Mathematical Interpretation of Gemeinschaftsgefühl in Individual Psychology
～ Double Limit Hidden in Gemeinschaftsgefühl ～

Manabu Matsuoka[1*]　　**Marina Bluvshtein**[2]

(Received: May 31st, 2022)

[1] Department of Core Studies, Kochi University of Technology
185 Miyanokuchi, Tosayamada, Kami City, Kochi 782–8502, JAPAN

[2] Director of Center for Adlerian Practice and Scholarship, Adler University
17 N. Dearborn Street Chicago, IL. 60602 USA

[*] E-mail: matsuoka.manabu@kochi-tech.ac.jp

Abstract: The purpose of this paper is to mathematically interpret several major theoretical concepts of Individual Psychology. Specifically, we propose that the concept of the limit is hidden in the nature and the purpose of Gemeinschaftsgefühl. Gemeinschaftsgefühl includes two types of limit ideas — the "temporal limit" and the "spatial limit". We think of these as the concept of the double limit in mathematics. This approach clarifies the mathematical aspect of Gemeinschaftsgefühl and the sense of community embedded in it. Using this integration,, we show that the concept of "civilization's permanence" can be naturally derived. By considering the double limit, it became clear that the concept of "persistence of civilization" is included in and is reinforced by the concept of Gemeinschaftsgefühl.

1. Research Purpose

Adler's Law of Movement is a fundamental law of Individual Psychology. It is similar to Newton's law of motion, but with major differences. The decisive difference is that Newton's law of motion describes an object and is objective, while Adler's Law of Movement deals with the human mind and is subjective. A person's mind is diverse and requires a delicate and uniquely individual approach.

In a previous study, Adler's Law of Movement has been discussed in Bluvshtein (2019)[3]. When Matsuoka attended a lecture by Bluvshtein on Adler's Law of Movement in Tokyo in 2019, Matsuoka realized that there was a mathematical concept of "limit" involved in the Law of Movement and related key concepts of Adler's Individual Psychology. The concept of "limit" has been developed in mathematics with the development of calculus. Calculus was discovered independently by Isaac Newton and Gottfried Wilhelm Leibniz in the 17th century. Then, in the 19th century, the concept of "limit" was developed from a modern point of view by mathematicians such as Cauchy (1821)[5] and Riemann (1868)[12]. In this way, over the last 300 years or so, the concept of the limit in mathematics has been developed and solidified.

On the other hand, the concept of "limit" contained in Individual Psychology was compiled as a dissertation with the cooperation of Bluvshtein and presented in Matsuoka (2022)[7]. In this study, we will try to further refine the content of Matsuoka (2022)[7] by further exploring the concept of the limit contained in Individual Psychology and considering both the "temporal limit" and the "spatial limit". As a result, we will show that the concept of "civilization's permanence" is naturally derived by using the double limit.

2. The Concept of Gemeinschaftsgefühl

2.1 Definition of Gemeinschaftsgefühl

The meaning of the German word Gemeinschaftsgefühl includes the integration of "community" and "sense". A community in this context, as described by Adler, represents a family, class, school, company, society, the world, the cosmos. Start with the smallest family and think about the wider community, such as classes, schools, and countries.

> Family, class, school, country ...

At this time, we place importance on having a sense of "belonging", "empathizing", "trusting", and "contributing" to the community as defining one's relationships with it and its multiple layers. The following feelings may be experienced towards the community - "a feeling of belonging", "sympathy", "trust", "sense of contribution", "empathy". Based on these, and as consistent with Adler's theory, Toshinori Iwai defined Gemeinschaftsgefühl as follows.

> "A barometer of mental health, which is a general term for feelings of belonging, empathy, trust, and contribution to the community."

There is also another approach by Noda (2016)[11]. He defined Gemeinschaftsgefühl as follows:

> We think, "What does this mean for everyone? What should I do to make everyone happy?"

Noda's action-focused definition may make it easier for the general public to practice Individual Psychology in their daily lives. When something happens to us in our daily lives, we can determine the course of action by asking ourselves as defined. In other words, you can understand that you should act in your own way based on "everyone's happiness" as a criterion. But, what happens if "I" and "everyone" are interchanged in the definition of Gemeinschaftsgefühl?

> "What does this mean to me? What should everyone do to make me happy? "

This is called self-interest. That is how, following Noda's definition, it becomes clear that Gemeinschaftsgefühl and self-interest are terms with opposite meanings. Noda, who is known as a theorist, clarified the difference by thinking about Gemeinschaftsgefühl and self-interest as a dynamic "pair" moving in opposite directions and aiming at diametrically opposite goals.

