

Bolzano and Phenomenology

WANG Yixuan, WANG Ce

Xi'an University of Posts & Telecommunications, Xi'an, China

Bolzano's invention of "pure logic" in his *Theory of Science* laid the foundation for Husserl's establishment of phenomenology, because Husserl also established a "guidance of pure logic" in *Logical Investigations*. However, in Husserl's opinion, "pure logic" is only a necessary thing before the establishment of phenomenology; it is not the last thing in human thought, as well as it is not a core idea of "pure consciousness". Therefore, Bolzano's logical concept only promoted Husserl to a "primary phenomenology", which was only the preparation and entrance of this phenomenological philosophy.

Keywords: Bolzano, Husserl, phenomenology

Introduction

Bernard Bolzano (1781-1848), a Czech mathematician, logician, and philosopher, was one of the most important figures in modern western thought. In 1837, he published his logical masterpiece *Theory of Science* (*Wissenschaftslehre*), which was considered "the gateway to modern logic". Edmund Husserl (1859-1938), an Austrian born in The Czech Republic, is the founder of phenomenology. His masterpiece *Logical Investigations* is regarded as the most important work of contemporary philosophy. These two thinkers have very deep academic interweaving. Husserl discussed Bolzano's logical thought in details in his *Logical Investigations*. So, *Theory of Science* is one of the most influential works on *Logical Investigations*; it was on the basis of Bolzano's logic that Husserl invented "descriptive psychology", which became the beginning of his entire phenomenological philosophy. Therefore, through "Bolzano's turn", Husserl successfully moved from pure logic as "formal analysis" to phenomenology as "formal ontology" (Benoist, 2003, p. 237).

From *Theory of Science* to *Logical Investigations*

In *Logical Investigations*, Husserl said:

This works in front of us, compared with Bolzano's works, will show that these studies are by no means a simple comment or critical repair of Bolzano's basic idea, although on the other hand, these studies do accept the decisive initiative put forward by Bolzano. (Husserl, 2006, p. 224)

Husserl deliberately placed Bolzano at the entrance to phenomenology from logic. Then, what kind of relationship is Bolzano and phenomenology?

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WANG Yixuan, Master Degree candidate, School of Marxism, Xi'an University of Posts & Telecommunications, Xi'an, China.
WANG Ce, associate professor, School of Marxism, Xi'an University of Posts & Telecommunications, Xi'an, China.

In *Theory of Science*, Bolzano claimed that logic is a pure science, and its theme is the law of thought. More accurately, it is the law of truth, that is, what he called “logic itself is the constraint of all truth” (Bolzano, 2014, p. 53). In other words, logic is the specification and description of the way people obtain truth. It is obvious that Bolzano regards logic not only as a “pure formal science” (Bolzano, 2014, p. 40) like mathematics and geometry, but also as an “independent science” (Bolzano, 2014, p. 44). He believes that a science is independent of another, if the proposition contained in the latter does not need to appear in the proposition contained in the former, so psychology can be separated from logic. In short, the concepts of “concept in itself”, “idea in itself”, “sentence in itself”, “truth in itself”, “grounding in itself”, and “derivation in itself” in *Theory of Science* are obviously the product of Bolzano’s efforts to eliminate the contents of psychology and epistemology. These logical concepts laid the conceptual foundation for Husserl’s “guidance of pure logic” in the Volume I of *Logical Investigations*.

Let’s analyze the logical idea in Husserl’s foundation work of phenomenology, *Logical Investigations*. Between 1894 and 1896, Husserl studied the *Theory of Science* for the first time, which prompted him to gradually move away from the logical psychologism of Brentano school and towards the objectivism of logic. That is to say, Husserl tried to construct a pure logic without any content of empiricism, skepticism, and humanism. At the end of “guidance of pure logic” in Volume I of *Logical Investigations*, Husserl expressed high praise for Bolzano:

Although Bolzano did not clearly explain and agree with the independent boundary of pure logic in our sense, in fact, in the first and second volumes of *Theory of Science*, pure logic has been described purely and scientifically as the basis of scientific theory in his understanding. He endowed pure logic with ideas so rich, unique, scientifically assured, and at least useful, that for this he is regarded as one of the greatest logicians of all time. Bolzano manages logic with the precise spirit of strictness. He was the first to apply this spirit to the theoretical exploration of those basic concepts and axioms of mathematical analysis, so it provides a new basis for mathematical analysis. Logic as a science must be based on Bolzano’s works, and logic must learn what he must learn from this work, that is the accuracy of mathematical analysis. (Husserl, 2006, p. 234)

