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An Outline of Russell's Logic and Worldview (1920)[1]

We are all aware that in the universe there exist the following two kinds of things: One is matter (*wuzhi* 物質) and the other is form (*xingshi* 形式). In other words, the first kind of things are elements (*yuanzhi* 原質) and the second kind are relations (*guanxi* 關係). If one of those things were missing, a thing such as the universe would never have come to exist. Both of these things are real (*shizai de* 實在的). According to Russell's understanding, the essence of philosophy is logic. Logic, on the other hand, is the same as mathematics, a science which specializes on studying form – relations. As for the matter, it is studied by a variety of different specialized fields of science, while it ought not to be studied by philosophy. Because form is universal, the aim of philosophy is also universal. Philosophy does not use scientific data as its foundation but philosophical conclusions, it also does not change because of scientific theory. Instead, it has got its own scope. And, if one understands the things within this very scope, then one can also understand the general aspects of the universe (*yuzhou zhi pubian de muyang* 宇宙之普遍的模樣).

1 Wang Xinggong 王星拱. "*Luosu luoji yu yuzhou guan gaishuo* 羅素邏輯與宇宙觀該説 (An Outline of Russell's Logic and Worldview)." *Xin qingnian* 新青年, 8(3), 1-6.

First, we shall raise an example, with which we shall try to explain the realness of these form – relations (as studied in philosophy). When, for example, I say: "I am in this house" (*wo shi zai zhe jian ju li* 我是在這間居裏) there is no doubt that "I" (*wo* 我) and "house" (*ju* 居) are real, while "this" (*zhe jian* 這間) expresses a special property of this house. The word "in" (*zai li* 在裏), however, necessarily also stands for a real thing. This real thing is a relation which subsists between me and the house. If what the words "am in" represent was not a real thing, then the proposition (*mingci* 命辭) "I am in this house" would be meaningless – humans would not be able to understand it. This is why our understanding (*liaojie* 了解) does not only imply matter and its properties but also relations. At this level, we can already understand that relations are real.

Because Russell wanted to confirm the realness of relations, consequently he also had to disprove the scholastic notion of logic. From Aristoteles onwards, the scholastic logic was a logic of classes – it divided everything that exists in the universe into two classes, which was Aristoteles' wild ambition. This logic derived from the relationship between subject (*zhuci* 主詞) and predicate (*weici* 謂詞). Thus, for example, in the proposition "oxen have horns", the word "oxen" is a subject and the expression "have horns" is a predicate; in the proposition "human is an animal with the capacity to laugh", "human" is the subject and "is an animal with the capacity to laugh" its predicate. According to the scholastic definition of logic, all propositions can be reduced back to a subject-predicate form. In other words: all relations can be simplified into the subject's properties. Since the above mentioned two examples basically speak about the properties of "oxen" and "men", it is also self-evident that they can be included into the subject-predicate form. If, however, the same theory is used for the aforementioned sentence "I am in this house", the interpretation becomes a bit more difficult. This is so because this proposition contains two terms (*xiang* 項) – two things. Two things which are relative to each other – they have a relative relationship. If we were to consider this term only as a property of another term, then it cannot be avoided that what was originally an equal wife becomes supressed as a mere appendage to the husband. However, this still is not regarded as the fatal blow to scholastic logic. Let us take another look at the propositions which contain a "comparative degree" (*bijiao de dengji* 比較的等級); the relations contained in this kind of propositions are what Russell calls "asymmetrical relations" (*fanxiang de guanxi* 反相的關係). For an asymmetrical relation it is impossible to be simplified into a property of a subject. Let's take a look at what he says about this matter.

Now, let us take a proposition "this thing is larger than that thing." This proposition does not only reveal to us that the two objects are different in size (*tiliang* 體量), we also learn that the size of one of them is larger from the other's components (*fenliang* 分量 "partial size"). It is completely impossible to reduce this relation to a property of a subject. Provided that we know that this thing is the same as that thing, we can also transform the proposition "this thing is the same as that thing" into the proposition "these two things are the same". If in this new proposition, we regard "these two things" as the subject and "are the same" as the predicate, this would be the same as to regard "are the same" as the common property of the two subjects of "these two things". In other words: we would reduce the relationship between them to a property common to both of them. Let us assume that we only know that this thing is different from that thing, we are again able to change the proposition "this thing is different from that thing" into a proposition which says "these two things are different". Again, in this new proposition we treat "these two things" as its subject and "are different" as its predicate. This is to say: we regard "are different" as the property of the subject "these two things." In other words, we simplify the relation which subsists between them to their property of being different. But if now we not only know that these two things are different, but also that this thing is larger than that thing, then their property of being different, from the formal aspect, cannot entirely explain this fact. Plainly speaking, what the proposition "this thing is larger than that thing" contains within itself is not only their property of being different. Let us assume that this proposition would only contain their property of being different. In that case there would be no difference between the propositions "this thing is larger than that thing" and "that thing is larger than this thing" whatsoever. What ought to be said is: the size of this thing is greater than the size of that thing. No matter how, what we cannot do is to dismiss the relation "larger than". For, because the relation is not the same, neither is the form. Therefore, the proposition "this thing is larger than that thing," and the propositions "these two things are the same" and "these two things are different" all have different forms. This asymmetric relation is indissoluble – no matter how, it cannot be simplified to a property of the subject. This further reveals the reality of relations, which we need to recognize.

