin, or red grass, even though they had never seen it. And once they imagined these things, they set about making them, e.g. by dyeing their skin green from the juice of grasses, or painting pictures of red grass with dye made from beet juice. (When he was two, my son made the thrilling discovery that he could make “purple doo-doo” by mixing up blue and red Play-Doh® in the shape of a hot dog.) Technology and art both flow from this human power of abstraction.

The most important act of abstraction is the one by which we abstract the essential from the accidental. By having a concept we can focus on the essence and abstract from the accidents. Some people are reluctant to do this. Their conversation is utterly concrete – and utterly boring. You want to scream at them, “Come to the point!” These people have few friends, for to have friends you must learn to abstract, i.e. select, set apart, or pick out, the things that interest both them and you. Abstraction fosters friendship – a concrete payoff!

Abstractions have received bad press in the modern world. Too bad. The next time you hear someone say “I’m a concrete, practical person, and I hate abstractions,” remind them that babies are very concrete – and uncivilized.

Abstract ideas do not move us as much as concrete things do. Intellectuals, who live with abstractions, are often practically ineffective dreamers and rarely “movers and shakers” of men, because men will not usually live and die for abstractions that move only our mind – even stirring abstractions like “liberty,

equality, fraternity” or “democracy” or “freedom” – but for concrete things that move their loves, like their families or their buddies next to them in the trenches.

3. **Concepts are universal.** Ask a child what he wants and he may answer, “Everything!” He has formed a universal concept. (Most concepts are only relatively universal, not absolutely universal like “everything” or “something” or “being.”)

E.g. “tree” is a universal concept because it is a concept of not only that one tree in your yard, but of all trees. “Beauty” is a universal concept, and when we judge whether San Francisco or Boston is more beautiful, we judge both cities by the universal concept “beauty” (or “beautiful city”).

The literal meaning of “universal” is “one with respect to many” (*unum versus alia*). This means that a concept, while remaining one – one essence, one meaning – nevertheless is true of many things, predicable (sayable) of many things, applicable to many things. This oak and that oak and that maple are all “trees.” We can truly apply the concept “tree” to any and every possible and actual tree that ever was, is, or will be.

The concept signifies something common to many different things. This oak and that oak are different in size, and oaks and maples are different in shape of leaves and taste of sap, but all are trees. All share the same common essence, or essential nature. That is what we are seeking to know when we ask “*What is that?*”

Only the concept gets at this one-in-many, this common essence in many different things. It is not in sense perception that we see this universal. We perceive only individual men and women, who are either tall or short, either old or young, but “human being” is neither male nor female, neither tall nor short, neither old nor young. “Human nature” does not *look* male or female, tall or short, old or young. It does not “look” at all; it “means.” Appearances are particular; but essences, or meanings, or the natures of things, are universal. You cannot touch them or feel them; you can only understand them. They are known by concepts.

4. **Relations between concepts are necessary.** Every tree *necessarily* has leaves; every triangle *necessarily* has three sides. A tree may or may not have *many* leaves, but it must have *leaves*. A triangle *has* to have three sides; that is dictated by its essence, which is grasped in the concept.

Thus we can be *certain* of relations between concepts, as we cannot be certain of material things. We can be certain that a triangle will have 180 degrees in its three angles, but we cannot be certain how tall a tree will be.

5. **Concepts are unchanging.** Two plus two can never become other than four, but two bunnies plus two bunnies can become more than four bunnies. The concept “blue” can never become not-blue, but the blue sky can become not-blue. The nature of a thing, which is known by a concept, is unchanging; but things, which are known by sense experience, are changing. Humans change; essential human nature does not.

The most important of these characteristics of concepts for philosophy is

their universality. "Universal" means "one-in-many," or "one-something-in-many-diverse-somethings" ("uni-versa"), one nature or essence or form in many different concrete individuals. A single concept unifies many sense perceptions under one idea. With our senses we perceive houses of different shapes, sizes, and colors, but with our mind we understand the nature of all of them as "house." We see many individual houses and many parts of each house – the doors, roofs, windows, and porches – but we do not physically see the one nature of the house, the "houseness." It is only the understanding mind that brings all houses under the single concept "house." The concept makes what we see intelligible. It brings order out of chaos.

