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THE LIBERATING POWER OF HARMONY
AND ORDER: ON THE NOTIONS OF LIBERTY AND
MATHEMATICAL LOGIC IN ZHANG SHENFU'S
PHILOSOPHICAL THOUGHT

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This paper discusses the thought of Zhang Shenfu, one of the central figures behind the propagation of modern science and dialectical materialism in Republican China (1911 – 1949). In particular, it focuses on the notions of liberty, mathematical logic and humaneness (*ren* 仁) in his writings in the period between the year of the May Fourth events (1919) and the late 1930s. The main aim of the analysis is to cast some light on the common conceptual and methodological features which underlay these interpretations, in order to reveal the essentially Chinese cultural “perception” or traditional worldview that served Zhang as the prism through which he viewed and understood the nature of and the relationships between all these “novel” concepts from the West. Consequently, an important aim of this paper will be to highlight a specific fragment of the intellectual mechanism that conditioned the so-called Chinese intellectual modernisation of the Republican period.

Keywords: Chinese philosophy, mathematical logic, humanism, liberty, Zhang Shenfu

1. Introduction

Zhang Shenfu (張申府, 1893 – 1986), originally called Songnian 崧年, was an important Chinese intellectual, who greatly contributed to the propagation of Western science, analytical philosophy and dialectical materialism in 1920s and 1930s China. As an important member of the May Fourth intellectual elite, he took part in shaping the left-oriented intellectual movement at Peking University, whilst, having been a close colleague of Li Dazhao, being also a senior member of the communist movement in Peking and a cofounder of the CPC (Communist

Party of China). Having been a notoriously outspoken and prolific writer, a lecturer in logic at the preparatory school of Peking University (1918 – 1921) and later also as an important member of the first modern department of philosophy at Qinghua University (between 1929 and 1936), Zhang played an important role in the initial process of dissemination and establishment of mathematical logic in China on the one hand and of modern Western philosophy and humanist ideas on the other.

In the current scholarship on the intellectual history of modern China, Zhang is usually credited for his pioneering contributions to the introduction and dissemination of the philosophies of Bertrand Russell and Ludwig Wittgenstein¹ in the 1920s and early 1930s.² To a minor degree, Zhang has also been credited for his general introduction of Freud's psychoanalysis in the early 1920s,³ and the earliest introduction of the philosophy of the Vienna School (early 1930s), in particular the thought of Rudolf Carnap.⁴ However, perhaps the most important of all Zhang's contributions to the development of modern intellectual discourse in China was his early propagation of concepts such as mathematical logic in cohesion with both traditional Chinese and modern Western humanistic ideas. This was later followed by his decades-long endeavours to devise a universal methodology that would be able to bridge the gap between the subjective and objective realms, on the one hand, and provide a common ground for a synthesis between traditional Chinese philosophy (predominantly ethics), Russell's mathematical logic and analytic philosophy, and dialectical materialism, on the other hand. As a lecturer and professor at the most prestigious Chinese

¹ Zhang also created the first translation of the latter's *Tractatus Logico-Philosophicus* into Chinese. The translation entitled *Mingli lun* 名理論 (*Luoji-zhexue lun* 邏輯哲學論) was published in two parts in the *Xiandai pinglun* 現代評論, in 1927 and 1928.

² Thus, for example: WEN, G., CUI, Q. *Zhongguo luojishi jiaocheng* [Course in the History of Logic in China], pp. 359–366.

³ As an example of first introduction JIANG, Y., IVANHOE, P. J. (*Reception and Rendition of Freud in China: China's Freudian Slip*, pp. 26–8) mention Zhang's article "Social Questions" (Shehui wenti 社會問題) from 1922, which was written and published during his stay in Paris. Allegedly in 1922, Zhang attended Freud's lectures at the University of Paris. (ZHANG, S. *Suoyi*, p. 99) However, Zhang was already interested in modern psychology back in late 1910s, mainly due to his impression that Russell had also had a deep interest in psychology. Thus, already in 1920, he published an abridged translation of Russell's essay "The Modern Science of Psychology" (Jindai xinlixue 近代心理學) in the *New Youth*, which also mentioned Freud's psychoanalysis.

⁴ Together with his younger brother Zhang Dainian (張岱年, 1909 – 2004). See for example: JIANG, Y. *Weiyena xuepai yai Zhongguo de mingyun* [The Fate of Vienna School in China].

universities (Peking and Qinghua), Zhang was also the first Chinese philosopher to have organised a specialised course on mathematical logic, Russell or Wittgenstein at any Chinese university.

As mentioned above, another important pillar of Zhang's contribution to Chinese intellectual discourse in the Republican period consisted in his early endeavours in introducing ideas from Western humanism, contemporary political and social philosophy, and the philosophy of science into the intellectual discourse of the May Fourth period (1917 – 1921). In the early 1920s, these included ideas such as liberty, sexual freedom, women's emancipation and modern education. With respect to the last, Zhang emphasised the importance of the inclusion of modern scientific methodology, facts and theories into Chinese national education. Most importantly, in these early expositions Zhang maintained that Western humanism and modern science were mutually interdependent, both stemming from human advancement in understanding the cluster of principles underlying reality. Viewing from a profoundly traditional perspective, Zhang thus considered concepts such as liberty, equality or moral values as consistent with the principles encapsulated in the natural sciences, in particular the most advanced theories such as mathematical logic. In other words, he viewed theories such as mathematical logic as the ultimate source for Chinese social, moral and political reform, or even crucial for Chinese spiritual and psychological transformation. Consequently, in his essays and articles from the May Fourth period, concepts such as liberty and equality appear on the same conceptual plane as mathematical logic, scientific method and so on. Moreover, they are presented as reflective of the same universal principles. At the same time, Zhang's passionate propagation of individual ideas from Western humanism, modern science and philosophy were still deeply immersed in a traditional Chinese worldview underpinned by the principles of, so to speak, a "dialectical" complementarity, conceptual holism, harmonious cosmology and so on. As a result, in Zhang's writings the above-mentioned ideas were usually interpreted in the context of a worldview dominated by the ideals of (principal) balance, harmony between subject and object and holistic comprehensiveness.⁵

When it came to his contribution to development of mathematical logic as a scientific discipline, he was first and foremost the leading propagator of an *idea* of mathematical logic, which he communicated through his version of an all-encompassing and profoundly pragmatic scientific worldview, one that combined traditional Chinese cosmology and Confucian ethics with ideas distilled from dialectical materialism and analytic philosophy. This very approach was also

⁵ See VRHOVSKI, J. *Shadowlands of Objectivism and Comprehensiveness...*

manifest in his lectures at Chinese universities.⁶ Zhang tended to explain concepts from mathematical logic within the perspective of everyday life, intertwined with problems from contemporary politics and ethics as well as from a general scientific standpoint. Furthermore, in the early 1930s the content of his lectures on logic also took on a strong political undertone, due to his ardent advocacy of dialectical materialism, on the one hand, and his then philosophical conviction that mathematical logic and dialectical materialism could be combined into one, on the other.⁷

Following a public incident in 1948,⁸ Zhang was ostracised from political and academic circles, and his contributions and philosophical ideas gradually fell into oblivion. As an important intellectual from the Republican period, he was rediscovered in the late 1970s, following a series of relatively widely noticed interviews with Zhang conducted by the American sinologist Vera Schwarcz. Consequently, from the early 1980s on, numerous studies devoted to Zhang Shenfu's philosophy started to emerge in Chinese academic circles. The first substantial act of rediscovery occurred with the publication of *The Collected Scholarly Writings of Zhang Shenfu* (*Zhang Shenfu xueshu lunwenji* 張申府學術論文集) in 1985. However, the most important studies on Zhang Shenfu's philosophy started to appear only in the late 1990s.⁹ The following decade saw a

⁶ His tendency to translate logical concepts into simple, everyday terms and his ability to illuminate the interrelatedness of theory and practice, made his lectures on logic the most popular and most well-attended course in the department (SUN, D. *Zhang Shenfu jiaoshou zai Qinghua* [Professor Zhang Shenfu's Years at Qinghua], p. 30).

⁷ See VRHOVSKI, J. *Zhang Shenfu – China's First Populariser of Russell's Philosophy and Mathematical Logic*, 1920s.

⁸ He was denounced by both the CPC and GMD, following the publication of an article in which Zhang openly opposed war and armed conflict. Subsequently, his wife, the communist activist Liu Qingyang, was also forced to publicly denounce and divorce Zhang.

