

ANALOGY(ἁναλογία)—unity of relations in something composite, a fitting relation, a proportion; a similarity to something that is fundamentally different.

The word “analogy” is composed of the prefix “an-” or “ana-” [ἄν, ἁνά] which indicates a state of multiplication (e.g., “by twos”, “by threes”), and the noun “logos” [λογος] which is formed from the verb “legein” [λεγειν] which means “to put together” and also “to speak”. The etymology of the word “analogy” shows that it may designate a state of composite existence in a thing, and also the act of predicating something of many things.

In ordinary language analogy is conceived as “dissimilar similarity”. Hence we speak of analogy when we are dealing with many things that are basically different and similar only in certain aspects.

In philosophy analogy primarily concerns the way a thing exists. Secondly it concerns a way of acquiring knowledge, a way of predication, or a way of inference (called heuristic, heuristics, or the heuristic approach).

The positions opposed to analogy with respect to the existence of things are as follows: monism, the doctrine that everything is one and the same thing; variablism, the doctrine that nothing is stable or identical with itself; and isolationism, the doctrine that everything is dissimilar. The positions opposed to analogy with respect to knowledge and predication are the following: univocity, where an expression has only one designate, such as the expression “the capital city of Poland”; and equivocity, where an expression has many different designates, such as the expression “stop” since it may mean a graduated set of pipe organs, a place for waiting along a road, or a plug in a sink.

Analogy and our understanding of it are an important key in our philosophical knowledge of the world of persons and things.

THE ANALOGY OF BEING. There is a long philosophical tradition that speaks of the analogy of being (where being is understood as something that concretely exists). The analogy of being occurs in the pluralistic world in which there is more than one being. Philosophical pluralism appears in philosophical thought very early in history. As early as Anaximander of Miletus we see attempts to show the analogical structure of reality (Anaximander’s principle of “symmetry in beings”). Reality is a collection of actually existing concrete things. Reality is not a common bed or foundation from which different modifications and manifestations of the same nature arise. Really existing concrete beings are plural since each being is composed of many components or factors.

ANALOGY WITHIN BEING. When we speak of the components of being we are not thinking of the kind of composition we encounter in art or industry where the components are produced prior to the assembly of the whole. In the order of nature the whole is the reason for the parts, and the whole and the parts arise at the same when the whole is composed of the parts. There is a necessary relation and connection between the components of being and its parts, even if this connection at times is only relatively necessarily. The real relations that connect the parts into a single whole run between the parts and the whole, and between the parts themselves. There is an unimaginable number of “parts” or “components” that form a single being such as a concrete man. When we consider only those differences that are empirically perceptible and can be realized technically in the integrating parts alone, we see, for example, the human organism with its various organs, tissues, cells, molecules,

atoms, and uncountable subatomic particles, and all these parts are joined by relations among themselves to create the whole.

In philosophy we distinguish equally important compositions: substantial and accidental components, the composition of matter and form; the components of being concerning substance and accidents, which are essence and existence. All these mutually ordered parts form the one essential whole of the concrete being. This whole is joined together by relations, and this network of real and concrete relations in the existing being is generally described as the relation of potency to act, of a potency actualized by one act (in man this one act is the soul, which exists on its own). We see the network of real relations that join very different correlates such as the parts of an organism into one. In one living organism as a result of the cooperation of all its parts there are constant changes: the blood and nourishment circulate; cells die and cells are formed, the nerves receive stimuli, and molecules are in motion in all nature. All these motions occur throughout the organism and cause changes that are sometimes profound in the organism. One concrete being with countless relations appears before us. Despite all its changes, it is one, identical, and unchanging in its change as a being (or mutable in its unchanging identity). This relational identity of being alongside changes in relations we call analogy within being. Every really existing contingent being is thus analogical in itself since it is internally composed of different “parts” that stand in relation to each other and to the whole in relations that ultimately indicate the identity of being despite constant changes in its parts.