Without it, metaphysics would be impossible. Metaphysics is the most fundamental branch of philosophy; it is the study of being, or reality as such; the study of the laws or principles that are true universally of all being. The most universal concept of all is "being." Everything is some kind of being. Thus "being" is the most fundamental concept. Before we know more specifically what a thing is, we know that it is a being. There is nothing outside being.

The concept of being is implicit in every other concept. E.g. when we know what a house is, we know what a house *is*; we know its being, its essence, its reality, its substance.

The concept of being is like the genie in the bottle: once the bottle is opened it grows so large that it fills the whole sky.

This is crucial to logic as well as philosophy. For all of logic, really, is about two words, two very common yet very profound little words: "is" and "therefore." "Is" is the first word that relates two concepts to each other in a proposition (the subject and the predicate): "Man *is* mortal," or "A tomato *is* not a fruit." "Therefore" is the word that relates two or more propositions (the premises and the conclusion) in an argument: "All men are mortal, *therefore* none are immortal," or "Tomatoes are vegetables, and vegetables are not fruits, *therefore* tomatoes are not fruits."

## Section 2. Concepts, terms, and words (P)

A *concept* exists only privately, in an individual mind; a *term* is in the public domain. A term expresses objectively what is known subjectively in a concept; a concept is a person's subjective knowledge of the meaning of a term.

A *word* (or group of words forming a phrase that is less than a complete sentence) is the linguistic expression of a term. The difference between a term and a word is the difference between what is common to all languages and what is different in different languages; for the same term, the same unit of meaning, is expressed in different words by different languages. Languages are man-made, conventional, and changeable. Terms are not. That is why it is possible to translate between different languages: because the same stable term, or unit of

meaning, anchors many different words in many different languages. E.g. "love," "caritas," "agape," "lieb," "amor," and "amour" are the same *term* in six different *words*.

A word is physical and sensible (to the eyes or the ears, or to the touch, in Braille). A concept is not. A term mediates between a concept and a word: insofar as it is a unit of meaning, it is not something made of matter or perceivable with the senses; insofar as it is expressed by a word, in any language, it *is* perceivable by the senses, like the word "word" in this sentence.

The difference between a term and a concept, and the difference between a term and a word, may be difficult to grasp, and it is not crucially important from a practical point of view for the logic student to understand it; but it *is* crucially important to understand the difference between a concept, a judgment, and an argument; or between a term, a proposition, and a syllogism; or between a word, a sentence, and a paragraph.

*A term is the most simple and basic unit of meaning.* A term is simply any word or group of words that denotes an object of thought. The English word "term" comes from the Latin "terminus," which means "end." A term is one of the two "ends" of a proposition, as the first and last points on a line are the two ends of the line; for a term is either the subject (the beginning) or the predicate (the end) of a proposition, when it is in a proposition. Whether a term is inside a proposition or not, a term is whatever *can* be used as the subject or the predicate of a proposition. "Apples" has the same meaning whether it is in the proposition "Apples are fruits" or whether it is outside the proposition and merely "apples." A term is simply any word or group of words that denotes one object of thought.

Terms are never either true or false. Only propositions are true or false. "Apple" is neither true nor false. The proposition "Apples are fruits" is true, and the propositions "Apples are vegetables" is false. Instead of being true or false, terms are unambiguous or ambiguous, clear or unclear. Propositions are ambiguous or unambiguous only insofar as their terms are ambiguous or unambiguous. You will learn how to change ambiguous terms into unambiguous terms in the chapter on *defining* terms.

### Section 3. The "problem of universals" (P)

The fact that most terms are universal (predicable of many things) has given rise to one of the classic problems in the history of philosophy, the so-called "problem of universals." First raised by the ancient Greek logician Porphyry, the problem arises when we ask this question: What is there in reality that universal terms refer to – especially *abstract* universal terms like "beauty" or "humanity"? It is clear that concrete singular terms like "Socrates" or "the moon" refer to concrete individual entities that exist in a particular space and time; but where

and when do we find beauty or humanity, as distinct from this beautiful thing or that human being?

We have said that terms express concepts, that concepts are universal, and that concepts refer to the *essences* or *natures* of things. Are these essences universal, like the concepts we have of them?

