

Considerations on the Pact of Unity

The Viewpoint of Mathematics

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There has been a perennial return in the history of thought to the dialectic of the one and the many, and so the foundations of mathematics as developed through time could not but reflect this same dilemma. This article, as its point of departure, looks at the meaning of “one” in a few authors of Ancient and Scholastic thought. Then the author turns to the unique event of the Pact of unity between Chiara Lubich and Iginio Giordani. She goes on from there to examine the abstract pattern of “oneness” which emerges, utilizing some of the categories offered by modern mathematics, from set theory to mereology. The One resulting from the Pact turns out to be a concept that has a rational underpinning, since the conceptual instruments for its formal description can be found in the foundations of mathematics. On the other hand, the

author argues that familiarity with the structure of the One resulting from the Pact can be a significant factor in the development of a promising new axiomatic framework.

Introduction

The pact of unity between Chiara Lubich and Iginio Giordani marked the start of a luminous period in the history of the Work of Mary. It was a unique event, rich in theological and anthropological contents, with some very interesting repercussions also in humanistic disciplines, from psychology to sociology.¹ However, mathematics, by its very nature, requires putting aside any personal or contingent considerations. Its object is pure form, an abstract pattern of relationship. It considers and examines the formal properties of a system, apart from any particular content. Thus with respect to the “event of the Pact,” which other disciplines can treat more directly, mathematics can offer only a sort of phenomenology reduced to bare bones, approaching perhaps what Husserl meant by the term “formal ontology.” Thus our attempt will be to discern whether there are conceptual instruments in mathematics suitable for grasping and describing the qualitative leap which emerges in the event/Pact, capable of distinguishing the difference between the pattern of unity, i.e. the “oneness,”

1. Cf. the new book of the Abbà School: Maria C. Atzori, Vera Araujo, and Hubertus Blaumeiser, eds., *Il Patto del '49 nell'esperienza di Chiara Lubich: Percorsi interdisciplinari* (Rome: Città Nuova, 2012). The present article was developed in a joint project with the authors of this book, where the original texts of Chiara Lubich regarding the Pact of '49 can be found in a complete form, as well as studies from the point of view of various disciplines. Hereafter referred to as P.

manifested before the Pact and after. We shall not attempt to answer the question “Why?”²

To avoid any misunderstanding it will be well from the start to stress that the “Oneness” which is the main object of our study, i.e., the “One” which is the result of the Pact, does not refer to the “number one” which precedes two and three, the “generator” so to say of the sequence of “natural numbers.”³ Rather the term One here refers to a specific pattern of relationality, which although not a number is a legitimate object of mathematical study in the sense explained above, in that it represents an abstract pattern.

Our thoughts will be grouped into three areas. In the first, we will present brief quotations of three authors of Ancient and Scholastic thought who although not mathematicians, provide useful insights for our subsequent analysis of the concept “one.” In the second part, we will highlight some elements from the texts of Chiara Lubich that are relevant to our topic. In the third, we will present some categories and instruments offered by contemporary mathematics, in an attempt to discern whether they can be useful for our purpose.

Of course, any adequate passage back and forth from the language of mystical experience to that of mathematics would require a level of epistemological reflection and detailed mediation which are beyond the scope of this article.⁴ We will remain on a basically

intuitive level, utilizing a few metaphors which can be found both in mystical experience and in mathematics. With no pretext of providing an exhaustive account, we hope to offer a glimpse that could open possible vistas for further deepening and new paths for research.

1. The Meaning of “one” in Ancient and Scholastic Thought

From ancient times, the concept of “oneness,” as related to mathematical properties, has also been considered from the viewpoint of philosophy and theology. Atom or not atom? Points or a continuum? The philosophers of ancient Greece debated on these topics, under various guises, from Democritean atomism to Parmenidian monism. Basically the same question lies at the heart of the distinction between arithmetic (the science of numbers) and geometry (the science of measure). Are they two parallel paths or can one be built up from the other? If so which comes first? Even before mathematical philosophy came into being as an academic discipline, we can find reflections centered on these questions dotting the philosophical/theological thought which underlies Western culture. I shall mention a few of these by way of introduction to our theme.