> Gemeinschaftsgefühl ↔ Self-interest

In addition, a practical study has been conducted by Nakai (2015)[8] that Noda's definition of Gemeinschaftsgefühl reflects "cooperative living."

2.2 "Expanding" Way of Thinking of Gemeinschaftsgefühl

Gemeinschaftsgefühl is a concept that spreads to involve "family, class, company, prefecture, ...", but how far will it spread? In response to this question, Adler (1973)[1] wrote as follows:

> "Gemeinschaftsgefühl extends not only to families, but to families, nations, and all humankind. Furthermore, beyond this limit, it extends to animals, plants, and inanimate objects, and finally to the universe."

The possibility of seeing human connections to the universe as unlimited was discussed by Bluvshtein (second author of this paper), Belangee and Haugen in the 2015 paper "Adler's unlimited universe."

> Revisiting and expanding on this topic we are considering the temporal dimension of the concept expanding it to include the "past," "present," and "future." In other words, the idea of Gemeinschaftsgefühl includes the desire to make all people, living things, and inanimate objects interconnected, mutually benefiting and possessing a sense of belonging in the past and future, and the present.

3. Limit Concepts Contained in Gemeinschaftsgefühl

3.1 The Concept of Double Limit

There are two types of limit concepts hiding in Gemeinschaftsgefühl. They are the limit of the spatial expansion (limit) of "family, company, society, earth, universe..." and that of the temporal expansion (limit) of "past, present, future". The spatial limit is that it spreads three-dimensionally around a certain reference point (a certain person), and the temporal limit is the past direction (*minus direction*) and the future direction (*plus direction*) starting from the present. It means a spread on the time axis. The time limit is a one-dimensional spread.

> The concepts of the limit actually represent the "ideal state". Individual Psychology focuses on the process of trying to get as close as possible to the ideal state. In mathematics as well, we may consider the limit of the

two types as follows.

- $\lim\limits_{s,t\to\infty} a_{s,t}$: A double limit with two parameters s and t.

It is the limit of the sequence with two parameters s and t, but in general, the result may change depending on the order of the parameters. However, there is also a sequence with good properties (stronger properties) that does not depend on the order of the two parameters. Because Gemeinschaftsgefühl is a universal concept, it is considered that it does not depend on the order of the parameters (interpreted as such, and we will proceed with the discussion in this paper).

For example, by changing the order in which the limits of the two parameters s and t are taken, the following two processes can be considered (generally, the two parameters can be approached in any way).

- $\lim\limits_{t\to\infty}\left(\lim\limits_{s\to\infty} a_{s,t}\right)$: For $a_{s,t}$, the limit of s is taken first, and then the limit of t is taken.
- $\lim\limits_{s\to\infty}\left(\lim\limits_{t\to\infty} a_{s,t}\right)$: For $a_{s,t}$, the limit of t is taken first, and then the limit of s is taken.

3.2 The concept of civilization's permanence

Noda raised the issue of "sustainable civilization" on his personal blog titled "Correction Term of Shunsaku Noda". His personal blog is a huge amount of diary he wrote every day in Japanese from 2001 to 2018[9]. We can find his thoughts on Adler's Individual Psychology, technical supplements, ideas, etc., which is an extremely valuable record. Currently, the "Noda Shunsaku Award Foundation Adler Institute Japan", which inherited his will, manages Noda's blog. In his blog, he feared that this world might not be a lasting civilization. For example, he said Japan is difficult to sustain into the future because it relies on oil that does not exist in Japan. He wondered if we wouldn't be a "sustainable civilization" if we weren't able to be self-sufficient in some local area.

We think of this from a limit point of view. That is, the concept of "sustainable civilization" can be naturally drawn by changing the order of the double limits. We consider an operation that changes the order of the double limit in the middle. First, we expand the parameter t to a certain area (region such as prefecture or country), and stop there. Next, we expand the parameter s in both the future and the past as much as possible to take the limit. In other words, this operation represents the permanence of civilization in a certain area, because only

time extends to the future and the past while the area is fixed. Thinking in this way, it can be seen that the concept of "permanence of civilization" is included in Gemeinschaftsgefühl.