The relation "larger" is like that, and so are relations like smaller, before, behind, on the left, on the right, inside or outside. The example discussed above only represents a relation between two terms; however, we should also know that the same relation can be shared by three, four, five, down to an infinite number of terms, such as the elements in a series or the dots in a straight line.

Because scholastic logic maintains the universality of the subject-predicate form, therefore it also maintains that "the world" (*tianxia* 天下) is only one single subject, and that this subject is absolute. It further maintains that whenever we pass a judgement (*panduan* 判斷) and form a proposition, we are denoting the attributes of an aggregate, identical subject. If "the world" could have two subjects, then the proposition "these two subjects are here" (in this proposition, the expression "two subjects" is the subject and "are here" is the predicate) could neither denote the property of this subject nor the property of that subject from the two subjects. Hegel therefore argued that the form of philosophical propositions is necessarily "absolutely so and so" (see Russell's *Scientific Method in Philosophy*). This postulation was strongly opposed by Russell, who proposed that there is not only one form of proposition. Not only is there not only one form, but there are many of them – infinitely many! Through the examples raised above it could already be indicated that propositions can have different forms. All other propositions, which contain any of the words "and", "or", "only if", "if", "every", "no", "not", "does not exist" (*meiyou* 沒有), as well as other words of negation, all have different forms, because each of these particles represents its own special relation. This argument by Russell can be best understood if used in propositions which contain negations such as "not", "is not" or "does not exist." All these words represent relations – formal relations. If we do not regard form as real, but instead maintain that these negations express actual substance, this makes no sense, because there is no such thing as "nothingness" (*meiyou*) as the property of actual substance. Because of this argument many philosophers maintain that there is no such thing in the world as "non-being" (*meiyou*). Their mantra is "Thou cannot not conceive nothing". However, that in each and every day we almost always use "does not exist" (*meiyou*, "not") in making judgements adequately demonstrates that "nonbeing" must also be real. This reality, however, is of a negative form. For the reality of forms is different from the that of the substance. Therefore, Russell says that: "In the past, people believed that there exist no other worlds apart from the mental and the physical world. Now we know that beside these two worlds there also exists the world of form. Akin to the physical world, this world of form is also objective, however, unlike the physical world it cannot be perceived by sense organs." The duty of logic is to study this world of form. In this world there also exists a variety of types, analogous to the "abundant variegation" of the flora and fauna in the physical world. It is not like the scholastic logic, which generalizes all forms into one. The function of logic is analysis; the "dictionary" of logical form needs to be adequate, so that the flaw of "subduing the multitude under the one" (*qu zhong jiu yi zhi xia* 屈眾就一之下) will

be unlikely to occur. The first step towards such logic consists in recognizing the reality of relations.

Generally speaking, the worldview (*yuzhouguan* 宇宙觀) which ensues from such analytical logic contains four main characteristics: (1) plurality (*duoyuan* 多元), (2) insignificance of humanity (*renlei miaoshao* 人類渺少), (3) realism (*weishi* 唯實), (4) neutrality (*zhongli* 中立).

1. Plurality. The actual world is composed of numerous things with numerous properties and numerous relations. The relation is never more important than matter – based on the realist philosophical aspect of Russell's theory, what is important is that there is such a relation – but it is at least as important as matter. Thus, for example: if you and I are friends, our friendship contains a relation between two terms; if I am jealous of you because of her, this is a relation between three terms; if I hope that you will give this book to him, this incorporates a four-term relation; if all people in the world perfectly exhaust their abilities to get what they need, this contains relations between immeasurable number of terms. We could also try– I hope not incorrectly – to explain it using a simple metaphor: matter is a brick and relations are mortar. One would not be able to build a wall with either one of them missing. But relations cannot be regarded as space-occupying things in the same way as mortar occupies space. The question of "How do many items come to constitute the world by being linked together by relations?", also needs to involve the concepts of continuum and infinity. But because Russell's theories of continuum and infinity are derived from mathematics, it involves specialist undertones, which is why we shall not discuss it here.