1.1 “oneness” and the One in Plato

From a text of Aristotle, we know that those who went to listen to Plato’s talks were astonished to find that he would begin by talking about “mathematical objects, numbers, geometry and astronomy,” and end up speaking about the ultimate supreme Good which is

e paradigma trinitario: Alla ricerca di un linguaggio base per esprimere uno specifico pattern di relazionalità dinamica,” *Sophia 2* (2012): 177–195.

2. For a theological commentary, see: Stefan Tobler, “Il significato del patto per il pensare teologico,” in P, pp. 139–151; and Brendan Leahy, “Il Patto e la chiesa: Considerazione ecclesiologiche in chiave storia,” in P, pp. 59–80.

3. “One” is the “generator” of the number system for Pythagoras as well as, in modern times, for Giuseppe Peano, in whose system *Arithmetices Principia* the central axiom is “1 is a number.”

4. For a more rigorous approach with the proposal of a specific formal language as an instrument of mediation, see: Judith Povilus and Lidia Obojska, “Ontologie formali

the One.⁵ One could ask what is the meaning of this ultimate One to which he refers. Certainly it is not intended merely in the numerical sense, since he already included that in the premises concerning “mathematical objects.” The meaning of this “One” is of a more metaphysical nature. We could imagine it emerging from his personal experience, perhaps a mystical experience of the Master, since he refers to this “One” as the greatest Good and happiness. In the *Phaedo*, reflecting on the cause of the distinction between one and two, between one and many, Plato states that which would be one has to participate in “Unity,” in the Idea of the One, just as that which would be two has to participate in “Duality.”⁶

This expression used by Plato gives us to understand that the one and the two that are at the basis of the science of numbers derive from a primitive reality which precedes every subsequent conceptual distinction of a scientific nature. One and many (the One and Duality) are two co-essential concepts each of which has meaning only in relation to the other, as illustrated in the complex context of Plato’s “Unwritten Doctrines.”⁷

In modern times, along the same line of Plato’s thought mentioned above, we find the Dutch mathematician L. E. J. Brouwer, founder of the mathematical school called “intuitionism,” states that all mathematics develops out of a single fundamental *a priori* intuition: “pure two-oneness.” In his words, this basic intuition “is at the origin not only of the numbers one and two, but also of all the finite ordinal numbers, since one of the elements of the

two-oneness can again be thought of as a two-oneness, and this same process can be repeated indefinitely.”⁸ We can note, however, that in beginning from the pattern “two-oneness” (without any consideration of dynamic relationality) Brouwer remains in a mathematics of the discrete. For this reason he does not accept in his mathematical system anything beyond the natural numbers and refuses any reasoning based on the continuum.

1.2 Reference to “one” and “One” in Thomas Aquinas and Bonaventure

With the revelation of God’s nature as being One and Triune, and with the subsequent doctrinal development engrafted on Greek metaphysical categories, a further distinction is made between “one” considered as a number, generator of all the numbers, and One as the supreme Good.

Thomas Aquinas, for example, stressed that the oneness of God is not a mathematical oneness, just as the “number” of the divine Persons of the Trinity is not a number in the mathematical sense. For this reason, he says, Pythagoras and Plato were in error, not distinguishing between: “‘One’ which is convertible with being” and “‘one,’ which is the principle of number.”⁹ “‘One’ which is convertible with being is a metaphysical entity and does not depend on matter in its being.”¹⁰

Bonaventure, on the other hand, is more in the line of Plato and Augustine. Meditating on the distinction between “one” and “One” he reaches the conclusion:

5. Aristotle, *Harm. Elem.*, II, 39–40; We can note that Aristotle often quotes Plato’s “On the Good,” which probably contains the heart of his teaching.

6. Plato, *Phaedo*, 100a–101d.

7. For further analysis, see: Heinrich J. Rickert, *L’uno, l’unità e il numero uno: Osservazioni sulla logica del concetto di numero* (Milan: Ed. Cusl, 2008), pp. 52–62.