⁹ For example: in 1997, the essay entitled "Zhang Shenfu's Philosophical Thought" (*Zhang Shenfu de zhexue sixiang* 張申府的哲學思想) was written by his younger brother Zhang Dainian and published as a chapter of his book *Culture Clash and Cultural Fusion* (*Wenhua de chongtu yu ronghe* 文化的衝突與融合). A year later, Li Weiwu 李維武 devoted an entire chapter of his doctoral dissertation entitled *Ontological Questions in Twentieth-Century Chinese Philosophy* (1998) to an in-depth analysis of the main pillars of Zhang Shenfu's philosophy.

further increase in the number of Chinese studies on Zhang's philosophy.¹⁰ However, as indicated by Guo Qiyong in his book *Studies on Contemporary Chinese Philosophy (1949 – 2009)*: in spite of numerous publications since the 1980s, “the inner logic of his dialectical materialism, his incorporation of traditional Chinese thought... into his philosophy, and his integration of Western logic and analytic philosophy into dialectical materialism remain relatively unexplored”.¹¹

In this paper, I will try to shed some light on the previously unexplored aspects of Zhang Shenfu's philosophy in both the early years of the May Fourth period as well as in the subsequent decade of its maturation (the late 1920s and early 1930s). By highlighting the theoretical interconnectedness between his understanding of the humanistic idea of liberty, which he derived from contemporary Western philosophy (Russell, socialism and libertarian political philosophy), and his (Zhang's) notion of mathematical logic, the principal aim of this study will be to provide new insights into the complex process of appropriation and blending between Western scientific ideas, modern philosophy and the traditional Chinese worldview in the pivotal years of modernisation of the Chinese intellectual world. By the same token, the author's hope is that a discussion of Zhang's philosophy as a product of a direct encounter between two

¹⁰ Among the most notable publications was the book *Exploring the New Culture of Modern China: A Study of Zhang Shenfu's Thought* by GUO Yiqu 郭一曲 (2002). Zhang's philosophy was also analysed in Guo's article “Analytical Dialectical Materialism: Zhang Shenfu's Philosophical Thought” from 2001.

¹¹ GUO, Q. *Studies on Contemporary Chinese Philosophy*, p. 324. The extent and true nature of Zhang's contribution to the development of mathematical logic as a scientific discipline in China is still a matter of debate. In the past few decades, the majority of historical surveys that touched upon the history of mathematical logic in China have either completely disregarded Zhang's role or mention him only briefly as the earliest proponent of Russell's philosophy in China. See, for example, ZHOU, Y., ZHOU, W. *Zhongguo luojishi* [History of Chinese Logic], pp. 1–25; ZHOU, Y. *Zhongguo luojishi* [History of Chinese Logic], pp. 398–406; LIN, X., ZHANG, S. *Shuli luoji zai Zhongguo* [Mathematical Logic in China]; SHI, M., ZENG, Z. *Shuli luoji zai Zhongguo fazhan zhihuan de yuanyin tanxi* [An Exploration of the Reasons for the Slow Development of Mathematical Logic in China]; SONG, W. *Zhongguo shuli luoji bashi nian* [80 Years of Mathematical Logic in China]. It is only recently that this trend has been reversed by a study produced by Su Rina and Dai Qin, who in their article “Zhang Shenfu's Contribution to Early Dissemination of Mathematical Logic in China” (Zhang Shenfu dui shuli luoji zai Zhongguo zaoqi chuanbo de gongxian 張申府對數理邏輯在中國早期傳播的貢獻) delivered a relatively non-critical overview of Zhang's publications and translations from the 1920s and 1930s, which is, however, set in the narrow context of Zhang's own autobiographical accounts about that period.

worldviews of different cultural provenance, underpinned by two completely disparate types of objectivism,¹² might also contribute to a better understanding of the general mechanisms of intercultural intellectual exchange, on the one hand, and the characteristics of more particular interactions between different worldviews or systems of ideas, on the other.

The scholarly and scientific importance of such discussions resides in the fact that, having been a leading figure of Chinese intellectual modernisation in the 1920s and 1930s, Zhang's ideas and worldview were of representative value for the undergoing processes of appropriation of Western ideas, both at the level of conceptual hermeneutics and that of methodological issues of intellectual adoption. In this way, the manner in which Zhang understood the Western concept of liberty and the discipline of mathematical logic is reflective of the mechanisms of intellectual adoption, which in turn have also the capacity to reveal more intricate patterns within the contemporary Chinese world of ideas on one hand as well as the epistemic and hermeneutic mechanisms with which a certain group (Zhang Shizhao 章士釗 etc.) of China's foremost intellectuals set out to decode the incoming "foreign modernity".¹³

2. Between Liberty and Order – Zhang's Idea of Liberty in the May Fourth Period (1917 – 1921)

As a member of the New Culture Movement, Zhang saw the only way to the reformation of Chinese society to be in the spirit-altering act of revolt against the mental and material confines of the old order¹⁴ and beliefs¹⁵. Imagined in accordance with the humanist ideal of spiritual freedom, which was presented to them in its various new formulations in the works of various Western philosophers – including Russell, Dewey, Bergson and others – overturning the authority of the old was seen as a natural necessity in the rational evolution of humanity, and the idea of freedom the main condition of Chinese culture's advancement onto a new plane of existence. In other words, the idea of the movement of the liberated spirit became essentially entwined with the Western

¹² Here, my treatment of the differences between "kinds" of objectivity or objectivisms is close to the approach adopted by DASTON, L., GALISON, P. *Objectivity*.

¹³ Readers less familiar with modern Chinese intellectual history should consult overview literature such as SCHWARCZ, V. *The Chinese Enlightenment*; GOLDMAN, M., LEE, L. O. *An Intellectual History of Modern China*.

¹⁴ See ZHANG, S. *Dapo xianzhuang cai you jinbu* [Progress is Possible only by Breaking the Status Quo].

¹⁵ See ZHANG, S. *Guixue* [The Science of Ghosts].

objectivist cosmologies that were being introduced into the Chinese intellectual world one after another, causing a realist notion of freedom to become synonymous with creation. By the same token, only a liberated subject was believed capable of true realisation and only the movement of the free spirit could enter into agreement with the patterns of the universe. In this regard, Zhang was no exception. In his early essays from the May Fourth period, Zhang lauded what he considered a Western “scientific” notion of liberty, whilst at the same time recognising in its attainment a significant step towards a productive harmonisation of the human mind with the primal principles (*li* 理) of the universe. Under the influence of American pragmatist ideas of liberty and education, which at the time were already flooding the Chinese intellectual world, as well as Russell’s theory of education-based social reconstruction, Zhang understood that one of the few ways to achieve the liberation of spirit and mind was through education. For Zhang, a modern, science-based education was thus the main imperative of the Chinese social revolution.

Thus, in 1919 he composed a lengthy text entitled “The New School” (*Xin xuexiao* 新學校), in which he surveyed the main characteristics of a few Western examples of psychological science-based school reforms, in particular the *école nouvelle* of the Swiss educationalist Adolphe Ferrière (1879 – 1960). In the first few lines, Zhang enunciated the main motive behind the survey in the following words:

We believe that all social reforms must be based on educational reforms. If we want people to act, we must first make them know. Regardless of what ideals we have, we can in no way force anyone into following us. We can only try to persuade, guide him to realisation, and straighten out his reasoning, so that he himself will also be capable of thinking. Moreover, his thinking will only have to be based on what is real... Things to which a single person can come to by thinking are much better from the totality of things attained by all other people. We believe that the capacity to think is the most important thing in human life. If people are capable of creative thinking and if they are able to put their thoughts into practice, in the world there is bound to be no such evil as there is today, nor will there be such unnaturalness (*bu ziran* 不自然) and discord (*wu tiaoli* 無條理). How the capacity of thinking can be bestowed upon the people is naturally a matter of education. Unfortunately, the principal duty of the established education is in preserving the original state, and its focus is on tradition and transmission and not on innovation and advancement. Those who act as teachers are all petty hegemony, ... they fundamentally misunderstand their student’s true value, which is why they always look down on them.

What they are most afraid of, what they most dread is their student's capacity to think. Since in the small groups of this school the freedom of thought has already been eliminated, how can there still be such freedom in the large groups of the future? If we, therefore, want to reform the society, we must also reform education; if to reform society we must make people capable of thinking, then we also cannot but reform education. All social reformers who are thorough realists pay much attention to education.¹⁶

In the above excerpt Zhang provided all the main ingredients of the idea of the liberation of the human mind through education reform. A similar rationale was also given in Zhang's contribution to the (1919 – 1920) debate on “Public Education for Children” (*Ertong gongyu* 兒童公育), which started in the *La Jeunesse* (*Xin qingnian* 新青年) magazine.¹⁷

For Zhang, however, freedom or liberty was not simply a matter limited to the domain of the subject, an external arrangement of the social order which enabled unrestrained motion, expression or the development of the liberated spirit. Like, for example, socialism and pragmatism, Zhang understood liberty as not only an ontologically-based categorical imperative but as a key principle within the very material texture of the universe. In his eyes, liberty was a pattern (*li*) extending throughout all layers of existence, a concurrently internal and external mode of existence accessible by reason; it is above all a “natural freedom” or “freedom of nature” (*ziran de ziyou* 自然的自由). It is thus not at all surprising that he was profoundly dissatisfied with the conventional, primarily socio-political notion of liberty that circulated in the Chinese intellectual world in the May Fourth period. At the same time, as a member of the early Chinese Communist intellectual community Zhang seems to have also been aware that the individual's liberty was to be guaranteed by social, politically established conventions and legal codifications. But his ambitious spirit could not resist taking an ambitious leap over the edge of the rather dreary socialist discourse. Under the influence of modern science, Russell's mathematical logic and philosophy, and Freud's psychoanalysis Zhang would soon distance himself from the highly repetitive Marxist discourse on class-based social history, physical labour and freedom (all ontological categories), and set out on the path of a life-long search for a synthesis between the profoundest of principles that, in his opinion, underlay or connected

¹⁶ ZHANG, S. *Xin xuexiao* [The New School], p. 3.