If they are not, then it seems that our concepts of them are not accurate, for they do not correspond to their objects. And in that case, our concepts would distort rather than reveal the true nature of things.

But are universals then real things? Is beauty real as well as beautiful things? Does humanity or human nature or the human species really *exist* in addition to the 6+ billion human beings that *have* the same essential human nature?

Plato thought they did. He called these universals “Forms” or “Ideas” – not ideas in minds but Ideas outside minds, objective Truths; not thoughts but the objects of thoughts. He believed there were two kinds of reality, two “worlds”: a world of concrete, material individual things in space and time that we know by our bodily senses, and another world of immaterial universal Forms that we know with our minds through concepts.

The “two worlds theory” seems fantastic to common sense and an example of what one philosopher (Alfred North Whitehead) calls “the fallacy of misplaced concreteness,” treating an abstracted aspect of a thing (its essential nature) as if it were another concrete thing. This theory of Plato’s is sometimes called “Extreme Realism” because it claims that universals are “extremely real,” so to speak – just as real as individual things, in fact *more* real since they are timeless and immortal and unchangeable. A beautiful face changes with age, but beauty does not.

The theory most totally opposed to Plato’s is called Nominalism. The fourteenth century medieval philosopher William of Ockham is usually credited for inventing the theory, and modern philosophies such as Empiricism, Pragmatism, Marxism, and Positivism have embraced it and made it popular. Nominalism claims that universals are only names (*nomini*) that we use as a kind of shorthand. Instead of giving each individual tree a separate proper name, we group together, for our own convenience, under the one vague name “tree,” all those things that resemble each other in certain ways (e.g. having trunks and branches and leaves). But in reality, all trees are different, not the same; not one-in-many (“uni-versal”), but only many.

Nominalism seems logically self-contradictory, for if all trees are different, how can it be true to call them all “trees”? The very sentence that says all trees are *not* really the same presupposes that they are! If universals are only our names for individuals that resemble each other in certain ways, those “certain ways” must be *really universal* (e.g. all have trunks, branches, and leaves); so we have eliminated one universal (“tree”) only by appealing to three others (“trunk,” “branches,” and “leaves”). *Something* in trees must justify our use of a universal



term "tree." What is this? Is it their "resemblance" or "similarity"? But they must resemble each other in *something*. What could this be but their nature, their essence; their treeness, what-trees-really-are?

Aristotle, as usual, takes a middle position between these two extremes, and his view accords best with common sense. His position was developed by the Arabic philosopher Avicenna and by St. Thomas Aquinas in the Middle Ages. It is called "Moderate Realism," and it holds that essences are objectively *real* (contrary to Nominalism) but not real *things* (contrary to Extreme Realism). They are the essential "forms" or natures of things. Forms exist in the world only in individual material things, but they exist in our minds as universal concepts when our minds abstract them from things. It is the very same nature (e.g. humanness) that exists in both states; otherwise our concept of it would not be accurate, would not be a concept of *it*, of what really is in the things. A universal form such as humanness exists in the world only individually, but the same form or nature exists in the mind universally, by "abstraction" from individuals.

So according to Aristotle the Nominalist is right to say that universality is only in the mind, not in things, but wrong to say that there is nothing in reality that is the object of universal concepts. And the Extreme Realist is right to affirm that universals are objectively real and not just names, but wrong to think they are "substances." (Aristotle's technical term for concrete individual things was "substances.") They are the "forms" of substances (e.g. the treeness of trees, the humanness of humans, the beauty of beautiful things, the redness of red things). Some are *essential* forms (like "humanness") which a thing must have in order to be what it is, others are *accidental* forms (like "redness") which a thing can gain or lose and still remain what it is, as when a tomato changes from green to red.

This apparently very technical, abstract, logical dispute has great practical consequences. If universals are more real than individuals, then individuals, and human individuals too, are not *primarily* important – a convenient philosophy for totalitarians! And if individual things are less real than universals, then the senses do not reveal anything very important, and only the few "brains" who can think very abstractly are wise. On the other hand, if universals are not real at all, then we have the even more radical consequence of skepticism: reality is an unknowable chaos, and all so-called universal truths are merely subjective and man-made, including all principles of science and ethics.