8. Quoted in Edwardo Boncinelli and Umberto Bottazzini, *La serva padrona: Fascino e potere della matematica* (Milan: Raffaello Cortina, 2000), p. 76.

9. *Summa Teologica*, I, Q. 11, A. 1, rep. 1.

10. *Ibid.*, I, Q. 11, A. 3, rep. 2, 39.

If anywhere it be said that a number of ideas can be found in God, this goes far from the proper sense of number, as in the case of the number of the divine Persons, which is not comprised of multiple discrete units, but rather by the repetition of one and the same unit in the diverse *hypostasi*.¹¹

This passage would appear to describe quite well one of the characteristic elements of the pattern of the Pact which is the object of our study (see point 2.3 below). However it needs to be integrated with another profound intuition of Aquinas: “The supreme unity and simplicity of God exclude every kind of plurality of absolute things, but not plurality of relations.”¹² We will return to this important affirmation later (see point 2.2 below).

2. The “One” which is a Result of the Pact as Described in the Notes of Chiara Lubich

The “One” that is a result of the Pact of unity of 1949, as we said before, represents a qualitative leap beyond the life of unity experienced by Chiara Lubich and the group around her in the years preceding that event. The Pact introduces them into a new dimension in which the “One,” that does not preclude multiplicity, (logically) precedes the various individuals, the distinct “onenesses,” rather than resulting from them. As it were, the “normal” way of considering things is turned upside down, beginning from the “One” and moving toward the many included in the “One.” Although other studies have already considered some of the characteristics of the new condition of “Oneness” to which we refer,¹³ it will be useful

11. *De Sc. Chr.*, III, *ad. ob.* 8.

12. *Summa Teologica*, I, Q. 30, A. 1, rep. 3.

13. Cf. P.

to mention some of these briefly in view of the formal analysis we wish to make of the abstract pattern that appears.

2.1 From Many Rays to a Single Point

The metaphor of the “point” sheds light on the difference between “before” and “after” the Pact. Before the Pact “a multiplicity of rays of the sun” of God’s will could be distinguished, “varied for each individual and yet one as the substance of the sun is one” (38–40).¹⁴ Afterwards there is a new situation, metaphorically described as being “in the point where two rays [that of Chiara and that of Igino Giordani] converge.” “It is the point where creation vanishes in that which is Uncreated, where nothingness is lost in the Bosom of the Father. . . .” (42). Some recent studies on the formal ontology of boundaries highlight profound issues connected with this concept.¹⁵ They make it clear that every qualitative distinction demands a boundary or border, that in the mathematical language of the metaphor used by Lubich corresponds to a point. It is the point of conjunction which marks the distinction between before and after, between within and without. Chiara describes this point as being the border between heaven and earth, between creation and that which is Uncreated. It is the same image she uses to describe Jesus forsaken: “[T]hat Nothingness in which the rays of the Sun flow together.” In making the Pact of unity, Chiara and Igino relinquish, as it were, any specific personal trait in order to live the mystery of Jesus forsaken and let the Eucharist, Christ in

14. The numbering here and hereafter refer to the text of Chiara Lubich as found in P.

15. Cf. Berry Smith and Achille C. Varzi, “The Formal Ontology of Boundaries,” *Electronic Journal of Analytic Philosophy* 5 (1997); Roberto Casati and Achille C. Varzi, *Parts and Places: The Structure of Spatial Representations* (Cambridge: MIT Press, 1999), pp. 71–97.

the Eucharist, be the bond which joins them. In so doing, they find themselves in the common focal point (Jesus forsaken = Christ) that binds two qualitatively diverse realities in one. In another passage she writes: “[W]hat remains when two or more souls are combined? Jesus—‘the One.’”¹⁶ Thus, they “find themselves” there on the border, no longer outside on distinct rays approaching ever closer and closer to the Sun, but “One,” in a single point that is both “within and without.”