¹⁷ This debate was a part of a broader polemic on “Childhood Education” (*Ertong jiaoyu* 兒童教育), which took place in various periodicals devoted to the propagation of modern Western ideas on education, women's emancipation and social reform. Zhang contributed an essay which appeared in Vol. 6, No. 3 of the *La Jeunesse*.

dialectical materialism, mathematical logic and traditional Chinese ethics and cosmology.

Back in the years surrounding the May Fourth events, when Zhang was still discovering his inherent incompatibility with conventional, exclusively practical social activism, the focus of his inner eye was captivated by the wonders of human rationality, as manifested in Western science and modern philosophy. Consequently, his notion of liberty started to take on a strong positivist bent towards the so-called “patterns of human reason”. Hence, in an article entitled “The Three Freedoms to Come” (*Jiulai de san ziyou* 就來的三自由) he stressed that, aside from the three conventionally advocated freedoms of belief, thought and speech, and association, there also existed the so-called “natural freedom(s)”. As a fervent libertarian who was also familiar with contemporary behaviourism and Freudian psychoanalysis, what Zhang meant by “natural” combined both the human rational faculty and psychological drives. On the other hand, his idea of psychological-rational freedom was partly also derived from the idea of “creative impulses” proposed by Russell in his *Principles of Social Reconstruction* (1916). Thus, when he enumerated the freedom of education, labour and sexual relationship(s)¹⁸ as the three spheres of natural liberation,¹⁹ he was in fact also alluding to Russell’s scientific liberalism, socialism and the notion of sexual drive in modern psychology.²⁰ Zhang further stressed that, as forms of freedom determined by nature, they can all be established by means of some logical and psychological investigation, analysis (*jiexi* 解析) and experimentation.²¹ Collectively, he added, these three kinds of freedom can all be referred to as one “freedom of creation” (*chuangzaoxing ziyou* 創造性自由).

The profoundly positivist, yet at the same time also still inherently traditional harmonious, understanding of liberty in Zhang’s early works becomes even more

¹⁸ Zhang described sexual freedom as “the freedom harmonising instinct, intellect, spirit and progress” (ZHANG, S. *Jiulai de san ziyou* [The Three Freedoms to Come], p. 1).

¹⁹ Ibid.

²⁰ As a result of his focus on sexual freedom, Zhang devoted much attention to the idea of love as the basis of a relationship between a man and a woman (ZHANG, S. *Jiehun yu furen* [Marriage and Women], p. 1). Initially, one of his main motives behind his early obsession with sexual freedom came from his personal opposition to the traditional system of arranged marriage, which made him understand divorce and marriage by love as one of the central means of emancipation from the conservative traditional order. One of the central Western sources of ideas Zhang used in his struggle for sexual freedom were also the life and thought of Bertrand Russell (see ZHANG, S. *Nannü wenti* [The Gender Problem]). Subsequently, in the decades to follow, feminism and women’s emancipation remained one of the central themes of Zhang’s political writings.

²¹ ZHANG, S. *Jiulai de san ziyou* [The Three Freedoms to Come].

apparent in his 1919 essay “Liberty and Order” (*Ziyou yu zhixu* 自由與秩序). In this relatively lengthy essay, which was published in two parts in *The Weekly Review* (*Meizhou pinglun* 每周評論), Zhang pointed out that whereas law-based social order is artificial and easily attainable, the final destination of liberty is nature (*ziran* 自然). Consequently:

Order should be established only for the sake of liberty. Order which obstructs liberty is absolutely intolerable... Higher ideals are necessarily closer to nature (*ziran*). A system which violates against the nature cannot lead to good results. If a single person, a group of people, a race or a class are treated in a way which allows them to self-evolve and develop, if they recognise that they are assisted and not hindered, then this person, group, race or class will walk the correct path... And the whole of nature speaks in favour of this kind of treatment. Nature itself already contains laws, in it there already is order. If, instead of following nature, people want to fabricate it, correct and rectify its defects, then, although their intention may not be to commit wicked deeds, they will be bound to lose their way and ultimately bring about various kinds of unnatural discordances such as exist in the world today.²²

Written over a century ago, these words still contain some extremely pertinent points, not only for today’s Chinese but also about the global discourse on nature and liberty. Even though at the time when Zhang wrote this essay, the above-mentioned unnatural disharmonies were most probably associated exclusively with the atrocities of the so-called “Great War” (WWI), famine and outbreaks of disease in different parts of the world, in my view, this, as it were, “modern harmonious naturalism” that Zhang professed in his exposition on liberty originated from the very traditional idea of the interconnectedness of human thusness and the order of nature. While this may appear more or less obvious to a scholar of Chinese intellectual history, what is more noteworthy for the present discussion is related to the fact that Zhang probably felt a natural affinity for similar ideas propounded, for example, in the contemporary Western materialist and realist philosophy. However, even if he recognised in the teachings of Lenin or Russell a similar turn towards, as it were, “harmonistic naturalism” his early adherence to these philosophies was established on a form of analogy with his profoundly Chinese perception of notions of harmony, comprehensiveness and good in society and the universe. On the other hand, his firm belief in the capacity of Western science to unveil the very same natural principles which were referred

²² ZHANG, S. *Ziyou yu zhixu* [Liberty and Order] (Part 1), p. 1.

to in traditional cosmology-based ethics, caused him to remain in the so-called “progressive” camp of Chinese intellectuals, who did not interpret the recent failures of the Western civilisation as tantamount to the complete failure of Western science and philosophy but merely as a result of the ignorance, selfishness or moral decay of some members of its society.

This very perspective would also explain why socialism, containing the appropriate socio-historical narratives, was to gain more relevance amongst Chinese intellectuals at the very moment of China’s so-called disillusionment with Western science and civilisation. On the contrary, those Chinese intellectuals who actually showed some signs of this disillusionment and as a result became more sceptical about “things Western” probably viewed this “Western civilisation” in a much more strictly traditional manner. In that way, they understood the conduct of Western society as reflective of the same essence as contained in its philosophy and science. I believe that such conclusions emanated from the traditional Confucian ideal of all-encompassing, and at the same time strongly hierarchical, harmonic order between heaven and the “Middle Kingdom” (*Zhongguo* 中國). Because this very worldview was set within a regressive historical context, where the only possible form of the golden age had already occurred in the past and in the context of which the ideal of sage-kings was historically inseparable from the actualised golden ages of peace and prosperity, it was only logical that the goal of a universal doctrine was to reconstruct and codify the externalities of human behaviour (with reference to *li* 禮 etc.) and the internal processes of self-control and fulfilment that were required for Chinese society to return (*gui* 歸) to the mythical state of universal humaneness (*ren* 仁). Within this perspective it was incomprehensible to assume that a teaching which was able to describe the most intricate nuances of laws and patterns (*li* 理) of the material universe would not only necessarily include a moral code but even emerge in an inherently immoral society. By the same token, a few decades earlier it would be difficult for some Chinese intellectuals to understand that an immoral and not ethically superior society would be able to attain such material (technological) and intellectual (science) prosperity, with which they could not only subjugate each and every nation in the world but also transform nature itself.

Thus, in the aftermath of WWI, when the more “traditionally-oriented” Chinese intellectuals sought their modernity in a practical utilisation of Western tools and ideas for supplementing and enhancing the essentially Chinese view on life (*rensheng guan* 人生觀), the more progressive intellectuals retained their faith in a more essential integration of Western material and intellectual culture due to the influx of new social theories like socialism, pragmatism, vitalism or

neo-realism. Probably the decisive common feature of all these theories pertained to their notions of the individual and progress, which in the eyes of Chinese intellectuals completely redefined the value of things such as duty, collective behaviour, difference of identity etc. in the development of human society and the universe. While, in an ontological sense, the introduction of these new views on humanity in the 1910s and 1920s only complemented the radical changes in historical perspective promulgated by the introduction of Western progressivist notions of human evolution, one of the most impactful novelties within this new wave of modernisation resided in its radical objectivist turn inwards, which many Chinese intellectuals came to understand as a violent incursion into the sacred realm of the subjective human life (*rensheng* 人生), which was soon to be given an additional cultural dimension.