Generally speaking, the Volume I of Husserl’s *Logical Investigations* has three purposes: first, establish the basic concept of pure logic with the aim of transforming formal rules into normative rules; second, it purifies psychology from logic, refuses to carry on the psychological demonstration to logic, and advocates to construct an epistemology from the meaning of the basic concept of logic; third, as a preparation for phenomenology, make a general outline of pure logic as its main concepts and tasks. In short, Husserl defines pure logic as a scientific system of rules and theories of thought, which are based on the meaning of the category of conceptual meaning. The pure logic that Husserl tried to construct is different from the so-called methodology, and also from the logic of scientific cognition, just like the difference between pure geometry and the operation technology of measuring land. Husserl’s mission and task of giving pure logic is the same as Bolzano’s view of logic as “the rules of thought” or “the rules of truth in itself”, that is, pure logic is different from “technology” or “the art of discovery” as scientific practice. The former belongs to “general logic” in a narrow sense and the latter is regarded as “special logic” in a broad sense; it is about the applied logic of specific science. Husserl also regards his pure logic as the transformation of Kant’s transcendental logic, which is very consistent with Bolzano’s critical thinking of Kant’s philosophy of mathematics in *Contribution to a Better Exposition of Mathematic* (1810) and *New Anti-Kant* (1850). Both philosophers agree that Kant’s transcendental logic is the product of confusion between psychology and logic, and is actually a kind of

“logical psychologism” (Coffa, 1991, p. 7). Husserl’s critique of logical psychologism appeared in his *Formal Logic and Transcendental Logic*, subtitled *A Critical Study of Logical Reason*. Husserl defined the task of this work as “an unusual expansion and thorough criticism of logical psychologism” and “an investigation of the ‘guidance of pure logic’ from formal propositional science to formal ontology”, thus realizing a “real unity in strict significance” (Husserl, 2012, p. 73). Husserl believed that his *Logical Investigations* ignored the relationship between formal propositions and formal ontology, which stipulated the process of phenomenology. Obviously, *Formal Logic and Transcendental Logic* is a further deepening and thoroughness of the phenomenological program expounded in *Logical Investigations*, or is a deeper transcendentalization or more intuitive of the former. What transcendental logic stipulates is about the conscious experience required by the logical object in transcendental subject; however, the object of pure logic just constitutes itself in these experiences and forms the object in evidence. Husserl emphasized that the subjectivity of pure logic must be strictly divided into its category and its objectivity.

Bolzano pointed out in the *Theory of Science* that logic, on the one hand, as the law of truth, is “universal logic”; on the other hand, as a theory of scientific discovery, is “special logic”. He defined logic as a “theory of science” in two aspects: One is the research on logic itself and the other is the normative role of specific science. Husserl put forward the normative and practical functions of logic in *Formal Logic and Transcendental Logic*, which is deeply consistent with Bolzano. If logic becomes normative and practical, it can be transformed into a normative technical science in the corresponding form; however, logic itself is not a normative science, but a strict science based on pure rationality. Bolzano believes that once the conceptual framework of objective logic is established, the mission of pure logic as a science can be completed. However, in Husserl’s view, through the work of antipsychologism, the construction of pure logic is not a completion, but more importantly a beginning. That is to say, pure logic still belongs to a series of ideas of pure reason, and is in fact a “subjective form” which is fundamentally different from empiricism; this is a problem that Bolzano ignores. Husserl believed that the empirical objective science based on pure logic is not reliable, because pure logic itself needs to be demonstrated, and this kind of argument can only be carried out through the backtracking from pure logic to transcendental logic. Transcendental logic requires to explore the “subjective formation” of pure logic, as well as the laws running through these formations. Therefore, the clarification of the more essence and deeper foundation of pure logic has not only become the ultimate goal of Husserl’s *Logical Investigations*, but also constitutes the beginning of his phenomenology.

From Pure Logic to Phenomenology

Influenced by Bolzano’s *Theory of Science*, the concept of logic is always associated with the ideas of “form”, “purity”, and “reason” in Husserl’s *Logical Investigations*. Elmar Horenstein, the editor of *Husserliana*, pointed out:

Logical Investigations is by far Husserl’s most important works. It owes its importance to two contributions: firstly, he demonstrated logic as a pure, formal, and independent science according to its original aims; secondly, this original task eventually led to a breakthrough towards a new epistemology, that is, phenomenology. (Husserl, 2006, p. 2)

In the preface of the second edition in 1913, *Logical Investigations* was praised by the Husserl himself as “a breakthrough work, so it is not an end, but a beginning” (Husserl, 2006, p. 1). My question is: How did this “breakthrough” happen? What did phenomenology breakthrough in pure logic?