2.2 A “one that is more one”

The “One” which results from the Pact is not static and monolithic, but rather includes a dynamic wealth of relations. It is precisely for this reason that the quality of “being one” can constantly increase, quite differently from what is normally said of an individual entity. Lubich compares Jesus forsaken to a divine Atom which splits: “the One which is divided,” but at the same time to a nothing/all in which, underlying the many, one can discover the Trinity, “an open door to the Trinity.”¹⁷

It is precisely in the light of this “One” that is non-monolithic, but substantiated with relation (cf. Thomas Aquinas above) that it becomes possible to speak of a “one that is more one.”¹⁸ This is

true because one relation does not exclude the others, but rather opens toward them. The dynamic reality of a “one that is more one” grows beyond measure and is ever more strengthened from within, thanks to this multiplicity of interrelations. Welcoming our brother or sister within ourselves, into our personal “Heaven,” we enter the dynamic process of “going from one Heaven up to the next,” and experience “a one that is more one, a new simplicity, a new purity, a new love.”¹⁹

2.3 The Whole in Every Part

The new reality of “Oneness” experienced through the Pact presents a pattern, a configuration, in which the whole is present in every part.²⁰ “The One coincides with many” as in the Mystical Body where “each member is Christ and all together are Christ.”²¹ If we further analyze this pattern in its dynamic richness, we see

19. “In Paradise, the further in one goes, the more Unity and Distinction are accentuated. Today we are all Jesus, therefore much more one than yesterday,” C. Lubich quoted in Umberto Blaumeiser, “All’infinito verso la disunità: Considerazioni sull’inferno alla luce del pensiero di Chiara Lubich,” *Nuova Umanità* 19 (1997): 567.

20. Some holistic effects observable in the physical universe, for example the hologram, or the various applications of fractal geometry, evoke, although in an incomplete way, this pattern of “the whole in every part.” John Polkinghorne evidences the inherent relationality of the universe which is emerging from some recent discoveries of modern physics and comments: “The language of science and the language of theology are not connected by bonds of logical necessity, but by an alogical relation of consonance, a degree of conceptual congruity that makes it mutually illuminating to consider together science’s picture of the relational nature of the physical world and the theological belief in the Trinitarian nature of God.” *The Trinity and an Entangled World: Relationality in Physical Science and Theology*, ed. John Polkinghorne (Cambridge: William B. Eerdmans Publishing Company, 2010), p. 12.

21. Chiara Lubich, in Judith Povilus, “Il ‘mistero’ del continuum nella matematica e al di là dei suoi confini,” *Nuova Umanità* 22 (2000): 621. “When [Jesus] is among us we are ONE and we are THREE, each of which equal to the one.” C. Lubich, “Vita Trinitaria,” *Nuova Umanità* 24 (2002): 136.

16. Quoted in Judith Povilus, *Gesù in mezzo nel pensiero di Chiara Lubich* (Rome: Città Nuova, 1981), p. 67. The term “combine” evokes the metaphor from chemistry also used in the preceding sentence: “we are not called to form a ‘mixture,’ but a ‘combination.’” The date of this quote (12/2/1946) reveals how the concept of One, experienced in the Pact, was already alive in the mind of Lubich in the years before.

17. Lubich, cit. in Lidia. Obojska and Judith Povilus, “From the Total Gift of Self to a New Relational View of Reality: From a Mystical Insight to the Foundations of Mathematics: A Transdisciplinary Approach,” *Metanexus*, electronic edition, 2009.

18. Not in the sense of a sum (1 + 1); in the original Italian there could be confusion on this, but in a qualitative sense of an entity (“one”) becoming “more one” in itself.

that every reality is in every other, and at the same time each contains all the others in itself.

2.4 Being Fused into One

Lastly, we can note Lubich's repeated use of expressions such as being "fused together in one" in conjunction with the metaphor of fire, and being "consumed into one," (cf. Jn 17: 22–23) to describe the event of the Pact. Love "is a fire that co-penetrates hearts in a perfect fusion";²² "in the fire of the Trinity we were . . . fused into one" (36). "And we were no longer the two of us, but He in us. He was the divine fire that consumed our two very different souls into a third: his own, all Fire. And so we were One and Three."²³ In what follows we will see that the technical term "fusion," used in mereology to define a certain kind of union of parts, does not suffice to express what is signified in this case.