In my opinion, Zhang's notion of nature and liberty must be understood in the context of the above-described intellectual climate. Even though, like many other of his colleagues, Zhang eventually ended up choosing the middle path between Western and Chinese cultures, by trying to blend several of their aspects into one comprehensive theory, back in the late 1910s and early 1920s, when he was still in his twenties, his passion for the new and his strong propensity towards seeking the true cure for Chinese society in the deep structures of modern science still strongly outweighed his sense of balance. As a matter of fact, by imparting the conceptual connotations of the traditional notion of harmony upon similar patterns that he located in Western science, in his writings Zhang unknowingly promoted a Chinese idea of modern science. Deeply immersed in the traditional world of ideas, in his "Liberty in Order" Zhang called for the establishment of liberty on the basis of psychological liberation on the one hand and scientific method and facts on the other:

In our hope for liberty, we must first liberate ourselves on our own. Our minds, our spirits must not only become great, what is even more pressing is their liberation. Everything in our minds that confines and binds [us], the fetters of our thoughts, all need to be resolved in the first place... We can only speak about outer freedom after one has attained inner freedom. Power cannot bind us, the mythical folklore cannot bind us, the ancients cannot bind us, nor can the people of today. Habits, absurd beliefs, prejudice, bigotry all need to be rejected at all costs. We seek only truth, and we recognise only the real. [In our quest] we will set out to look upon everything, without exception, from things as large as the entire, immeasurable universe, whose size we can only roughly imagine, down to the minutest particles of matter which cannot be seen clearly not even through a microscope with the most powerful

magnification. Our method is Descartes' methodical doubt (*fangfa zhi yi* 方法之疑).²³

At the very point of introducing the scientific method as the principal means of personal liberation, Zhang could not resist making a link with traditional Chinese thought:

Confucius' four complete abstinences (*sijue* 四絕) – not to conjecture (*wuyi* 毋意), not to demand certainty (*wubi* 毋必), not to be inflexible (*wugu* 毋固) and not to be self-absorbed (*wuwo* 毋我), where “*yi* 意” means conjecturing on the basis of one's selfish intentions, an opinion conjectured in advance. It is of the same meaning as “*yi* 億” in “*buyi buxin* 不億不信” ... This “*yi* 億” cannot be interpreted as “to imagine”. The difference between predicting and imagining is that the first contains preconceived ideas and desires, while the other does not... The meaning of “*wuwo* 毋我” is not that one must not assume the existence of one's self (*wo* 我), but rather that in every matter one has to abstain from making self the master (*zhu* 主), and to abstain from making one's self as the standard of everything. When one acknowledges the existence of one's self, one has to concurrently also recognise the existence of numerous individuals in the outer world that are all identical to one's self... This is the meaning of “not being self-absorbed” – this is our spirit. We always have to set free our minds and thoughts, we have to recognise the numerous and various “possibilities” that exist alongside to the really existing.²⁴

Liberation of the mind, to which Zhang aspired, takes place in the realm of objectiveness, which can only be accessed by a less self-absorbed individuum. At the same time, however, his discovery of scientific objectivity was not essentially objectivist – that is, Zhang was not prepared to discard the subjective sphere of existence from the domain of truth in its entirety. By the late 1920s, this propensity of his became manifested first in his concept of “greater objectivism” (*da keguanfa* 大客觀法, around 1926) and later also in his theory of “pure objectivism” (*chun keguanfa* 純客觀法, around 1927), whose principal aim was

²³ Ibid., pp. 1–2.

²⁴ Ibid. (Part 2), p. 1.

to achieve a universal methodological synthesis, a unified view on reality “surpassing the dichotomy between the subjective and the objective”.²⁵

3. From Order to Harmony – Zhang’s Idea of Mathematical Logic, 1920s – 1930s

Back in the years of Zhang’s “second revolution”²⁶, when, positioned at the forefront of Beijing’s intellectual elite, he received his first significant opportunity to make a tangible contribution to the spiritual and mental liberation of the Chinese people, he was still deeply immersed in his obsessions with modern science and philosophy. In his essays from the May Fourth period his meditations on the role of science in human liberation revolved especially around the Russellian concept of mathematical logic on the one hand and modern particle physics on the other. Already a superficial reading of Zhang’s writings from the period leaves one with a strong impression of his conviction of the literal omnipotence of science and hence also its ability to “cure” all the ailments of Chinese society. Thus, in his “Liberty and Order” Zhang specifically proclaimed that:

The most modern logic (mathematical logic) can give our thoughts wings, empower our abstract imagination and equip us with a tool of possibilities never imagined before. There are more worlds than this world, and more mankinds than this mankind. To be Nietzsche’s *Übermensch* [superman] is to recognise this.²⁷

Considering the foregoing discussion, the above excerpt proclaims that wholesale personal liberation hinges upon one’s attainment of truth, reached by means of an ultimate natural principles-incorporating method, while, in turn, the latter also enkindles the inner moral fulfilment of the subject of such attainment. Most importantly, this very notion of mathematical logic was also indicative of yet another significant aspect of Zhang’s “traditional” conception of liberty and perfection, namely the belief that one’s inner liberation brought about by the above-mentioned enlightenment also possesses a proportional external,

²⁵ ZHANG, S. *Chun keguanfa* [The Method of Pure Objectivism], 57; see also VRHOVSKI, J. *Shadowlands of Objectivism and Comprehensiveness...*

²⁶ The first, in which he was not directly yet still deeply spiritually involved, was the Xinhai revolution of 1911, the first major historical event which left a deep imprint on Zhang’s libertarian identity (see ZHANG, S. *Suoyi* [Reminiscences], pp. 82–83).

²⁷ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, p. 32.

ontological manifestation. This manifestation, which is closer to a holistic notion of becoming rather than a consequence, could be compared to the Confucian idea of inner moral cultivation. This aspect is probably best illustrated in the traditional concept of the harmonious complementarity (*xiangcheng xiangfan* 相成相反) of antagonistic cosmological principles, which Zhang integrated into the majority of his early interpretations of Western scientific concepts and categories. This application is exemplified in his interpretation of “principles of numbers” and their concrete use in resolving political dilemmas. In the article “Philosophical Principles of Numbers” (*Shu zhi zheli* 數之哲理), Zhang interrelated what he understood as the dialectical principles in mathematics, the so-called “laws of numbers,” with complementary dialectical principles in nature. First, he introduces the idea of the mutual complementarity of the physical principles of the world:

In the ever-evolving world, there always exist two aspects which mutually oppose and create each other. Being mutually correlative, together they form function and variable (*han bian* 函變) ... If one progresses, at the same time the other recedes. If one is diverse and complex, the other is singular and simple. A dynamic factor has a corresponding static one. If there is a progressive aspect, at the same time there also exists a complementary conservative factor... Therefore, the method of governing the world does not go beyond harmonising and adjusting these two aspects. Following their natural posture, one will certainly attain their equilibrium.²⁸

These thoughts bring us closer to the underlying “harmonism” of Zhang’s explications and expositions on the concepts of liberty and the natural order. Thus, in Zhang’s view, be it either internal or external liberation, “natural liberation” or the liberation of one’s mind by enlightenment, each and every form of liberation is necessarily also a stride towards a universal harmony, both between the inner and the outer aspect of humanity as well as between humanity and the cosmos. Moreover, such a harmonious state was also the only ethical standard and ontological locus of liberty. At the same time, this kind of liberty was in no way a finitist concept, for the very act of “cognitive” balancing took place in an ever-changing universe, which thus required constant investigation and realignment.²⁹ Zhang believed that this universal law of perpetual change was also embodied in the principles governing mathematical equations, in particular

²⁸ Ibid., p. 18.

²⁹ This was also the point of agreement between “traditional” cosmologies and a pragmatics conception of the world.

a mathematical function. He further remarks: “Many social theoreticians are familiar with this principle, and thus say that ‘the society’s progress is nothing but differentiation and integration’”.³⁰ Whilst this may be a strong indication that, to some extent, Zhang’s ideas were already influenced by Marxist philosophy in the early May Fourth period, on the other hand, conceptual borrowings such as this were generally adapted to fit the traditional concept of dialectical complementarity (*xiangcheng xiangfan* 相成相反), harmonic unity (*tiaohe* 調和) and incessant change (*bianhua* 變化) in the universe. Thus, entrenched in the traditional cosmological perspective, in almost the same breath Zhang also postulated that, even if the universe might appear to be in a state of constant movement, never still or balanced, perceived as a whole it exists in a state of constancy. According to Zhang the same principle is amply illustrated by the fact of the consubstantiality of mathematical or logical form with the principle of harmonic balance in the universe:

Suppose that one [value in an equation] converges towards zero, and the other, at the same rate as the first one, converges towards infinity, then their product never changes, it always remains the same. In that way the world can always be at peace. This principle can be expressed with mathematical symbols: $a \cdot b = K(\text{constant})$.³¹

The most important point was that Zhang defined this principle in terms of, as it were, “mathematical logic”. Hence, when he spoke about the mathematico-logical principle of constant totality expressed by the said equation, what he probably had in mind was the concept of a universal set and the operation of “multiplication”, interpreted as the relationship of conjunction between two sets that make up this universal set.