In *Theory of Science*, Bolzano separated “idea in itself” from words and “proposition in itself” from sentences, and he fulfilled the task of expelling psychologism from logic. Similarly, in the Volume I *Guidance of Pure Logic of Logical Investigations*, Husserl pointed out that the fundamental problem of psychologism is to confuse the research objects of psychology and logic, and to mix the intentional activities with the intentional content, so as to bring the logical research into anthropocentrism. Husserl, like Bolzano, also accomplished the task of anti-psychologism.

Some researchers believe that Husserl reintroduced psychologism in Chapter 11 of *Logical Investigations*, which is obviously a misunderstanding. D. Zahavi, a Danish scholar, also pointed out this misunderstanding in *Husserl's Phenomenology*. He said:

Logical Investigations is sometimes regarded as a deeply divided work, characterized by a “guidance to pure logic” as a critique of psychologism, while *Studies in Phenomenology and Epistemology* culminates in a descriptive analysis of consciousness. As Husserl writes in the new preface to the second edition of *Logical Investigations*, the opposition between the two parts is more apparent than real. We are dealing with a series of systemically related researches that gradually reach a more complex level of reflexivity, and only a superficial reading of them can lead to the misunderstanding that the work is guilty of another kind of psychologism. (Zahavi, 2003, p. 6)

In the preface of the second edition of *Logical Investigations* in 1913, Husserl clarified this problem. Firstly, in the first edition of “guidance of pure logic”, Husserl simply equated “truth in itself” with “truth of reason”, thus leading him to interpret the concept too simply to grasp its essence; secondly, the Volume II of the first edition focuses on the significance of “intentional activities”, but he does not pay full attention to the concept of “intentional content”, much less to the distinction between the two and the essential relation of the parallelism discovered later in phenomenology. In fact, Husserl is here to bridge the gap between “intentional activities” and “intentional content”, so as to complete the transition from pure logic to phenomenology. He argues that the objectivity of intentional action and the objectivity of intentional content can be agreed upon, because they are both conceptual possibilities independent of empirical reality. Husserl expounded this idea for the first time in Chapter 11 of *Logical Investigations*:

On the one hand, it is the connection between facts, which are intentionally related to thinking experience, that is, reality and possible thinking experience; on the other hand, it is the connection between truth, in which the unity of facts itself obtains its objective effectiveness. The former and the latter are given together and cannot be separated from each other. (Husserl, 2006, p. 227)

As a result, from Bolzano’s “formal *a priori*” or “logical *a priori*” of objective truth, Husserl entered the “content *a priori*” or “material *a priori*” required by phenomenology, that is, what he called “the transcendental essence of ideas”. So it is obviously to see that Husserl’s thought has exceeded Bolzano’s main ideas in *Theory of Science* at this time, and this became his turning point and beginning from pure logic to phenomenology.

In the Volume II of the first edition of *Logical Investigations*, Husserl focuses on the truth objectivity of intentional activities, focusing on the research of pure psychology. However, the so-called “pure psychology” or “descriptive psychology” here is no longer a theory about how the content of human conscious activities occurs, but a theory about the conceptual possibility of such activities; it belongs to a kind of “phenomenological psychology” or “transcendental psychology”. In this way, Husserl gradually transformed pure logic into a science about the “possible conditions of consciousness”. In the second edition of *Logical Investigations*, Husserl then promoted the “transcendental psychology” proposed in Chapter 11 of the first

edition to “transcendental phenomenology”. The important driving force of this process is that his thought on “structure” has reached maturity, and “the structure of object in consciousness” has become one of the basic problems of phenomenology. Husserl believed that this kind of consciousness structure takes place in the form of “ground” and “consequence” as pure ideas. The phenomenological meaning of consciousness structure is to pursue the possible conditions of pure logical concept, which reaches the “original essential idea” of pure logic, and the revelation of this “essence” is just a more profound investigation and demonstration of logical concept. Husserl named this activity “phenomenological intuition” or “manifestation”, that is, “intentional activities” is the intuition or explicit view of “intentional content”, which is the objectivity of truth achieved through phenomenological reduction.

Husserl’s concern is not only the ideality or objectivity of conscious activities, but also the ideality and objectivity of “intentional object” (*Noema*) and “intention related items” (*Noesis-Noema*) as the result of conscious activities. Through the method of transcendental reduction, the intentional activity, that is the actual content of consciousness, and the related items of consciousness, that is the intentional content of consciousness, are unified in pure consciousness, and phenomenology as a system of transcendental idealism is established. In this way, the relation between reason and object is reflected in transcendental phenomenology as the unity of intentional activity and intentional object, while the opposition of subjectivity and objectivity in traditional philosophy is shown as the parallel relation between the experiential nature of psychological experience and the possibility of pure consciousness. From this point of view, Husserl seems to enter a more dark and obscure psychologism in the second edition of Volume I of *Logical Investigations*, so he reaffirmed what he had worried about “the dissolving of the objectivity of truth in consciousness” in the first edition. In this regard, Ni Liangkang, as a Chinese scholar, said: “Husserl’s idea is not a reply, but a step forward to a higher level, or at least an attempt to move forward to a higher level” (Husserl, 2006, p. 313).