3. Interpretations of "one" in the Light of Modern Mathematics

Setting aside considerations of a geometric and algebraic nature in order to go back to the epistemological foundations of the science of numbers, we can sum up the principal interpretations of "one" in modern mathematics as follows:

- 3.1 One which generates multiplicity.
- 3.2 One according to Cantor's set theoretical view: a "many" thought of as a one.
- 3.3 One in the view of mereology: a one made up of many parts.

22. Chiara Lubich, *Una via nuova: La spiritualità dell'unità* (Rome: Città Nuova, 2007), p. 39.

23. Chiara Lubich, P, p. 23.

3.1 The most obvious interpretation of one is the numerical interpretation, the "atomic" sense mentioned above. If we take as our point of departure the axioms of Peano's system,²⁴ where we read "one is a number" and "for every number n , $n + 1$ is a number," with appropriate precautions regarding the identity relation, we generate the number system commonly used to count distinct items. Thus Peano does not define one, but takes it as an axiom and point of departure to define the natural numbers. The "one" of Peano's axiomatic system does not correspond to the "One" which results from the Pact, but rather to the "one which is the principle of number" to which Aquinas referred, generalized in this case to exclude any reference to material things.

3.2 As it is well known, Georg Cantor gave an important contribution to the foundations of mathematics with his set theory, in which he defines a "set" (*Menge*) as: "any multitude that can be thought of as a one." In a pertinent note, Cantor makes explicit mention of Plato, although it is not clear how he wants to relate this to the set as defined by him:

By multiplicity or set in general I mean every Many that can be thought of as a One, or any class composed of determinate elements that can be united in a whole by a law. I believe this defines something close to the eidos or idea of Plato, or what this same author in *Philebus on the Supreme Good* calls mikton.²⁵

24. Giuseppe Peano, Italian mathematician and logician gave the axiomatic definition of the natural numbers which bears his name and which is considered fundamental still today.

25. Georg Cantor, *La formazione della teoria degli insiemi: Scritti 1872–1899* (Florence: Sansoni Editore, 1992), p. 127.

The sets of Cantor are therefore by definition classes “composed” of determinate elements which can be thought of as atoms, distinct from one another. The elements “precede” (logically) the set and can constitute a “one” “by definition” (a mechanical or mental grouping) or “by substance” (extension of a single predicate). The second interpretation taken *sine glossa*, which is perhaps that which Cantor alludes to in his mention of Plato, led ultimately to the famed paradox of Russell thus revealing an inherent weakness in Cantor’s system, which is known today as *naïve* set theory.²⁶

Coming back to our central theme, the theory of sets proposed by Cantor as a foundation of mathematics seems apt for describing the structure or pattern of the situation before the Pact, where “Chiara-Jesus, Grazia-Jesus, Giosi-Jesus, etc.” were, as it were, “a multiplicity of distinct rays,” “varying for each individual and yet one, as the substance of the sun is one.” Cantor’s proposal, however, appears inadequate if we wish to express “Oneness” as it is described after the Pact. In fact, “many thought of as one” represents a gnoseological/static “one” rather than an ontological/dynamic “one,” as paragraphs 2.2 and 2.3 would seem to demand.

Before going on to the final point, I would like to indicate another interesting definition of one as a number which derives from Cantor’s set theory. This definition is attributed to the mathematician John von Neumann. It starts from the empty set \emptyset (that is, the set which contains no member) and goes on to define all the numbers. The number “one” is defined as the set which contains the empty set as its sole member: $\{\emptyset\}$. Some authors would see this definition as alluding to the fact that everything can be

26. As is well known, to avoid the paradox, Cantor’s set theory had to be adjusted. It was transformed into the axiomatic and less appealing system of Zermelo-Fraenkel.

reduced to nothing. But the empty set is not “nothing”! We can note the difference between this definition of one, which has the static interpretation of the empty set as its point of departure, and the dynamic nothing described in the metaphor of Jesus forsaken, considered as the divine Atom, a One which splits to reveal a wealth of relations within.