Finally, Zhang also gave a concrete example of his understanding of the relationship of the dialectical complementarity of logic, by identifying it in the

³⁰ Ibid. By “social theoreticians” Zhang probably meant socialists or Marxist philosophers. Most notably, as a dialectical pair differentiation and integration are mentioned in Engels’ *Dialectics of Nature* and *Anti-Dühring*, where they are associated with incorporation of the dialectical principle of dynamic change from science into mathematics. In *Dialectics of Nature*, for instance, Engels said: “...the turning point in mathematics was Descartes’ variable magnitude. With that came motion and hence dialectics in mathematics, and at once, too, of necessity differential and integral calculus...” (ENGELS, F. *Dialectics of Nature*, p. 537) Differentiation and integration are mentioned also in connection with “negation of negation” in Engels’ work *Anti-Dühring*.

³¹ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, p. 18.

principle governing the processes of social dynamics and mutual interactions between different social entities.³²

If a great country wants to unite, it cannot but turn into a federation. If one wants to join something together, one cannot but make distinctions. If we want to achieve world unity, we must first side by side develop the individual and bring its pure autonomy to perfection. After the ambition of occupying [territories] has shattered, the individual will enjoy absolute freedom and become individualistic through the carrier of creation. This all follows from the everywhere-present and all-permeating principle. This is also the same as when affairs in the contemporary world are getting more and more complicated, the methods to cope with them are required to be simpler and more effort-saving. When economy is sought in the industry and economy of thought in scholarship, it is all in order to save effort and produce great achievements. It is a desire to spend as little effort as possible and reach the greatest possible profit, to achieve the efficient functioning. This is also included in the principle of the simple and the complex assisting each other.³³

Similar ideas continued to permeate Zhang's writings on social and political topics in the 1930s. An illustrative example thereof was a short article entitled "Women and Revolution" (*Funü yu geming* 婦女與革命) from 1930, where Zhang still used concepts from "mathematical logic" to expound on the predicament of Chinese women, emphasizing that a social revolution is a necessary but not sufficient condition for improving the status of women in Chinese society. According to Zhang, complete emancipation could only be achieved by means of a "natural revolution" (*ziran geming* 自然革命), which would follow the same dialectical precepts as outlined above (see Zhang 1930).

In the late-1920s and early-1930s, through a steady growth in his knowledge of Western philosophy and a gradual maturation of his early ideas, Zhang ultimately developed a more balanced and even realistic understanding of mathematical logic. While the latter retained an important place in his "comprehensive" philosophical theory, the new knowledge of its contemporary advances which Zhang acquired during his tenure as a professor at Qinghua University (1930 – 1936) enabled him to understand and define mathematical

³² Most probably, Zhang was referring to the idea of the class struggle in historical materialism.

³³ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, p. 19.

logic in more discrete and definite terms.³⁴ Concurrently, Zhang's focus also shifted from Russell to more pertinent contemporary authors such as Rudolf Carnap, Heinrich Scholz, Kurt Gödel, Jan Łukasiewicz and others.³⁵

In the context of his later philosophical meditations Zhang also developed his own notion of mathematical logic, which was modified to fit his syncretistic philosophical worldview. From the early 1930s on, the idea of a methodological synthesis of mathematical logic and the dialectical method emerged in Zhang's philosophical reflections. In these meditations, mathematical logic was represented by the concept of "logical analysis," Russell's philosophical method that, according to Zhang, was grounded mainly in mathematical logic. If in the early years, mathematical logic occupied a central position in Zhang's intellectual pantheon, by the early 1940s, however, his own idea of dialectical materialism started taking precedence. With that aim, Zhang developed a theory of "dialectical analysis" (*bianzheng jixi* 辯證解析) that was intended to incorporate a harmonic fusion between dialectical materialism and logical analysis, gradually inducing the so-called "principles of dialectics" into the very notion of mathematical logic. Ultimately (by the mid-1940s), however, Zhang

³⁴ The growth of his familiarity with the discipline can be traced via numerous reviews and introductory articles on developments in Western mathematical logic he wrote in the 1930s. Most of these papers were published in the "Intellectual Currents of the World" (*Shijie sichao* 世界思潮) supplement to the *L'Impartial* (*Dagong bao* 大公報) newspaper, the former of which was edited by Zhang himself.

³⁵ In one of his lectures delivered at the meeting of the Chinese Philosophical Society in 1935, Zhang stressed that, at the time, the world's most important philosophers were no longer Russell and Bergson, but Rudolf Carnap, a professor of mathematical logic in Prague. (MASSON, M. *Philosophy and Tradition*, p. 43) For the same reason, in the early 1930s Zhang invested a great amount of energy in studying and introducing the work of Rudolf Carnap. As early as 1931, Zhang devoted an article in *Qinghua xuebao* to Carnap's book *Abriss der Logistik* (Outline of Logistics) from 1929.³⁵ In the following two years, Zhang published two long summaries of the book *A Treatise of Formal Logic* (1931),³⁵ by Jørgen Jørgensen and *On Definition* (1931),³⁵ by Walter Dubislav. Finally, in 1935, Zhang also reviewed Carnap's book *Logical Syntax of Language* (1934). Zhang's introduction of Carnap's work was continued by Wu Hui ren 吳惠人 (Wu Enyu 吳恩裕, 1909 – 1979), another young graduate of the Qinghua department of philosophy (1933), who in 1935 published a translation of the first chapter of Carnap's book *Philosophy and Logical Syntax* (1935). Wu's translation was published under the title "Bingqi xingshangxue" 屏棄形上學 (Rejection of Metaphysics) in the *Jiaozhe yuekan* (Vol. 1, No.1: pp. 103–111; Vol. 1, No. 3: pp. 32–41). The first Chinese translation of the entire book was published in 1946. The book *Zhexue yu luoji yufa* 哲學與邏輯語法 was translated by Yin Haiguang (Yin Fusheng 殷福生) and revised by Wang Xianjun 王憲鈞.

came to the conclusion that mathematical logic was only a special case of dialectical materialism. In his book *Reflections* (*Suosi* 所思), which contained notes written between the late 1920s and 1930s, Zhang still defined mathematical logic (contemporary logic) as follows:

As stated earlier, the former logic taught people how to make inferences. Contemporary logic teaches people how not to make inferences. By having availed itself of aprioristic principles, the former logic shackled itself and obstructed its potential development. Contemporary logic is “the greatest liberator of the power of the imagination” that opened up numerous possibilities, a path of innumerable achievements and adoptable principles. This kind of logic is mathematical logic, the only logic which can solve philosophical problems, that is logical problems.³⁶

Mathematical logic retained the same universal nature also in Zhang’s later thought. In Zhang’s eyes, its direct impact on human intellectual revolution would be significantly amplified through its marriage with dialectical materialism. In this complementary amalgamation, the capacity of mathematical logic to resolve logical paradoxes would be extended to control the inner contradictions of society, consequently enabling human society to evolve to a higher level. In Zhang’s opinion dialectical materialism could further supplement “logical analysis” or mathematical logic in resolving problems related to the fundamentals of mathematics, especially where logicism (*shuli luoji hua* 數理邏輯化 “logisation of mathematical principles”), formalism (*xingshilun* 型式論) and intuitionism (*zhijuelun* 直覺論) had been unable to present any unambiguous solutions. According to Zhang, many philosophical problems could also be solved through a combined application of both logical analysis and dialectical materialism. At the same time, it appears that, in his understanding, mathematical logic completely encapsulated the deductive part of scientific method in general.³⁷ In addition to that, Zhang’s strong propensity towards harmonious comprehensiveness led him to believe that the objectivist perspective inherent in mathematical logic could be broadened through intuition, ethics and subjective awareness.³⁸

In the early 1940s, Zhang proposed an epistemological theory called concrete relativism (*juti xiangduilun* 具體相對論). In the spirit of his unceasing desire to

³⁶ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, p. 131.

³⁷ *Ibid.*, p. 178.