**ANALOGY AMONG BEINGS.** Being is analogical in itself and at the same time it is analogical in relation to other real beings. Together they form an analogical unity, the universe of contingent beings. This unity is based on the analogical structure (a structure joined together by relations) of every being and at the same time that of all beings related to their single reason of being. The analogical structure of being is joined together by various relations and it is the foundation for analogy among beings. We call this bond of relations among beings the world, reality, and the cosmos. As we see how beings are joined together by certain relations, we can see in the cosmos the unity of beings that exist as subjects and substances. We can perceive a unity based on a connection of relations. The unity is indicated by the relations of change in matter and the course of this change in nature, and we can perceive a unity connected by the necessary and transcendental relations present in every contingent being. Furthermore different kinds of connections among beings based on non-necessary relations come by way of addition. These are relations that come to a being that is already formed (for example, relations such as marriage, military service, and professional associations). Such relations are countless, and as a result the unity of reality is enriched by relations that arise for various reasons. This network of relations within beings and among beings is so dense that it obscures the analogical expression of the relations for certain scholars and thinkers and leads them to think in terms of unity and identity of being such as would occur in monism or monistic schools of thought (if such schools of thought had a real grasp of things).

Philosophy is primarily interested in the real necessary and transcendental relations that occur in every concrete being (although other relations are also of philosophical interest). These relations are the foundation of metaphysics and our metaphysical understanding of reality. Three types of transcendental relations that occur in every being are particularly important. These are relations associated with the following: (1) the fact of being (that being really and actually exists); (2) the intelligibility of being (the foundation in being of the rational order that man creates as he “reads” really existing being); (3) transcendental

relations that result from the connection between action and the end or good, with the result that reality is dynamic and meaningful because it is internally marked by teleology which is the real motive for a being's action.

Ad 1. In the first case we are dealing with the necessary and transcendental relation of essence to existence. This relation constitutes the being as a being and points to the first efficient cause and to causality as such. Being is that which possesses existence, since a being is constituted by essence and existence joined together as act and potency. A being's essence as its potential aspect is not prior in the being to its act of existence, but its by its nature "posterior", i.e., it is really grounded by the act, since it is entirely because of the act of existence that the real essence is created. The nature of being in the contingent being is a "drama" and "tension" in the field of being between its poles of essence and existence. Essence is the analogate in being, i.e., it is the vehicle of an analogical perfection. Existence is the analogon, which means it is the perfection that "actualizes" the subject or analogate. To be an analogate (a concrete content) and to be an analogon (an analogical perfection) are different. The analogical perfection is one by analogy. In being, this common perfection is existence. In what sense is existence the common perfection, if every existence is concrete and proportional to an essence, if it is unrepeatable just as being is unrepeatable? What constitutes the analogical unity of being as being? This analogical unity is constituted by the function of actualization or realization, the coming-to be of essence through existence in the real order. This occurs in every contingent being in its own way according to the proportion of essence to existence, according to the necessary and unrepeatable relation that constitutes the fact that "this here" being is a being. This relation occurs just as extensively as being. Each and every thing is a real being because the transcendental relation of existence to essence has come into existence, and this makes a being a real being.

Another expression of this concrete transcendental relation is the fact that it points to the Necessary and Absolute Being which is God as the single and necessary reason of being that separates the actual existence of contingent being from non-being. This means that without the Absolute as the chief analogate in this case, no contingent being would exist, in other words, without the Absolute there would be no reality to the world of contingent beings. If in its deepest nature the contingent being is composed of an essence and an existence that actualizes this essence, and if no contingent being is the reason for its own existence since the existence of a contingent being is not a consequence of its essence, then the necessary condition for the actual occurrence of composition or real actualization is a being who is exclusively existence, a being whose essence is existence. No contingent being is capable of giving to itself an existence when it is not this existence nor does it possess existence by virtue of its own nature. This does not mean that the existence of contingent beings does not have as a condition the existence of other contingent beings that have a real influence upon them and show how they are tied by relations with other beings. However, if no contingent being is capable of imparting existence to itself, then neither do all contingent beings taken together have this power. The fact that contingent beings exist, that in every contingent being there is a transcendental relation of existence to essence, is free of contradiction if the reason for existence is, and cannot be otherwise than, a Being whose essence is existence, a Being in whom there is no division into analogate and analogon, in whom there is no composition. This is the fact of efficient causality which flows out of the composition of being from essence and existence; without this composition, causality would merely be a principle of thought or a mere postulate.

Ad 2. The second type of transcendental relation is the fact that real being is intelligible, and this is an expression of the transcendental relation of being to intellect. In being we can discern some presence of intellect. (All knowledge or science is an appropriation of being's intelligibility, as being is the foundation of the rational order). This presence of intellect precludes the identity of being and intellect in the case of contingent beings, and compels us to acknowledge that being is derived from the Absolute Intellect. The intelligibility of being is derived from the Absolute intellect, and through the Absolute Intellect everything which is a being has come into existence. The derivation from intellect and the intelligible order are the the fundamental relational quality upon which other values or perfections of being are constructed. (St. Thomas' fourth way is an interpretation of these other perfections, while the first three ways are an analysis of the various relations of essence to existence).

