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## 【資料】

# An Overview of Development in College Students Based on the Theory of Hierarchies and Stages on the Reversible Operations in Human Development

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## Introduction

### *Purpose*

This paper gives an overview of development in college students according to the theory of hierarchies and stages on the reversible operations in human development (THS). THS is a grand theory of human development, primarily constructed by Masato Tanaka (1939–2005), a Japanese researcher in human development.

Although THS is widely used as a foundational theory of developmental diagnosis in Japan, especially in the western part of Japan, it is little known elsewhere, as works on THS tend to be written in Japanese. As the current trends prevailing for young Japanese researchers require them to write papers in English, it is necessary to first create an environment for proceeding with developmental research on THS in English.

Although many of Tanaka's published studies are on child development, he also addressed college education and evaluation, as well as the development of adolescents and young adults (e.g., Tanaka, 2005ab; Tanaka & Ishizaki, 2005), in his final years. There are many implications for adolescent and adult development in THS. Because THS integrates cognitive developmental theory and personality developmental theory into a holistic explanation of lifelong human development, it incorporates the meaning of college and university education in holistic human development, whereas higher education is often discussed only in regard to the improvement of student job performance. If Tanaka's studies could be followed up by young researchers, new discoveries and significant implications could be achieved in college student development.

### *Three Topics of This Paper*

This paper gives a brief outline of college students' development from the point of view of

THS. The essential points of THS, the developmental process of teenagers and young people in their twenties, and important points for college students' development and education are explored.

## **The Essence of THS**

THS is a large theory and contains much. We can indicate its essence in five points.

The first is Tanaka's conception of reversible operation. Tanaka expanded Piaget's conception of reversible operation, defining it as a fundamental unit of function that works on the environment and transforms both the environment and itself. Reversible operations may produce human development for entire lifetimes.

The second is that human development can be divided into six hierarchies, each of which has its own reversible operation. Additionally, there are four stages in each hierarchy: three stages of the advancement of a reversible operation and a stage of exponential transition to a new hierarchy.

The third is that the processes of a reversible operation produce a new reversible operation that has a different quality and initiate the developmental process in a new hierarchy. When a transition to a new developmental hierarchy occurs, a new reversible operation comes to play a key role in developmental progression. However, the emergence of the new operation can be found before the transition as a new driving force of development. A new driving force of development emerges around the beginning of the third stage of reversible operation in each hierarchy.

The fourth is that the developmental foundations of personality (DFP) are generated after birth and have an interactive relationship with reversible operations. When the new driving force of development emerges and begins to work on the environment, the new DFP are generated, enlarged, and enriched. Enriched DFP supports the growth of a new driving force and aids in the transition to a new developmental hierarchy.

Last, the developmental model of THS (e.g., Figure 1) shows an implicit possibility of human development. Human development requires an appropriate education, employment, and other types of participation in social activities. Especially after adolescence, people are likely to face difficulties in their development because of the lack of a chance to study and a decent work environment.

## **Development of Teenagers and Youth in Their Twenties According to THS**

*Outline of Hierarchies of Transformation, Abstraction, Creation*

Figure 1 shows the outline of development for a person from ten years old to the end of his