3.3 Parallel to Cantor’s theory of sets and in an attempt to overcome the difficulties that had emerged with Russell’s paradox, the Polish logician Stanislaw Lesniewski developed another theory of classes, described by him as a theory of “collective classes,” as opposed to the “distributive classes” of Cantor’s set theory.²⁷ Lesniewski, like Cantor, thought his proposal could one day become the foundation for all mathematics, but he never saw this fulfilled.

From Lesniewski’s point of view, a set or class is not considered to be “something,” a new or diverse entity, other than the ingredients which make it up. Herein lies the difference with Cantor’s set theory. For Lesniewski, the reality of a set or class is nothing other than the reality of its components or constituent parts.²⁸

27. In a collective sense, a “set” or class is a whole composed of parts. One begins by looking at the whole and proceeds to consider the parts. In classical set theory, on the other hand, one begins with the elements or with a concept that defines the elements and only then proceeds to consider these as a whole. For an introduction to the theory of collective classes (Mereology), see Stanford Encyclopedia of Philosophy <http://plato.stanford.edu/entries/mereology/>. An excellent, thorough exposition can be found in Peter Simons, *Parts. A Study in Ontology* (New York: Oxford University Press, 1987).

28. This is in the line of Husserl, who was the first to provide an in-depth analysis of the relation part/whole (1901). Although Husserl came from a mathematical background and in an earlier work (*Philosophy of Mathematics*, 1891), had given an account of the one and the many similar to Cantor, in later studies he turned to a logical approach and treated the question of the whole and its parts. In his words: “in our

This brings our discussion regarding “one” from a conceptual level (many thought of as one) to an existential level. In the light of this realism, the concept of “empty set” is meaningless for Lesniewski. For mereology—the system devised by the Polish scholar—the “elements” or “ingredients”²⁹ are the “parts” of a whole, of a truly existing object. From this perspective, the whole (the one) and its parts are logically co-essential. There can be no parts without a whole. But also the whole, as it is defined by Lesniewski, requires at least one part (itself). To distinguish this from the other parts that are not the whole, the latter are called “proper parts.”

In reality, the underlying structure of mereology is holistic: the same axiom that defines the parts presupposes the whole. Lesniewski goes on to provide for the possibility of the “union” of various parts through an operation termed “mereological sum” or “fusion.” As we shall see, however, the interpretation of mereological fusion does not correspond to “the being fused into one” which we considered above in 2.4. As we have indicated above, Lesniewski called his system *mereology* (from *meros* = part). Due to various difficulties, including the restrictions imposed by the Communist regime in Poland during Lesniewski’s lifetime, mereology has become an object of more extensive study only in the past few decades. Gradually it became clear that the original version proposed by Lesniewski (“classical extensional mereology”) is but a bough of a tree with other branches, all useful for describing with precision the various typologies of the relation part/

definitions and descriptions relative to this point, the concept of whole was a presupposition. Nonetheless, one can always do without this concept, by substituting it with the simple subsisting together of entities previously indicated as parts” (*Logical Investigations*, III, 21).

29. Lesniewski used both terms as equivalent, but since the “element” of mereology has a different meaning than the “element” in set theory, the second term “ingredient” is preferred to avoid confusion.

whole. According to the axioms that are added or taken away, the resulting mereologies take on various specific characteristics (i.e., extensional or non-extensional, atomic or non-atomic). For our purposes it will be useful to list three distinct, equally possible, but mutually incompatible interpretations which regard the concept of one.

3.3.1 An “Atomistic” (or “Simple”) Interpretation

In this version, all of the ultimate parts are atoms, in the sense of not being further divisible into proper parts. This interpretation—aside from a few philosophical considerations mentioned above, for example, regarding the existence or nonexistence of the empty set—has little to distinguish it from Cantor’s set theory. In the end the parts are discrete entities. The fusion or “mereological sum” is equivalent to the union of sets in Cantor. Since it is a sum that prescind from any relation of the members with one another, it lacks the quality of wholeness which characterizes the One which is the object of our study. The same can be said for fusion in all the various interpretations of mereology. The term has a specific, limited sense which should not be mistaken for the “being fused into One” of the Pact.