2. Insignificance of humanity. Ancient Greek philosophers believed in harmonic unity. They maintained that the universe is "one" (*yi* 一, "uniform"). The medieval theologists-philosophers believed that man is the ruler of the universe. According to Russell's philosophy, though, this is a grave underestimation of the universe. The reason why the Greek philosophers maintained a belief in the one lay in their excessive worship of rationality and underemphasizing of experience. Basing themselves on the rational, they inferred that the universe must be uniform and not plural. Because the medieval philosophers lived in a world of constant war and turmoil, their ideal was a tiny and orderly universe. Russell, on the other hand, believed that such worldviews treated everything that exists – the known and the unknown – as a globe on [the philosophers'] writing desk, [believing that the world can be] discussed from within

the confines of their rooms. According to Russell, we can only infer this from that because of the relationship which subsists between this and that. And, because that is further related to that, we can also infer that from that. This further implies that, if the relations are complex, then one will probably find oneself unable to make any inferences. How can one then say that [everything] constitutes a harmonic unity? This is why, the boundaries of the domain of the one cannot be set within the realm of the unknown. If we claim that this universe is complete and therefore a harmonic one, then in this "world" (*tianxia* 天下) there probably exist many different worlds, while each one of them must seem to be complete. This is the same as the mathematical principle which stipulates that outside of infinity there can also be the finite. How could this be impossible? Therefore, this universe is perhaps only one of many universes. And it may also be that our solar system is only some particles of dust in this universe, while the Earth is only a small element of this solar system. In the same way, humankind is only one of the species of animals which live on this planet. To believe that humanity's desires correspond to the course of this universe is indeed the same as a frog which lives in a well and thus cannot speak about the ocean. (Naturally, this principle also agrees to the fourth characteristic, neutrality.)

3. Realism. Logic is a science which studies relations. But the basis (*zhangben* 張本) of these relations is perception (*ganchu* 感觸, also translated as *ganjue* 感覺). And the datum (*zhangben*) of sensation is real. This differs from what is claimed by the idealists. Namely, that it exists because of the mind. It is also different from the claims of the materialists, who say that it is the substance of the external world *per se*. Since all sensations are genuine, so are the sensations we have in our dreams. But, because these sensations are irreconcilable with those we experience when we are awake, we say that dreams are not true. One can see that the falsity of dreams is not at all the falsity of elements of our perception, but only a falsity of the relations of these elements. (This has got the same meaning as the assertion that the scientific truth is a systemic truth.) Now, since these sensations are based on the real, then the physical "objects" (*wu* 物) are all also founded on these very same sensations. In other words: the objects in physical science have got a definite relation to the sense data (*ganchu zhangben* 感觸張本); the objects in physics are the function (*hanshu* 函數) of sense data. Thus, for example, if I go past this table, then the continuum of the table is represented by the colour perceived by my eyes. These combinations of the grades of colour

are real. As far as the existence of the table *per se* is concerned, it is thus established as an aggregation of different sensations. (Vision and touch.) Things like a point in geometry or the [notion of an] instant in mechanics are all established on the basis of sense data.

4. Neutrality. The universal forms studied by philosophy are not ordered about by human desire. [It is a fact that] two plus three equals five. And the result cannot be changed to six just because we would wish it to be so. Russell believes that the question whether the actual course of the universe is evolution (*jinhua* 進化) or regression (degeneration, *tuihua* 退化) is not to be answered by philosophy. All notions of advancement from inadequate to better in evolution are only the product of human desire. But we must not despair: since the universal form is neutral, the survival and preservation of humanity depend entirely on good fortune (*quan ping mingyun zhipei* 全憑命運支配, "depend entirely on fate"). If we want to pursue happiness, to do it via some indirect path is usually far better than to do pursue it directly. Astrology is trying directly to attain fortune and avert misfortune, but its benefit to humanity far less than that of the neutral astronomy. Alchemy (*dianjin huaxue* 點金化學) wants to directly produce wealth, but its benefit to humanity is far less than that of the neutral modern chemistry. Pursuit of the good is also like that: although philosophy does not regard the good as its final objective, if we want to understand the universal patterns of the universe, then its results are much better than if we follow the slavish manner of seeking good by trying to cling to and preserve one's wealth.

(*Translated by Jan Vrhovski*)