³⁸ ZHANG, S. *Xiandai zhexue de zhuchao* [Main Currents in Contemporary Philosophy], pp. 10–11.

peer into the tissue of the great totality beyond the horizon of the phenomenal world, he believed to have achieved in his new theory a harmonic synthesis of Einstein's Theory of Relativity, dialectical materialism, Chinese philosophy and Russell's Theory of Types.³⁹

As noted above, in the same period, Zhang's understanding of mathematical logic was also heavily influenced by his understanding of dialectical materialism. His bias towards dialectical materialism had also manifested itself in his new perspective on the evolutionary background of mathematical logic:

When mathematics advanced, logic also advanced, and there was mathematical logic, and there was the analytical method of mathematical logic, and there was the understanding of linguistic relations, there was the understanding of logical syntax... And with the rise of the dialectical method there was Russell and Wittgenstein and then Carnap and Łukasiewicz and Tarski.⁴⁰

A few lines later Zhang also noted:

Traditional Aristotelian logic is a special case of Boole and Schroeder's symbolic logic or logical algebra. Boole's and Schröder's symbolic logic or logical algebra is a special case of Frege's, Peano's and Russell's mathematical logic, as well as the logic of probability. Frege, Peano and Russell's mathematical logic and logic of probability are a special example of the dialectical method. Just as stillness is a special case of movement, velocity is a special case of acceleration, a straight line is a special case of a bent line and two-valued logic is a special case of multi-valued logic.⁴¹

The above excerpts seem to convey how in Zhang's philosophy dialectical materialism took precedence over mathematical logic and other branches of natural science. The following set of statements provides a more detailed account of Zhang's opinion regarding their relationship:

Regardless of what one claims or what teaching one pursues, one must [always] abide by practicality and facts, correctness of names (*zhengming* 正名), and base oneself on mathematical logic, the practice

³⁹ ZHANG, S. *Wo zhexue de zhonxindian...* [The Central Points of My Philosophy...], p. 10; ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 2, pp. 320–321.

⁴⁰ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, p. 383.

⁴¹ *Ibid.*, p. 428.

of analysis, strict differentiation... My faith is in dialectics. I also believe in logic, mathematical logic... I believe that the greatest essence of the dialectical method resides in liveliness (*huo* 活) and the second in wholeness (*quan* 全). While [the essence of] logic resides in expressing the form and development of all possible relations and structure... I used to believe that logic and the dialectical method were complementary (*xiangfan xiangfan* 相反相成). But nowadays I believe that logic is a special case of dialectics.⁴²

In the same reflections from the early 1940s Zhang also explicitly described mathematico-logical analysis as a method which unites physics, chemistry, biology and psychology.⁴³ Concurrently, by virtue of its correlation with modern physics he believed that the same method equips philosophy with its realism and concreteness. Although in the 1940s Zhang clearly advocated the view that “mathematical logic is a special case of dialectics”, still the superiority of dialectical materialism he envisaged was more a principal than an absolute, for at the same time he also emphasized that dialectical materialism had to be immersed in mathematical logic in order to improve its concreteness and realism.⁴⁴

4. The Harmonising Principles of Chinese Tradition: Zhang’s Idea of Humaneness and His Later Notion of Liberty

The foregoing section revealed that Zhang’s notion of mathematical logic followed a line of development which was underpinned by a traditional idea of

⁴² Ibid., p. 439.

⁴³ Ibid., p. 388.

⁴⁴ Ibid. Following the year 1936, the term logical analysis also appeared in Zhang’s writings on the so-called “new enlightenment movement” (*xin qimeng yundong* 新啓蒙運動) in China. As an essential tool of rationality, logical analysis was regarded as vital for establishing democracy, welfare and social equality.⁴⁴ By and large, for Zhang the notion of enlightenment was a historically indistinguishable part of the same evolutionary trajectory as mathematical logic. Moreover, mathematical logic was the very peak of Western enlightenment, which derived its power from the scientific method, and it was the main vehicle through which a new wave of Western enlightenment manifested itself. Finally, the notion of mathematical logic as the peak of Western science, appeared also in Zhang’s writings on the advancement of science and enlightenment in the future China from the early 1940s. See, for example: ZHANG, S. ‘*Zenyang kaizhan kexue yundong’ taolun dagang* [A Synopsis of the Discussion on ‘How to Launch a Science Movement’]; ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 2, p. 240.

binary harmonious complementarity, which only distantly resembled the Western notion of dialectics. Initially, Zhang recognised this, as it were, universal principle within mathematical logic itself, whilst in the years of his intellectual maturation the quintessential locus of the beneficial harmony, which Zhang so eagerly pursued, shifted beyond mathematical logic as such, attributing the harmonising potential to dialectical materialism on the one hand and traditional Chinese thought on the other. Hence, already in the late 1920s, Zhang saw in dialectical materialism an objective formulation of the above-mentioned principle, whilst in traditional Chinese thought – mainly cosmological and (Confucian) ethical categories and concepts – he recognised the guiding-principles that directed the subjective self in its harmonisation with objective reality and, more importantly, could guide the individual in the search for personal liberty which would not contradict the common good or material welfare of the entire society. In other words, in Zhang’s later thought, mathematical logic transformed from a universal (subjective and objective) notion into a purely methodological concept belonging exclusively to the sphere of the objective. Since, as I have indicated above, his understanding of liberty in the May Fourth period was intrinsically related to his understanding of mathematical logic, and possibly scientific objectivism in general, the later developments also entailed a reformulation of the former. Most importantly, these conceptual changes in Zhang’s thought coincided with his rediscovery of the traditional Chinese ethical concept of *ren* 仁 or “humaneness”.

Specifically, in the just-mentioned latter period of his thought, Zhang put forward two main principles: “harmony of contradictions” or “(bi)polarity of phenomena” and the “method of pure objectivity”.⁴⁵ In the introduction to his representative monograph *Reflections* (*Suosi* 所思), which was written between 1925 and 1930, Zhang pointed out that:

On the first point, the (bi)polarity of phenomena, I have already expounded on it in a publication from the beginning of 1919. At that time, I was still unaware of the nowadays widespread notion of dialectics. But, in truth, to get to these conclusions one would only need to look at the facts realistically. Besides, to speak about *yi* 易 (change) in terms of one *yang* and one *yin* is basically an extremely ancient idea espoused by the Chinese. The same idea is also equivalent to Confucius’ “humaneness” (*ren* 仁). “Humaneness” and “the scientific method”; I believe these are the two most precious things.⁴⁶

⁴⁵ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, p. 53.

⁴⁶ *Ibid.*

Furthermore, humaneness as the guiding principle of both inner and outer cultivation of a human being has found its ultimate destination in a certain form of epistemic “comprehensiveness” (*tong* 通):

I believe that “comprehensiveness” (*tong* 通) is the ultimate goal of philosophy. Analysis, pluralism, objectivity and realism all are forms of “comprehensiveness”. They are all applications of “comprehensiveness”. Conversely, “comprehensiveness” is also a complement to analysis, etc. The mutual entanglement of everything can only be comprehended through “comprehensiveness”. Only through comprehensiveness will one not succumb to rigidity (obstinacy). Only thus, one will be able to grasp two [opposite things] and employ the mean (*zhong* 中). In that way, one will be able to accumulate numerous views and recognize the reason why the obscure is hidden from one’s sight and restore each one to its appropriate position.⁴⁷

Apart from the intersubjective “mean” (*zhong* 中), in Zhang’s philosophy humaneness can also be understood as some sort of inner moral compass for fulfilling the subjective part of the methodological endeavour which Zhang referred to as “the method of pure objectivism” (*chun keguanfa* 純客觀法; 1927):

... [it] goes beyond the dichotomy between the subjective and the objective, [and at the same time remains] objective by attaching the utmost importance to objectiveness. In their basis, the subjective and the objective are antithetical; they are contrary to each other, yet they still depend on each other. We could also say that they mutually oppose and create each other (*xiangfan xiangcheng* 相反想成).⁴⁸

In other words, we could also say that Zhang’s conception of humaneness represents an inner disposition or guiding principle that enables the individual to overcome the one-sidedness of both the subjective and objective spheres, as well as the individual and communal spheres of social existence. By the same token, apart from the scientific method, mathematical logic and so on, humaneness is also the essential prerequisite for the attainment of material harmony and the prosperity of humankind.

Accordingly, in the early parts of *Reflections* Zhang also offered a new, as it were, “dichotomic” definition of liberty or freedom:

⁴⁷ Ibid., p. 54.

⁴⁸ ZHANG, S. *Chun keguanfa* [The Method of Pure Objectivism], p. 57.

Between two people there is no freedom. But what is there? There is humaneness (*ren*), compassion and harmony. There is [the principle of] not doing unto the other what you would not have the other do unto you (*ji suo bu yu wus hi yu ren* 己所不欲勿施於人) ... In that case, how can one be free? Freedom is in individualism. And how can one attain individualism? Attaining individualism is in being both aware and unaware of others. Being aware of others in such a way that you do not inflict any harm on them. Being unaware of others in such a way that you are not hindered by them. The pinnacle of individualism is the pinnacle of great unity. And the pinnacle of the great unity is the pinnacle of individualism. Therefore, this individualism is the individualism of great unification... The essence of freedom lies in independence.⁴⁹

Although humaneness is not straightforwardly tantamount to harmony, it nevertheless represents an inner moral propensity toward the unifying and harmonising mean:

A moral character (*pinde* 品德) always stands in opposition to its antithetical character. Every objective person is easily cold-hearted (callous); while warm-hearted (passionate) persons usually indulge in empty fantasies. Those who strongly cling to classics (conservatives) then easily become obstinate, while those who tend towards change also easily become frivolous. One can know humaneness (*ren* 仁) by observing excesses (*guo* 過). In the middle between good and bad one cannot tolerate outbursts (*fa* 發). Who can attain the middle way, who can attain its precise measure (*qiahao* 恰好)? Does this not lie in harmonious comprehension (*rongtong* 融通), is this not within harmonious reconciliation (*tiaohe* 調和) of contradictions, does it not reside in knowing the unceasing change of events?⁵⁰

Moreover, even though “what is called humaneness is hoping for people not to inflict harm on themselves”, because of which it is “hardly objective”,⁵¹ its field of influence extends beyond the mere domain of the subjective, for on the “fusion between humane life and science or industry produced by science” depend not only the quality but even the realism of human life and existence.