3.3.2 An “Atomless” Interpretation

In this version, no part is an atom. Every part can always be further divided. This interpretation is better suited for describing the reality of the *continuum*, because, all told, this is its starting point. Based in part on this second alternative, in a non-extensional version of mereology,³⁰ L. Obojska has proposed a new definition of

30. The difference between extensional and non-extensional mereology is also a question of axioms. Classical mereology is extensional. In non-extensional mereology it is not necessary that there always be a difference between a proper part and the whole.

One, in conformity with Aquinas' intuition that in God the one that is convertible with being admits a plurality of relations. It is a dynamic identity (DIT) which is constituted of and contains within itself an infinity of relations, beginning from the interconnection of three primary relations.³¹ In other words, in the dynamic identity, the relation is not something added on, but rather an intrinsic constitutive element. This definition of "one" seems more suitable for describing the reality of "One" which results from the Pact. It offers an explanation in conformity with the situation that each reality can be "in" the other while, at the same time, contain the other in itself. In fact the first application of the definition of DIT can be found in the field of fractal geometry, a geometrical exemplification of "the whole in every part" (see 2.3 above). As to "fusion," the comments made above in 3.3.1 remain true. We can also note that in the atomless interpretation of mereology, every whole can be expressed "as a fusion" in infinitely different ways, in conformity with the characteristics of the One described in 2.2 and 2.3 above.

3.3.3 An Interpretation Which Admits Both Atomic Entities and Atomless Entities

Husserl was actually a predecessor of the classical mereology of Lesniewski with his philosophical study of parts. He noted that there are some wholes in which the parts "co-penetrate one another," others in which the parts are "external to one another, but which determine real forms of connection, in which every part is

For example, one can consider the interior of a geometrical disk and the disk itself in a mereological class which does not include the circumference.

31. Lidia Obojska, "Primary Relations in a New Foundational Axiomatic Framework," *Journal of Philosophical Logic* 36 (2007): 641–657.

linked to every other or they are joined two by two. . . . One and the same whole can be, in reference to certain parts, a co-penetration, and in reference to other parts an inter-connection."³² However, as Simons has remarked, in mereology the formally possible case of a system including both atomic and atomless basic elements has not been considered seriously, perhaps owing to the tendency of both philosophy and the natural sciences to seek a uniform picture of the world.³³

I would suggest that Obojska's contribution is in consonance with this third interpretation and can offer formal categories useful for developing this line of thought in an integrated perspective. In fact, beginning from the general category of primary relation which Obojska proposes, one can define both the static identity (reducible to "atomic" entities) and the dynamic identity (reducible to "atomless" entities) and arrive at a formal description of both "one" and the "One," in conformity to the meanings of these terms presented above.

Conclusion

There has been a perennial return in the history of thought to the dialectic of the one and the many, and so the foundations of mathematics as developed through time could not but reflect this same dilemma. Starting from a formal axiomatic system, like that presented in set theory and in the various versions of mereology, it is possible to lay down every possible path of rational analysis relevant to this theme in a clear and rigorous manner, situating

32. Husserl, III, 21.

33. See Peter Simons, *Parts. A Study in Ontology* (New York: Oxford University Press, 1987), p. 42. This is a possibility that not even Kant considered as a possible solution of the second antimony of reason in his *Critique of Pure Reason*.

the relation one/many within the horizon of the relation whole/part. In this perspective the One resulting from the Pact of unity between Chiara Lubich and Igino Giordani, with all its specific characteristic qualities (which is clearly not the simple “number” one), turns out to be a concept that has a rational underpinning, since the conceptual instruments for its formal description can be found in the foundations of mathematics. But we can say even more. Not rarely in the history of thought has the interplay between experience and the communication of what has been experienced played a role in the progress of understanding. Here too, in the case under study, we find that familiarity with the structure of the One resulting from the Pact has been a significant factor in the development of a promising new axiomatic framework.

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