"Sustainable civilization" is a serious problem, however Noda thought that it is difficult to achieve "self-sufficiency in a local area" in the present age of advanced political and economic globalization. In general, psychology is a discipline that studies the human mind, but by considering the universal concept of Gemeinschaftsgefühl in Individual Psychology and taking a mathematical double limit, "permanence of civilization" can be achieved naturally. This is a very interesting and hopeful conclusion, and its optimism is a hallmark of Adler's theory.

4. Conclusion

In Matsuoka's (2022)[7] previous study, the concept of mathematical "limit" included in Adler's theory was clarified. The current examination made it possible to study the concept and its implications further. Specifically, as discussed in this current study, the deeper understanding of the mathematical concepts of "temporal limit" and "spatial limit" helps to shed light to in Gemeinschaftsgefühl as a key to permanence of civilization. This recognizes that the concept of double limit is included in Gemeinschaftsgefühl. Combined with the "limit contained in virtual goals" pointed out by Matsuoka (2022)[7], we can find three types of limits in the theoretical system of Adler's psychology. These are the "limit contained in virtual goals", the "temporal limit" and the "spatial limit" — all included in Gemeinschaftsgefühl. Furthermore, by changing the order in which the limits are taken in the double limit, we may be able to see that the concept of "civilization's permanence" is included in Gemeinschaftsgefühl. The observations shared in this study highlight civilization's permanence as an important issue in Adler's psychology. Following the direction of this research, it is conceivable to further improve the theoretical system of Adler's psychology by integrating concepts of mathematics and physics.

References

1) Adler, A. (1973), Menschenkenntnis, Fischer Taschenbuch Verlag, Frankfurt (Original work published 1926).

2) Ansbacher, H. L. & Ansbacher, R. R. (1956), The Individual Psychology of Alfred Adler. Harper & Row, Publishers, Inc.

3) Bluvshtein, M. (2019), The law of movement and a metaphor of Gemeinschaftsgefühl: What is the essence of the law of movement? 2019 UK Adlerian YearBook, 91-103.

4) Bluvshtein, M., Belangee, S., Haugen, D. (2015) Adler's unlimited Universe, Journal of Individual Psychology, 71(2), 89-101.

5) Cauchy, A. L. (1821), Cours d'Analyse de l'École Royale Polytechnique; I.re Partie. Analyse algébrique.

6) Iwai, T. (2013), Courage when you are disappointed-How to spend a rainy day in your heart-(Japanese), Cosmos Library.

7) Matsuoka, M. (2022), Clarification of Mathematical Sensibilities in Adlerian Psychology, Journal of Individual Psychology, Volume 78, Number 1, 89-94.

8) Nakai, A. (2015), What is "cooperative living"? - From a survey using paper cases-(Japanese), Adlerian Vol. 28, No. 3, Japanese Society of Adlerian Psychology.

9) Noda, S. (2001-2018), Correction Term of Shunsaku Noda (Japanese), Noda Shunsaku Award Foundation Adler Institute Japan, `https://adler.or.jp/diary/`.

10) Noda, S. (2005), Passage version 1.3 (Japanese), Japanese Society of Adlerian Psychology.

11) Noda, S. (2016), Passage Plus version 2.0 (Japanese), Japanese Society of Adlerian Psychology.

12) Riemann, G. F. B. (1868), Ueber die Darstellbarkeit einer Function durch eine trigonometrische Reihe, Aus dem dreizehnten Bande der Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen.

個人心理学における共同体感覚の数学的な解釈
〜 共同体感覚に含まれる**2重極限** 〜

松岡 学[1*]   **Marina Bluvshtein**[2]

(受領日：2022 年 5 月 31 日)

[1] 高知工科大学共通教育教室
〒 782–8502 高知県香美市土佐山田町宮ノ口 185

[2] Director of Center for Adlerian Practice and Scholarship, Adler University
17 N. Dearborn Street Chicago, IL. 60602 USA

[*] E-mail: matsuoka.manabu@kochi-tech.ac.jp

要約：本研究の目的はアドラー心理学の主要な理論的概念を数学的に解釈することである。具体的には、共同体感覚に含まれる本質的な性質を極限の概念で解釈できることを提案する。共同体感覚には、「時間的極限」と「空間的極限」の 2 種類の極限が含まれ、これは数学の二重極限の概念と解釈することができる。これにより、共同体感覚の数学的側面が明らかとなる。また、この考え方から「文明の永続性」の概念を自然に導き出すことができることを示す。すなわち、二重極限を考慮することにより、「文明の永続性」の概念が共同体感覚の概念に含まれることが明らかとなる。