⁴⁹ ZHANG, S. *Zhang Shenfu wenji* [Collected Writings of Zhang Shenfu], Vol. 3, pp. 78–80.

⁵⁰ *Ibid.*, pp. 54–55.

⁵¹ *Ibid.*, p. 88.

All the above excerpts from Zhang's *Reflections* reveal a deep-going and persistent propensity to interpret concepts from modern Western philosophy in the context of a traditionally-coloured holistic or harmonistic worldview. Thus, Zhang constantly sought for "dialectical" relations between particular principles on the one hand and for universal laws of complementarity of antagonisms on the other. Consequently, a major theoretical focal point of his meditations lay in the attainment of the quintessential, so to speak primarily "epistemological" – in fact, such a balance would be inherently all-encompassing, that is to say also ontological, cosmological etc. – balance between the subjective and the objective, reason and spirit and so on. Not surprisingly, these epistemological shadowlands of neither subject nor object or both subjective and objective existence represented the necessary ontological nexus for a holistic system of philosophy with a strong ethical foundation, such as is generally recognized in Confucianism. Naturally, his intellectual roots caused Zhang to recognize the method for attaining such balance in traditional Chinese (ethical, epistemic etc.) concepts such as *ren* and *tong*, which he believed essential components of the only possible form of liberty an individual subject can attain. Most importantly, this kind of liberty was objectively neutral or "trans-objective", harmonizing the sphere of subjective existence with universal objective existence. Moreover, especially in Zhang's later thought (late 1930s on), the attainment of this harmonic mean was portrayed as an event tantamount to enlightenment. While, in Zhang's view, the balancing force behind the objective force remained in the domain of Western materialist science and analytic philosophy as well as mathematical logic, the main way of constructing the desired harmony from the perspective of the subjective existence was recognized in the humanistic thought (Zhang generally referred to it as a "philosophy of human life" (*rensheng zhexue* 人生哲学)) of traditional Chinese philosophy. And, finally, according to Zhang, the essence of the latter was encapsulated in the concept of *ren* or "humaneness".

5. Epilogue

The above analysis shows that in the time between the May Fourth period and the late 1930s, Zhang Shenfu's interpretations of concepts like liberty and mathematical logic were interlinked through a traditional Chinese notion of the universe and its principal structural patterns. Viewing the relationship between the inner subjective realm and external objective existence in terms of the complementarity of binary principles, Zhang's early encounters with such significant concepts from modern Western philosophy as mathematical logic were essentially underpinned by a profoundly harmonious cosmological

perspective. Concurrently, in his, so to speak, “revolutionary” intellectual ventures and philosophical reflections, Zhang gradually ascribed a greater importance to traditional Chinese humanism as manifested in Confucian ethics. In his intellectual journey from modern Western humanistic ideas to Chinese humanism, and from Russell’s mathematical logic to dialectical materialism, the conceptual framework of Zhang’s investigations remained relatively unchanged. The early propensity towards understanding concepts such as mathematical logic as having been directly descriptive of the complementarity of principles, which in his opinion underlay the entire universe, was eventually replaced by a series of methodological and epistemological perspectives in which the greatest importance was ascribed to more practical principles that could enable the attainment of the ideal mean between the subjective and objective spheres of existence. At the same time, ideas pertaining to human understanding of objective reality, such as the afore-discussed mathematical logic, became understood in an increasingly discrete and technical manner, while the practical potency which was formerly ascribed to them by Zhang became eventually attributed to concepts like humaneness, the principles of materialist dialectics, and so on.

Naturally, in modern Chinese intellectual discourse this kind of harmonistic or holistic “perception” is not unique to the thought of Zhang Shenfu, but rather represents a defining and reoccurring feature of most Chinese introductions and interpretations of Western ideas in the early Republican period. What makes Zhang’s interpretations so unique and significant is the selection of concepts and theories he chose to integrate into his philosophical thought. For instance, in the intellectual worlds of the Republican period, mathematical logic was one of the concepts most widely and unanimously associated with the most advanced modern philosophical or scientific ideas. It was probably also due to Zhang’s advocacy that, at least until the rise of dialectical logic in the early-1930s,⁵² a certain kind of positive notion of mathematical logic and “logical analysis” was also established in Chinese Communist circles. In fact, the same kind of harmonistic approach, which was based on traditional Chinese cosmology, had also persisted in Chinese Marxists’ interpretations of materialist dialectics, until in the 1930s the return of the first generation of Moscow-educated young Communists ushered in a wave of doctrinal rectification (in line with contemporary Soviet doctrine).

In this way, Zhang’s syncretistic philosophical thought played an important role in the modern Chinese intellectual’s search for reconciling a seemingly outdated traditional worldview and its humanistic foundations with the increasingly incomming objectivisms as well as modern humanistic ideas of

⁵² See VRHOVSKI, J. *A Few Important Landmarks in the Chinese Debates on Dialectical and Formal Logic...*

“Western civilisation” (*Xifang wenming* 西方文明). Moreover, his interpretations that were – probably unknowingly – steeped in the Chinese “traditional” worldview were profoundly reflective of the mechanism of the appropriation of external ideas into a culturally conditioned system of objectiveness, each defined by their own both ideal and intellectual evolutionary backgrounds. Apart from being an authentic expression of a certain integral element of Chinese intellectual history, of both individual as well as collective value, Zhang’s philosophical meditations reveal a set of key characteristics of the transcultural or trans-objectivistic transfer of ideas on the one hand, and the external objectivization of so-called “non-modern” cultural traditions by structural scientific objectivity⁵³ on the other. Most importantly, the form and manner of reasoning as provided in Zhang’s works clearly highlights the role of *analogy* in early-stage introductions and appropriations of Western scientific ideas in the developing framework of the conceptual cluster referred to as Chinese intellectual modernity. Hence, the early introductions of Western ideas to China cannot be simply regarded as examples of reflectionless emulation, but rather examples of genuine attempts at conceptualising foreign ideas in the native intellectual “scenery”. Because this quintessential use of analogy in Chinese “modernisation” might have been related to the very holistic core of traditional Chinese thought, from this point of view it is still rather difficult to infer the exact role of analogy in the phenomena of objectivist shifts (changes of worldview) and intellectual borrowing/appropriation in general. What is clear from numerous other instances is that analogical reasoning⁵⁴ represents an important mechanism for the attainment of any kind of new knowledge, both within the context of objectivisms or worldviews deemed consistent and complete (e.g. historical or ahistorical extrospective cognitive dissonance) and in the cases of learning aimed at enlightening the allegedly antiquated worldviews or systems of belief (e.g. retrospective identity-centred dissonance). In each case, the process of deciding whether and in which manner an idea ought to be accepted or rejected abides by a definite procedure (reasoning) whose mechanism is not explicitly revealed and expounded in the same process. The instances of logical, semi-logical, analogical etc. reasoning are principally disregarded on the assumption that they represent the very substance of the cluster of beliefs already deemed to be principally true, practically affirmed or already empirically verified by their manifestation in everyday life. Probably, the greatest value of the above-discussed example from the intellectual history of modern China resides in its capacity to showcase a

⁵³ See DASTON, L., GALISON, P. *Objectivity*.

⁵⁴ Although “analogical reasoning” comprises several different aspects and mechanisms, here I am specifically referring to pattern-based reasoning based on a holistically and complementarily ordered system of principles as the base-ontological pattern.

positive case of the application of pattern-seeking analogies in attaining a balanced consonance between human ethical awareness and rational knowledge about the external world, a topic of vital importance for the contemporary discourse on science and society. On the other hand, Zhang's pursuit of the foundations of individual liberty which would at the same time be based on objective knowledge, profoundly ethical and thus also optimally beneficial for all members of our societies, may also find its use in scholarly discussion focused on other than merely descriptive history.