The concept of pure consciousness in transcendental phenomenology is not only the concept relative to empirical facts, and the objectivity of truth is not only the objectivity relative to the empirical world, but an idea and objectivity in the sense of “*a priori*”. From this point of view, Husserl achieved the thoroughness of pure logic he hoped to achieve, that is, an absolute idealism, a complete anti-psychologism and anti-anthropocentrism. It is obviously that the purpose of the second edition of Husserl’s *Logical Investigations* is completely different from that of Bolzano. The pure logic of the latter is regarded by the former as only a staircase or an entrance to phenomenology, but it does not enter the room, let alone a glimpse of the mystery. Although Husserl agreed with Bolzano’s foundational work in logic, that is, “my *Logical Investigations* accepted Bolzano’s decisive proposal”, he knew that this elder had not stepped out of his logical framework and moved towards phenomenology. In a letter to Brentano in 1905, Husserl said: “although these concepts of Bolzano have influenced me deeply, but in terms of what I have presented in the *Logical Investigations*, I can’t see Bolzano as a ‘tutor’ or a ‘pioneer’” (Husserl, 1994, p. 39). In *Pure Phenomenology and the Concept of Phenomenology* published in 1913, he then criticized Bolzano for not understanding the essence of the relationship between “intentional activity” and “intentional content”, and believed that he had not touched on phenomenology. Husserl said:

On Bolzano’s concepts of “judgment in itself” or “proposition in itself” in *Theory of Science*, it shows that Bolzano did not understand the significance of his groundbreaking concept. He has never seen that we have two possible explanations in principle on this issue, each of which produces something or may be called “judgment itself”, that is, the specific factors of judgment experience (the idea of intentional activity) and the idea of intentional object which related to

the idea of intentional activity. Bolzano's description and explanation are ambiguous. As a mathematician of objective objects, he was always concerned with the concept of intentional objects, though an accidental word seemed to suggest otherwise. He focuses on the concept of intentional object, just as mathematicians focus on numbers, that is, they focus on the calculus with numbers, rather than the phenomenological problem of the relationship between the consciousness of numbers and logarithms. In the field of logic or in other fields, phenomenology is something completely strange to the great logician. (Husserl, 1996, p. 239)

Conclusion

Bolzano's idea of logic prompted Husserl to reach a kind of "simple phenomenology" or "primary phenomenology". The former realized that logic as a "theory of science" had been completed by revealing the logical meaning of concepts such as "idea in itself", "sentence in itself", "truth in itself" as well as "derivation in itself". But he did not think that "pure logic" is not the last thing in human thinking; it is not a concept of "pure consciousness". In Husserl's view, the so-called "completion" in pure logic is actually an "unfinished business", because this logic does not cover all the experience of human consciousness. On the contrary, it just covers the most essential thing of the way of connection between human being and the world, that is, the "adaequation" between consciousness and the world, or the "insight" of reason into objects. Therefore, it is precisely in *Logical Investigations* that Husserl stepped into phenomenology from the path of pure logic paved by Bolzano.

References

- Benoist, J. (2003). Book review: *Edmund Husserl Logik Vorlesung 1896*. *Husserl Studies*, 19, 237-242.
- Bolzano, B. (2014). *Theory of science* (Volume I). (R. Paul, Trans.). Oxford: Oxford University Press.
- Coffa, J. A. (1991). *The semantic tradition from Kant to Carnap to the Vienna station*. Cambridge: Cambridge University Press.
- Husserl, E. (1994). Brief an Brentano (27. 03. 1905). *Husserliana, Dokumente Bd. III, Briefwechsel, Bd. 1. Die Brentanochule*. Dordrecht/Boston/London: Hrsg. Von Elisabeth Schuhmann & Karl Schumann.
- Husserl, E. (1996). *An introduction of pure phenomenology*. (Y. Z. Li, Trans.). Peking: The Commercial Press.
- Husserl, E. (2006). *Logical investigations* (L. K. Ni, Trans.). Shanghai: Shanghai Translation Publishing House.
- Husserl, E. (2012). *Formal logic and transcendental logic: A critical study of logical reason*. (Y. Z. Li, Trans.). Peking: China Renmin University.
- Zahavi, D. (2003). *Husserl's phenomenology*. Stanford: Stanford University Press.