Ad 3. The third type of transcendental relation in being is the relation of being to will or love. This relation constitutes the order of the good and teleology (the dynamism of being). Being is loveable. It is connected with the will since is the object of conation or desire. The reason for the desirability of being is in being, and it is the wealth of being that is revealed in the intelligibility of being. However, since beings are contingent (and so they are derived from another), they owe their real existence to the Absolute who wants them to exist in reality. For this reason, a being as a good and a source of desirability is necessarily and transcendently joined with a relation to the will of the Absolute. Being is good or exists as a good because it is wanted or loved into real existence. In the good's analogical mode of existence there is a transcendental relation between the being and the will of a person being—the will of the Absolute (in the case of the existence of the Good), or the will of a contingent person (in the cause of human desire and love).

The above mentioned manifestations of analogy within beings and among beings are the foundation of being's analogical unity. Those who do not understand this analogical unity tend to think in terms of monism or isolationism with regard to being. The necessary and transcendental relations that join beings into an analogical unity (the transcendental analogy of being) are the foundation of the theory of participation. The theory of participation concerns how contingent beings are connected with the Absolute by efficient, exemplar, and final causality. Through these necessary and transcendental relations the presence of the Absolute becomes apparent in beings. Besides the transcendental relations, there is a dense network of categorical relations in every being. These provide the foundation for the analogy of proportionality which indicates the analogical similarity of beings that are really different.

THE ANALOGY OF KNOWLEDGE. The analogical mode of being (analogy within being and among beings) may also be known and expressed. Human knowledge may focus upon certain features of real being while leaving others aside, and it may express these features in one clear concept—then we obtain knowledge that is conceptual, univocal, and abstract. This type of nature separates us from reality since it leaves out the real features of being. However, we can focus upon the real relations that we see between the whole and its “parts” in being, and we can focus upon the concrete relations between different beings as these are grouped in natural or artificial classes, or we can focus upon the concrete relations that run through all beings and through the whole universe of beings in which we see concrete transcendental relations. We can emphasize these concrete transcendental relations and grasp them in judgments and propositions. In this way we obtain different types of the analogy of knowledge.

This analogical knowledge is focused on the concrete—it does not abstract from anything

but rather embraces the concrete relations that run through a narrower or broader circle of beings. These relations in effect provide a more or less general and analogical knowledge. This knowledge differs from univocal knowledge in that it is more faithful to reality since it embraces concrete relations insofar as they join with themselves their correlates which are beings in a narrower or broader range. This is thus a knowledge which is concrete and general at the same time. It does not separate us from reality, unlike abstract and univocal knowledge. Abstract and univocal knowledge is more precise, but at the same time it is less real since it embraces only certain features in things and leaves aside (or abstracts from) all other features which are not of interest. The abstract and univocal type of knowledge is primarily found in the particular sciences, especially in technical sciences. The technical sciences are used to construct devices that must be planned and determined univocally.

Some authors occasionally fail to distinguish properly between analogical knowledge in the strict sense and knowledge which is only analogical in appearance while essentially it remains univocal. In the latter, analogy appears only in external structures which may be described as instances of isomorphism or homomorphism (I. Dąbbska and J. Bocheński are cases in point). In isomorphism there is an identical and frequently a numerical relation between the correlates (e.g. 2:4=3:6). In homomorphism there is a similarity, and thus a mere convergence in qualities (e.g., the wings of a bird, and the wings of a building). The relations that occur in analogy and analogical knowledge are not, and cannot be, determined and comprehended univocally since they are not separated from being with its entire concrete content.

The analogy of metaphor (μεταφορα) is the most commonly encountered form of analogical knowledge. It appears in various forms as literary tropes in literature and in the Bible. Metaphors also occur in various religious forms as gestures or behaviors.

As the word itself indicates (φερειν)—to carry; μετα—beyond), in this type of knowledge we encounter a transfer of a name which in the strict sense means one event, process or thing, to other objects to which the name does not properly belong. Why do we transfer a name to dissimilar objects? As an example, we may consider how the smile of a child, girl, or mother evokes a pleasant reaction in us. We may react with a feeling of trust, warmth, pleasure, and even joy. Other events evoke the same reaction, for example when the warm sun reappears after a cold rain and heavy clouds we may say: “the sun is smiling”, or when we win a lottery we may say that “fortune has smiled upon us”. We transfer the word “smile” to another object because of the psychological reaction it evokes in us. The psychological reaction mediates or channels our knowledge. For this reason metaphorical knowledge always plays a mediating role and is based on our common experience of nature or culture. Only someone who knows Greek mythology can understand the malicious metaphor: “Adam’s head is his Achille’s heel.”