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REFERENCES

- DASTON, Lorraine, GALISON, Peter. *Objectivity*. London, New York: Zone Books, 2004.
- ENGELS, Friedrich. Dialectics of Nature. In *Marx Engels Collected Works*, Vol. 25. Moscow: Progress, 1987. pp. 313–622.
- GUO, Qiyong. *Studies on Contemporary Chinese Philosophy (1949 – 2009)*. Transl. by Paul J. D'Ambrosio, Robert Carleo III, Joanna Guzowska, Chad Meyers et al. Leiden, Boston: Brill, 2018.
- GUO, Yiqu 郭一曲. Jiexi de bianzheng weiwu zhuyi: Zhang Shenfu de zhexue sixiang 解析的辨證唯物主義：張申府的哲學思想 [Analytical Dialectical Materialism: Zhang Shenfu's Philosophical Thought]. In *Zhongguo zhexueshi*, 2001, No. 4, pp. 79–85.
- GUO, Yiqu 郭一曲. *Xiandai Zhongguo xin wenhua de tansuo: Zhang Shenfu sixiang yanjiu* 現代中國新文化的探索：張申府思想的研究 [Exploring the New Culture of Modern China: A Study of Zhang Shenfu's Thought]. Guangzhou: Guangdong renmin chubanshe, 2002.
- GOLDMAN, Merle, LEE, Leo Ou-fan. *An Intellectual History of Modern China*. Cambridge, New York: Cambridge University Press, 2002.
- JIANG, Tao, IVANHOE, Philip J. (eds.) *The Reception and Rendition of Freud in China: China's Freudian Slip*. New York, London: Routledge, 2013.

- JIANG, Yi 江怡. Weiyena xuepai zai Zhongguo de mingyun 維也納學派在中國的命運 [The Fate of the Vienna School in China]. In *Shijie zhixue*, 2009, No. 6, pp. 6–23.
- LIN, Xiashui 林夏水, ZHANG, Shangshui 張尚水. Shuli luoji zai Zhongguo 數理邏輯在中國 [Mathematical Logic in China]. In *Ziran kexueshi yanjiu*, 1983, Vol. 2, No. 2, pp. 175–182.
- MASSON, Michel. *Philosophy and Tradition – The Interpretation of China’s Philosophical Past: Fung Yu-Lan*. Taipei, Paris, Hong Kong: Institut Ricci, 1985.
- RUSSELL, Bertrand. *Principles of Social Reconstruction*. London: George Allen & Unwin Ltd., 1916.
- SCHWARCZ, Vera. *The Chinese Enlightenment: Intellectuals and the Legacy of the May Fourth Movement of 1919*. Berkeley and Los Angeles: University of California Press, 1986.
- SHI, Mingde 時明德, ZENG, Zhaoshi 曾昭式. Shuli luoji zai Zhongguo fazhan zhihuan de yuanyin tanxi 數理邏輯在中國發展滯緩的原因探析 [An Exploration of the Reasons for the Slow Development of Mathematical Logic in China]. In *Xinyang shifan xueyuan xuebao*, 1998, Vol. 18, No. 2, pp. 29–33.
- SONG, Wenjian 宋文堅. Zhongguo shuliluoji bashi nian 中國數理邏輯八十年 [80 Years of Mathematical Logic in China]. In *Beijing hangkong hangtian daxue xuebao*, 2000, Vol. 13, No. 1, pp. 12–7.
- SU, Rina 蘇日娜, DAI, Qin 代欽. Zhang Shenfu dui shuli luoji za Zhongguo zaoqi chuanbo de gongxian 張申府對數理邏輯在中國早期傳播的貢獻 [Zhang Shenfu’s Contribution to Early Dissemination of Mathematical Logic in China]. In *Shuxue tongbao*, 2019, Vol. 58, No. 10, pp. 9–12, 19.
- SUN, Dunheng 孫敦恆. Zhang Shenfu jiaoshou zai Qinghua 張申府教授在清華 [Professor Zhang Shenfu’s Years at Qinghua]. In *Beijing wenshi ziliao*, 1988, January, pp. 30–31.
- VRHOVSKI, Jan. A Few Important Landmarks in the Chinese Debates on Dialectical and Formal Logic from the 1930s. In *Asian Studies*, 2021, Vol. 9, No. 2, pp. 81–103.
- VRHOVSKI, Jan. Shadowlands of Objectivism and Comprehensiveness: An Introduction to Key Concepts in Zhang Shenfu’s Philosophical Thought (1919 – 1948). In *Asian Studies*, 2021, Vol. 9, No. 1, pp. 227–262.
- VRHOVSKI, Jan. Zhang Shenfu – China’s First Populariser of Russell’s Philosophy and Mathematical Logic, 1920s. In VRHOVSKI, Jan, ROŠKER, Jana (eds.). *Bertrand Russell’s Visit to China: Selected Texts on the Centenary*

- of Intercultural Dialogues in Logic and Epistemology*. Ljubljana: Ljubljana University Press, Faculty of Arts, 2021. pp. 101–134.
- WEN, Gongyi 溫公頤, CUI, Qingtian 崔清田. *Zhongguo luojishi jiaocheng* 中國邏輯史教程 [Course in the History of Logic in China]. Tianjin: Nankai daxue chubanshe, 2001.
- ZHANG, Dainian 張岱年. *Wenhua de chongtu yu ronghe* 文化的衝突與融合 [Culture Clash and Cultural Fusion]. Beijing: Peking University Press, 1997.
- ZHANG, Shenfu 張申府 [Songnian 崧年]. *Chun keguanfa* 純客觀法 [The Method of Pure Objectivism]. In *Chenbao fukan* 晨報副刊 [The Supplement to the Morning Post], 1927, January 31, pp. 57–58.
- ZHANG, Shenfu 張申府. *Dapo xianzhuang cai you jinbu* 打破現狀才有進步 [Progress Is Possible only by Breaking the Status Quo]. In *Laodong jie* 勞動界 [World of Labour], 1920, June 19, p. 6.
- ZHANG, Shenfu 張申府. *Funü yu geming* 婦女與革命 (Women and Revolution). In *Zhongguo daxue rikan*, 1930, No. 3, s.d.
- ZHANG, Shenfu 張申府 [Chi 赤]. *Guixue* 鬼學 [The Science of Ghosts]. In *Meizhou pinglun* 每周評論 [The Weekly Review], 1919, No. 6, p. 3.
- ZHANG, Shenfu 張申府 [Chi 赤]. *Jiehun yu furen* 結婚與婦人 [Marriage and Women]. In *Meizhou pinglun* 每周評論 [The Weekly Review], 1919, No. 7, p. 1.
- ZHANG, Shenfu 張申府. *Jiulai de san ziyou* 就來的三自由 [The Three Freedoms to Come]. In *Beijing daxue xuesheng zhouban* 北京大學學生周刊 [Peking University's Student Weekly], 1920, January 4, p. 1.
- ZHANG, Shenfu 張申府 [Zhang Songnian 張崧年]. *Nannü wenti* 男女問題 [The Gender Problem]. In *Xin qingnian* 新青年 [*La Jeunesse*], 1919, Vol. 6, No. 3, pp. 80–84.
- ZHANG Shenfu 張申府. *Suoyi* 所憶 [*Reminiscences*]. Beijing: Zhongguo wenshi chubanshe, 1993.
- ZHANG, Shenfu 張申府. *Wo zhexue de zhongxindian: juti xiangduilun* 我哲學的中心點：具體相對論 [The Central Point of My Philosophy: Concrete Relativism]. In *Zhongxuesheng*, 1945, Nos. 91/92, pp. 10–12.
- ZHANG, Shenfu 張申府. *Xiandai zhexue de zhuchao* 現代哲學的主潮 [Main Currents in Contemporary Philosophy]. In *Qingua zhouban*, 1934, Vol. 42, No. 8, pp. 10–2.
- ZHANG, Shenfu 張申府 [Zhang Songnian 張崧年]. *Xin xuexiao* 新學校 [The New School]. In *Chenbao* 晨報 [The Morning Post], 1919, December 1, p. 3.

- ZHANG, Shenfu 張申府. 'Zenyang kaizhan kexue yundong' taolun dagang 怎樣開展科學運動討論的大綱 [A Synopsis of the Discussion on 'How to Launch a Scientific Movement']. In *Zhongguo jiaoyu*, 1941, Vol. 1, No. 8, s.d.
- ZHANG, Shenfu 張申府. *Zhang Shenfu wenji* 張申府文集 [Collected Writings of Zhang Shenfu], 4 Volumes. Shijiazhuang: Hebei renmin chubanshe, 2005.
- ZHANG, Shenfu 張申府 [Chi 赤]. Ziyou yu zhixu 自由與秩序 [Liberty and Order]. In *Meizhou pinglun* 每周評論 [The Weekly Review], 1919, No. 30, pp. 1–2.
- ZHANG, Shenfu 張申府 [Chi 赤]. Ziyou yu zhixu 自由與秩序 [Liberty and Order]. In *Meizhou pinglun* 每周評論 [The Weekly Review], 1919, No. 32, pp. 1–2.
- ZHOU, Yunzhi 周云之, ZHOU Wenying 周文英. *Zhongguo luojishi* 中國邏輯史 [History of Chinese Logic]. Volume 5: Xiandai juan. Lanzhou: Gansu renmin chubanshe, 1989.
- ZHOU, Yunzhi 周云之. *Zhongguo luojishi* 中國邏輯史 [History of Chinese Logic]. Taiyuan: Shanxi jiaoyu chubanshe, 2004.