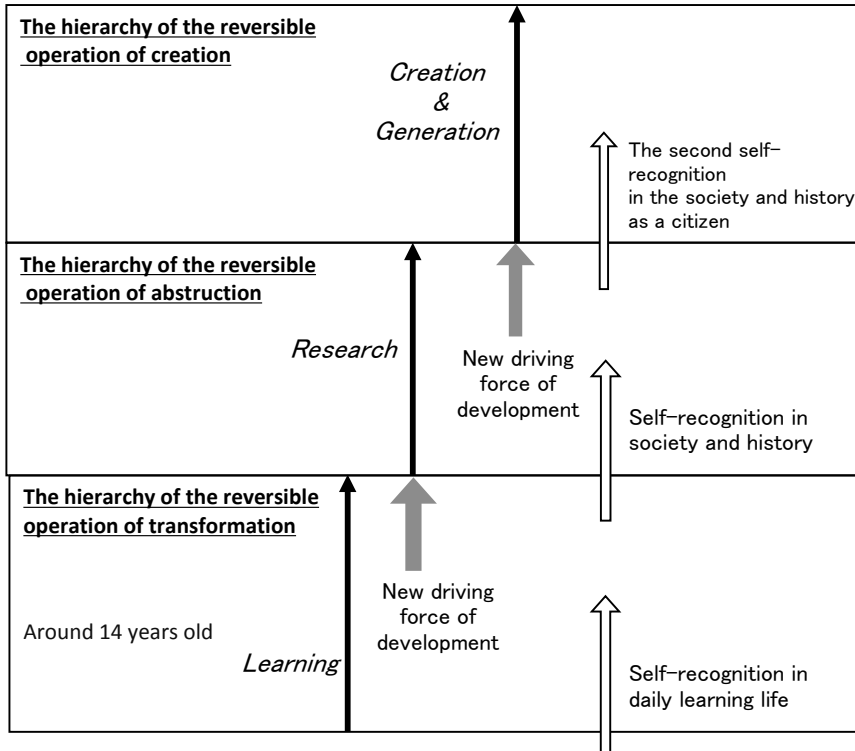


Figure1. Outline of three thierarcies of human development in adolescents and young adults

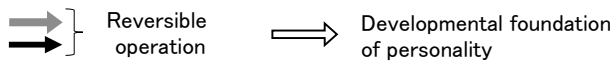


Figure 1 is to be inserted around here.

or her twenties. In Japan, currently almost 80% of high school students enter higher education after graduation. The developmental situation of most students in colleges and universities is illustrated by Figure 1.

*Three hierarchies:* Adolescence corresponds to the bottom layer of Figure 1, *the hierarchy of the reversible operation of transformation*. This begins around the age of ten. Children begin to use abstract codes shared in society. In Tanaka’s work, the reversible operation of transformation is comparable to Piaget’s concrete operation.

The transition to the *hierarchy of the reversible operation of abstraction* occurs at the end of the teenage years. This transition is the first developmental task after entering higher education. The reversible operation of abstraction enables young people to work out things comprehensively and receive new visions and prospects. When young people enter this hierarchy, they are able to relativize their knowledge and worldviews.

*The hierarchy of the reversible operation of creation* begins in a person’s late twenties. The reversible operation of creation enables the creation of new ways of thinking and working in the

present society. It also enables cooperation among people with diverse background.

These hierarchies can also be understood as follows. Adolescents, in the hierarchy of transformation, *learn* about human beings, society, history, and nature. Young adults, in the hierarchy of abstraction, *study* human beings, society, history, and nature, relativizing what they have learned. Young people in the hierarchy of creation *create* and *generate* new ways of thinking, working, and living by gathering together what they have learned and studied.

#### *Protecting Their Own Development and That of Their Peers*

Tanaka held that, at around fourteen years old, adolescents come to be able to protect their own development and that of their peers, and that they should have the opportunity to study their own development (e.g., Tanaka, 2002). Learning development includes learning the conception of development, the mechanism of development, and the historical change in human development. This knowledge helps young people to recognize their situation and the problems that they face; they require adequate and decent learning and living environments to protect and promote their own development.

Requiring adequate learning, working, and living environments lead to development of citizens. Current society has many problems to be solved if we are to secure the right to development for all people. Development as a citizen is an essential aspect of development after adolescence.

### **Points of Development in University Students**

Four points can be identified in the development of university students. First, as most students in Japanese universities are from 18 to 23 years old, college students appear to be in the final phase of the transition to the hierarchy of abstraction. After this transition, the *reversible operation of abstraction* begins to play a central role in promoting development. According to THS, the pristine function that becomes the reversible operation of abstraction emerges around 14 years old and is the new driving force of development (e.g., Tanaka, 2002). It is very important to support this new driving force during the teenage years. Studies of college students' development should also pay attention to the development of students in secondary education.

Second, the new quality of DFP is generated and enlarged around 17–18 years old. *The second objective way of recognizing oneself* comes into effect. The second objective way of recognizing oneself means considering oneself in a wider social and historical context, whereas *the first objective way of recognizing oneself* means recognizing oneself only in daily life. The new driving force of development that emerges at age 14 widens the range of interest and promotes the motivation to know new things, enabling adolescents to consider themselves in a

wider horizon.

One example could be given here. Two women, Kinu and Keiko, appear in the autobiographical novel *A Straight Road* by Hideko Maruoka, a Japanese feminist activist and researcher. It is set in the late 19th century. Kinu is the mother of Keiko. Kinu and those around her consider her a good hard worker. She gets married at 19 years old. Her husband is the son of the owner of a large vineyard, where many workers live together. Kinu has a great deal of work, because she is required to take care of her husband's father, young brothers, young sisters, and the workers, in addition to which she must perform a huge amount of work in the vineyard. Kinu dies of overwork when her only child, Keiko, reaches one year old.