Because of common elements in our experience of nature and culture, metaphorical analogy contributes to creativity in language and helps man to be at home in a particular time and place. The purpose of metaphorical analogy is not to increase our knowledge. Metaphor addresses psychological factors other than knowledge. For example, a metaphor may be used intentionally to evoke certain feelings and attitudes. For this reason the language of religion is so loaded with metaphors. We use metaphors when we know something that cannot be adequately expressed univocally but nevertheless must be shown and communicated to others.

The analogy of attribution is another type of indirect analogical knowledge. We may take the term “healthy” as an example. We say that a real individual named Adam is healthy, that Adam’s complexion is healthy, or that the air, a medicine, a walk, or gymnastics, are healthy. We spontaneously understand what “healthy” means in each case. We must understand the meaning of “Adam’s health” to understand the meaning of “healthy complexion”, “healthy medicine”, or “healthy stroll”. Adam’s health is the basic point of reference for understanding different statements about health. It is even usually said that the proper meaning of “healthy” is realized in principle analogate—in this case a concrete living organism such as a plant, animal, or man—and other expressions containing the term “healthy” have meaning in relation to the principle analogate. That which is healthy for Adam may cause John to be ill. The expressions “healthy medicine”, “healthy air”, and “healthy complexion” get their meaning from their connection with the principle analogate which is the health of Adam. These are minor analogates. As Averroes taught, the minor analogates are connected with the principle analogates by various causal connections: efficient cause, final cause, exemplar cause or sign. Meanwhile the formally analogical content is realized or found in a formal sense in one principal analogate in relation to which relations of efficient causality, exemplar causality, or other such relations appear.

Aristotle called the analogy of attribution  $\pi\rho\sigma\ \acute{\epsilon}\nu$  [pros hen] or  $\acute{\epsilon}\rho\ \acute{\epsilon}\nu\omicron\varsigma$  [epi’ henos] as it refers “to one”, or “from one”. The analogy of attribution was later employed in theology and philosophy to show how God and contingent beings are related. In this knowledge of being God himself is the principle analogate. All other beings would be understood only in relation to God who is the efficient cause, exemplar, and end of all beings. This understanding of being, however, is wrong. God is not a reason that mediates in our understanding of other beings as minor analogates. The process of analogical knowledge runs in the opposite direction in this case. We do not know God first and then with this knowledge learn about contingent beings. We first know contingent beings and then we know that God must exist as that which ultimately resolves apparent contradictions in them. God does not serve as a medium in our knowledge of other beings. God is made manifest indirectly through other beings. He is the point at which we aim in knowledge and not an *a priori* assumption in our knowledge of other beings.

The analogy of general proportionality is the third type of analogical knowledge of reality. In this type of analogy we perceive one pair of proportions in a being, and this becomes the medium for knowing another pair of proportions which is a connection of relations between correlates. For example, our knowledge of the relation between man’s psyche or soul and his body or organism becomes the medium for knowing the relation between the animal’s psyche and its body or organism. Certain relations between correlates or members of the same structure are arranged into analogical structures: A:B is a relation similar to C:D. In the same general scheme we can substitute either indeterminate relations or strictly determined relations which are instances of pure isomorphism or homomorphism. Indeterminate relations form the domain of the analogy of proportionality. The analogy of general proportionality is a way of grasping the necessary relations that constitute things and which produce analogical unity among things. In concrete knowledge we understand things better when we arrange them into connected correlates: the man John is related to his soul as the animal *X* is related to its soul, or the plant *Y* is related to its soul; where the term “soul” is understood analogically, since the soul is connected to the body by the relation of that which organizes to that which is organized, although the actual organization is different in each case.

The analogy of transcendental proportionality is the fourth type of analogical knowledge of reality. It is the most important type of analogy in metaphysics and is the key to the philosophical understanding of reality as a whole.

Thus there is an analogy of knowledge that comprehends transcendental ontological relations that concern each contingent being and are realized in each contingent being. These relations can be reduced to three major type: the relation of essence to existence; the relation of existing being to the intellect (which applies to the person of the Absolute as creator, and to contingent beings who are persons, when they creatively produce something); the relation of really existing and contingent being to appetite in the broad sense, and in a strict sense the relation of really existing and intelligible being to the will of the Absolute in the case of being as good, and to the will of person of a contingent being in the case of this being's action. We may also speak of the particularization of these relations according to various orders of external causation. We spontaneously comprehend transcendental relations in our cognition when we call something we know a "being", "one", "something", "true", and "good". This spontaneous comprehension is obviously a superficial and approximate understanding of being and transcendentals. As an analogical understanding it is expressed in a schema: John and his existence are related as this animal or this plant is to its existence. John as existing according to his own measure or nature is a being, and the horse and plant are likewise beings. Something is a being if it exists in itself in proportion to its nature. On account of the act of existence fitted to a concrete content or essence, we call something a reality or a being. We call an existing being such as John true, as this being bears a relation to the intellect, and we call the same being good as it is related to the will.

In the analogical understanding of being these perfections accumulate, as it were, successively as "being", "thing", "one", "something", "good", "truth", and "beauty". A necessary transcendental relation appears in each case. Without this relation there would be no being (if there were no relation of existence to essence), or truth (if there were no new relation to an intellect), and the same applies to the others. The concretely existing subjects of an analogical perfection (John, a dog, or a tree) are always basically different as their concrete contents are different. The subjects of the analogical relation are called analogates and are not considered without regard to relations. They are considered with respect to the transcendental relation embedded in them. This transcendental relation is the "analogical perfection" that we call the "analogon". In being this analogon is the act of existence. In truth the analogon is the relation to an intellect. In the case of the good the analogon is the relation to a will. The analogon as a relative perfection joins objects into a unity of relations: in each case the necessary transcendental relation of analogate to analogon occurs. When we comprehend this relation in cognition, and this relation internally constitutes the being-ness of being, we see that it is present in all instances of being. The presence of this relation is expressed in the actualization or realization of essence by existence. The fact that the analogon in each case actualizes or realizes the analogate, or that the necessary transcendental relation occurs between the analogate and the analogon, is a fundamental factor in transcendental analogy. This can be expressed in a schema of potency and act in which the mode of actualization is not measurable and thereby is unknowable (an animal is a being in one way, and a man is a being in another way). Yet the transcendental relation actually occurs if something is a really existing being, if something is intelligible, or if something is loveable. The moment of actualization, or the actual occurrence of the transcendental relation, is decisive in the formation of our analogical understanding of being, truth, and good.

Besides the actual occurrence of the analogical relation, the relation is also differentiated by the gradation, intensification, and hierarchic arrangement of the analogical perfection in the analogates. We see greater and lesser richness of being, more less intense and rich intelligibility with respect to truth and loveability with respect to good. When we consider that the analogon and the analogate are not identical, that the relation actually occurs, or that it occurs in degrees, we see that we must affirm that the Absolute exists as the “necessary and ultimate reason of being” for this state of affairs. The Absolute can account for this state of affairs without involving any contradiction. The Absolute ultimately divides non-being from being in contingent existence. An analogical understanding of being must refer to the ultimate reason of being—the Absolute. The Absolute is incomposite or simple in himself. This simplicity is not a poverty of being but the fullness of being. All our imperfect knowledge of this fullness by way of an analogical understanding of being is an analogical knowledge of the Absolute from contingent beings. We can communicate our analogical knowledge but not in the form of univocal concepts. We communicate this knowledge in a complex message in the form of a judgment in which an analogy of predication occurs.

ANALOGY OF PREDICATION. Analogy as a mode of predication was used in ancient times. It appeared as a type of intermediate knowledge between univocity and equivocity. If propositional predicates in an univocal predication have one determined or univocal content or meaning, then analogical predicates, even when names such as “good”, “healthy”, “being”, or “smile” have univocal meanings, have a basically different meaning in each case of predication and such a name remains the same only in certain respects. Equivocal predicates have the same name in completely different meanings. For example, we may speak of a star either in reference to a luminous celestial body or in reference to a cinematic actor. In predication, analogy is closer to equivocity and so some authors called it intentional equivocity—*aequivoca a consilio*. Many grammarians and logicians tried to reduce analogy to a type of equivocity. They thought that the vagueness of analogical meaning invalidates analogical knowledge. However, this did not eliminate the problem of analogical knowledge and predication. Moreover, a more careful analysis of natural language shows that analogy is a natural mode of knowledge and predication, while univocity is more a consequence of the “art” of thinking and is restricted to certain specialized sciences, especially those that rely heavily on mathematics.