Keiko grows up with a sense of a strangeness regarding her father's words. He often tells her that a woman's task in life is to become the wife of a man chosen by her parents. Keiko studies literature and history with her schoolmates and makes up her mind when she graduates high school to go to a teachers' college to become economically independent, so that she can live a life unlike her mother's. She regards the way of life she chooses as the life that her mother really wanted to live.

Keiko sees herself in the second objective way, whereas her mother, Kinu, sees herself in the first objective way. Kinu does not have a chance to enjoy more than primary education. Keiko learns that there are many ways a woman can live, although most of them require her life to be suppressed, and she decides to try to find a way in which she can live her own life.

The third point in the development of college students is that *the change of interaction with others* enhances the developmental transition to the hierarchy of abstraction. According to Nakamura (2014), an important original insight of THS is the attention it pays to changes in interaction with others. After the transition to a new hierarchy occurs, developmental processes do not reverse. This non-reversibility is supported by changes in the ways of interactions. For example, before the transition from the infant period to childhood, a baby usually interacts emotionally with his or her caregivers. When the transition approaches, the amount of verbal interaction increases. Children come to largely interact verbally after the transition. This change of the main way of interacting with others prevents developmental processes from reversing and returning to the former hierarchy.

In university learning, students are required to use a new way of communication in class. There are students who have different backgrounds and interests, so a so-called public style of communication must be used (Mizokami, 2014). A public style of communication can be contrasted with a familiar style of communication. A familiar style of communication is valid in conversation with familiar friends and classmates; it is often used in high school classrooms. Being in an environment requiring the use of a public style of communication facilitates a change in the style of interaction and the transition to the new hierarchy is enabled.

Fourth, an emergent symptom of the transition toward the hierarchy of creation is found in

the later years of college life. The full-scale initiation of the hierarchy of the reversible operation of creation occurs after graduation; however, university education should try to prepare the birth of the pristine function of the reversible operation of creation.

### Perspectives for Future Research

This paper noted some points in the development of late adolescents and young adults, as well as of college students. Though the warrants for the points outlined could not be fully explained in this paper, they are given by Nishigaki (2014, 2016a). However, Nishigaki (2014, 2016a) regard the collection of empirical evidence on the developmental process of young people from their late teens to their twenties as an urgent task for future research.

Nishigaki (2016b) suggests that the change in the recognition of students in learning and studying should be investigated, because it is an indicator of transition in the hierarchy of reversible operations of abstraction. Nishigaki (2016b) also suggests that we should gather the voices of students who stand up for more decent learning and working environments. There is much written by people who support young people, but few documents written or told by students themselves have yet been published.

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## 要旨

階層－段階理論は発達診断の基礎理論として日本では広く使われているが、海外ではほぼ知られていない。今日の日本の若手研究者は、英語で論文を書くことが必須事項と言ってよい状況にいる。階層－段階理論を若い世代に引き継ぎ発展させるためには、彼女・彼らが階層－段階理論を使って研究し、それを英語で発信できる環境を整える必要がある。

そこで本稿は、階層－段階理論に従って大学生の発達を英語で概説した。階層－段階理論は、認知発達と人格発達を統合して人間発達をとらえようとする理論である。田中昌人は晩年に、大学評価や大学生の発達保障の問題に精力的に取り組んでいたが、階層－段階理論を使えば、大学教育の意義を人間発達に位置付けて説明しうると思われる。

本稿は主に3つのパートからなる。第1部では階層－段階理論の基本事項として、(1)可逆操作の意味、(2)発達における6つの階層の存在、(3)可逆操作によって新しい質の可逆操作が生み出されること、(4)人格の発達の基礎と可逆操作の相互作用、(5)階層－段階理論が示す発達モデルは、人間発達の潜在的可能性を示すものでもあること、の5点について説明をした。

第2部では10～20歳代の特徴として、(1)変換・抽出・創出の3つの階層を進んでいく時期であること、(2)自分自身と仲間の発達を守れるようになることの2点を挙げた。また発達について学ぶことは、青年が自分と仲間のために尊厳ある学習や労働、生活環境を要求していけるようになることを促すことにも触れた。

第3部では大学生の発達の特徴として、(1)抽出の階層への移行が完了し、14歳ころに誕生する生後第4の新しい発達の力が抽出可逆操作として発達を主導するようになること、(2)第2の自己客観視が成立していくこと、(3)交流の手段の変化が生じることで階層間移行が完成していくこと、(4)創出可逆操作のもとになる力の萌芽がみられることの4点を示した。

(にしがき じゅんこ)