Analogy of predication takes two forms: (1) the analogical character of propositional predicates; (2) the analogical character of the function of predication.

Ad 1. Our everyday language is basically analogical, for it is connected with really existing being. When a mother says to her son; “Go and give the cow something to eat”, the expression “cow”, although univocal in itself, is understood analogically when attributed to a definite real individual cow. We also often encounter a clearly analogical structure in some predicates. When we consider predicates such as “sad”, “healthy”, “alive”, or “good”, we see metaphorical analogy, analogy of attribution, analogy of proportionality, and transcendental analogy, as a characteristic modes of knowledge. The analogical meaning of predicates appears basically when they are used precisely as predicates in a proposition. When medieval and Renaissance scholastics wrote treatises “*de nominum analogia*” (on the analogy of names), the analogical meaning of a name appeared when the names (*nomina*) were used as predicates in propositions. Thus the language of everyday life and the language of philosophy are basically analogical because they concern concretely existing being. The only way to make this language precise is to be aware of the analogical character of language and the character of analogies that are used in language. It is a mistake to change

analogical names into univocal names.

Ad 2. The second factor that produces an analogical type of predication is the function of the propositional “is”. In Indo-European languages a sentence is composed of a subject and a predicate joined by the propositional “is”. This “is” is the “soul” of the judgment and constitutes the character of judgmental knowledge. In non-Indo-European languages the function of the propositional “is” may be performed by prefixes and suffices, for example in ancient Hebrew, Turkish, and certain Indian languages.

In the structure of a judgment in our everyday language the verb “is” has three functions: (1) cohesive; (2) assertive; (3) affirmative. All three, but especially the last two, connect our knowledge with being.

Ad 1. The cohesive “is”, the first function of the propositional “is”, connects the predicate of a proposition with its subject. This is a superficial function of language and is joined with the syntactical aspect. Aristotle focused upon this aspect. He conceived of judgment as the “composition and division” of speech or statements. The cohesive function of “is” that joins a subject with a predicate in a proposition forms a statement that is not only informative but sometimes paradoxical or humorous for it does not yet refer to reality, that is, it does not possess the feature of truth but produces merely a syntactically correct statement. When we indicate the cohesive function of “is” in a proposition, this does not mean that there are statements that use this function exclusively in our everyday and scientific language. The next function, the assertive function, normally occurs with the cohesive function. It would be artificial to separate these connected functions. We should distinguish them without separating them.

Ad 2. “Is” also appears in the assertive function where it expresses the relation of the person who is speaking the proposition to reality. A new reference appears here, the reference of the whole of the proposition to reality in some sense. I may speak of basic reality (the world of existing concrete things) in which I live. I may also speak of a literary “reality”, a theatrical “reality”, or any scientific field, since I then possess some way to verify that my statement agrees with some reality, however I understand that reality. As a result the judgment I pronounce, whether true and in agreement, or false and in disagreement, is my personal truth or my personal falsehood as the one who makes the statement. Of course, this does not mean that there are no shared or common truths, but these do not dispense me of responsibility for what I say.

Ad 3. The basic function of “is” in which we affirm the act of existence is the affirmative function. It is the most powerful of all the functions. It is normally implicit in predicative judgments. It appears clearly and explicitly in existential judgments in which we affirm the actual existence of a concrete thing as a reality from which by different forms of abstraction we construct scientific, literary, and mathematical “realities”. The “realities” are a reworking by abstraction and definition of reality as it is originally given to us.

When we consider human cognition which is expressed as truth in judgmental cognition and in interpersonal communication, we affirm that it is analogical since the same predicates in their function of predication may be fundamentally analogical. They are analogical in their conceptual and cognitive structure. This structure is related to analogical being, namely to the entirety of pluralistic and analogical reality which is legible in view of its internal

intelligibility.

ANALOGY OF INFERENCE (HEURESIS). Inference based on analogy is used in the sciences to discover new laws and truths. Just as different types of analogy help in interpersonal communication at the stage of prescientific knowledge, so in the sciences analogy plays a role in exploratory or heuristic thinking. When we use analogy in inference we suppose that in some different states unknown to us there may be relations and correlates similar to those we know in familiar states. Inference by analogy helped in the discovery of many important laws of nature throughout the history of science. In this type of reasoning, the intuition of the researcher has a more important role than his use of deductive thought. There were and are attempts to systematize inference by analogy. W. Biegański attempted such a systematization. Because of the structure of analogy, inference by analogy is not infallible, but it is necessary for the advancement of science and for human survival.

Aristotle presented the paradigm or the use of a typical example as a kind of inference by analogy. The field of paradigmatic thought is very uneven, and paradigmatic thinking is by nature fallible, but it is necessary because it is exploratory and lively, sometimes even life-giving. The methodology of the particular sciences, the psychology of creativity, and the history of science study different forms of inference by analogy.

Analogy itself is analogical. A general understanding of analogy allows us to understand the plurality of being and shows us that a being must exist who is the ultimate reason for pluralistic reality. This reason is ultimately the Absolute, a being free of all the relations we encounter in contingent beings.

ANALOGY—HISTORICAL ASPECTS. The way different thinkers present their understanding of analogy depends on their understanding of being. The classical philosophy of being presents analogy in one way, while the subjectivistic schools present it in another. In the latter schools the object of analysis is a system of ideas or concepts (a semiotic system). Analogy appears in yet another way in the semiotic system of a language. For this reason how different authors understand the problem of analogy cannot be separated from how they generally understand the object of philosophical thought. A closer study of these various formulations should consider the object, method, and use of the particular language in which various syntactic, semantic, and pragmatic relations are expressed. Object, method, and language intersect and indicate how the problem of analogy is understood in each case—in the field of real being, in the field of forms of cognition, the application of these forms of cognition in predication, and in the field of conceptual heuristics, that is, a particular form of inference—both in prescientific knowledge and in various scientific fields.

Plato was the first to use a philosophical understanding of analogy in the *Timaeus* and the *Republic*. He used the concept of analogy: (a) to signify the relations among different kinds of knowledge and spheres of reality; (b) to signify a similarity in the functions performed by two things.

In his description of the Highest Good, Plato does not directly define the good but uses an analogy: what the good is in the world of thought and objects of thought, the sun is in the visible world in relation to vision and its objects. The sun is the source of light, and the good is the source of truth and knowledge. The sun is not the same as light, and the good is not the same as truth and knowledge. Both the sun and the good are superior to their effects. The analogy of the world and the good refers to the sun as the cause of the appearance of

individual things and our knowledge (δοξα [doxa]) of them, and it refers to the good as the cause of intelligible beings and our knowledge (επιστημη [episteme]) of them. This analogy emphasizes a similarity of relations between the forms of things and the forms of knowledge. This line of reasoning became the basis for a theory of analogical cognition of God, since the conception of the good as a source that produces effects in some respects similar to itself and in some respects different found expression in the neo-Platonic theory of emanation and in the conception of God and creation that comes from God. Aristotle uses the term analogy in many works, including the *Posterior Analytics*, *Nicomachean Ethics*, *Metaphysics*, *Politics*, *Physics*, and *Protagoras*. He uses the term analogy to describe connections of being and knowledge. He also uses analogy to make systematizations in the field of being and knowledge.

Aristotle distinguishes several types of analogy: analogy of being (παρά γένος [para genos]), analogy of attribution (προς ἕν [pros hen] and εφ' ἑνός [epi henos]), analogy of mathematical proportionality (isomorphism), and to a certain degree metaphorical analogy

Analogy of being occurs among beings subject to analogical and homonymous predication. One condition for analogy *para genos* is that a common basis must exist for comparing beings that are numerically and substantially different, for example, concrete things subject to univocal predication and analogical in being (man and concrete men). The basic type of analogy indicated by Aristotle is analogy of composite relations, namely analogy of proportionality. This analogy is derived from mathematical proportions and is essentially isomorphism or in certain cases metaphor. The analogy of attribution (εφ' ἑνός [epi henos] or προς ἕν [pros hen]) in which a substance is the principle analogate and the minor analogates refer to the substance in being and understanding. Analogical unity is more general than specific and generic unity and therefore it is an expression of the unity of reality.

Epicurus associates analogy with induction, and we consciously form concepts with induction. Analogy comprehends the order of contingent elements as a unity. Analogy is a way to grasp a generality that forms a unity, and so Epicurus accents the analogy of knowledge.

Plotinus in the third *Ennead* considers the question of providence. He examines the problem of foreseeing future things on the basis of analogy. There are no completely isolated things in the world, but there is a law of similarity whereby when we see one thing we can speak of another thing we do not perceive but which already exists or will exist in the future, since all things are comprehended by analogy.

Porphyry conceives analogy not as a way things exist but as a mode of predication and so as a relation of knowledge to reality. He locates this version of analogy in the field of equivocation. It is not accidental or strict equivocation, but “equivocation by design”.

Averroes in his commentary on Book IV of Aristotle's *Metaphysics* provides a more precise treatment of analogy *ab uno* and *ad unum*. He establishes a connection between the principal analogate in the analogy of attribution and its minor analogates according to the conception of the four causes: efficient cause and effect, final cause and means, subject and properties, form and signs modeled after the form.

Thomas Aquinas referred to the conception of the analogy of predication as intermediate between univocity where a common name and a common meaning occur in predication, and equivocity, where different meanings occur along with one common name. In analogy, there is a common name and a meaning that is basically different and only in certain proportions the same (*De principiis naturae*).

Already in the *Commentary on the Sentences* (I, d. 19, q. 5, a. 2, ad 1) he notes the analogical character of analogy itself. Analogy may be *secundum intentionem* as in various forms of analogical predication, *secundum esse* as different forms of analogical being, or *secundum intentionem et secundum esse* as different forms of the analogy of proportionality. In the framework of these three domains of analogy we can find in the writings of Thomas more particular descriptions of different domains of analogy.

John Duns Scotus in his logical writings (*Quaestiones in libros praedicamentorum*, q. 4; *Quaestiones in libros Elenchorum*, q. 15 and 16) presents the analogy of predication as an intermediate between univocity and equivocity, but he emphasizes the moments of “primary” and “secondary”. He regards the analogy of proportionality as a form of equivocity. In his later works (*Opus Oxoniense* and *Reportata Parisiensia*) he sees in analogy something that threatens the unity of metaphysical knowledge. Analogy does not provide an univocal concept that comprehends a thing’s essence. Analogy produces a concept that contains different meanings and speaks of one element by way of others. Thereby it destroys the unity of concepts and consequently destroys the unity of knowledge. It destroys metaphysics as a science. In the Scotistic conception of being as defined by a concept, there is no place of analogy: analogy is a source of equivocation and this destroys all knowledge.

F. Suarez was influenced by St. Thomas, Duns Scotus, and Cajetan (*De nominum analogia*). Suarez accented the analogy of attribution as fundamental for understanding analogy. He thought of the analogy of attribution as “purely external” (*pura seu formalis*) where the content is verified in the primary analogate; and as the “virtual” analogy of attribution, namely a mixed form of analogy, where the analogical contents are shared by the minor analogates (*Disputationes metaphysicae*, disp. 28, sect. 3). Only the second type of analogy can become an instrument of knowledge, especially in metaphysics.

According to Suarez, the analogy of proportionality contains metaphor and so is not very useful in philosophy. The influence of Suarez upon later scholastics was so strong that they tended to repeat Suarez’ formulations without bringing anything new to the understanding of analogy.

The problem of analogy as conceived in the spirit of classical philosophy was basically not an object of analysis for modern non-scholastic authors. In his *Critique of Pure Reason*, Kant mentions three uses of analogy: in mathematics, philosophy, and logic. In mathematics quantitative proportions supply definite knowledge. In philosophy analogy requires four members of proportions: in the use of three known members and a fourth unknown member, there is an ordering to that fourth member that enables us to know it. In logic analogy appears in three aspects: as a way of drawing conclusions by induction; as a way of systematizing concepts with respect to their similarity; and as an instrument in forming concepts.

J. S. Mill uses the term “analogy” in three senses: (a) as a way of using a name in the middle between univocity and equivocality; (b) as a kind of relation of similarity between two relations; (c) as a special type of reasoning.

F. Brentano was well-versed in Aristotelian and scholastic philosophy. He regarded analogy in predication as a variety of equivocal names as of a proportion or similarity of relations which include facts from the philosophical and psychological domains. In this case analogy is an inference based on proportions and leads to a probable conclusion or verisimilitude. Brentano borrowed from the scholastics the name and general construction of analogy. Under the influence of Hume he emphasized similarity as an essential element of analogy. He borrowed from Mill the element of hypothesis. When he assigned only probable value to the conclusion he was influenced by both British empiricists.

In the twentieth century the problem of analogy in philosophy and theology became popular. It was discussed and elaborated by many eminent thinkers, mainly in neo-scholastic and Thomistic schools of philosophy.

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Mieczysław A. Krapiec