Abstract

This paper attempts to introduce a theoretical framework for the study of natural and acquired elements in the trait of political leadership by the typological and the mathematical models. It is necessary to perform the study of political leadership in the direction where the trait approach and the behavioral science approach are integrated. And, it returns after all in the trait approach that is the source of the man behavior. Political leader’s trait is composed of the natural elements and the acquired elements. There are three kinds of political leadership of the creative type, the administrative type, and the symbolic type when thinking from the natural elements. It depends which type is suitable on the situation of the environment that surrounds the political leader. The element that a political leader acquires is the intellect and the virtue when thinking from his acquired elements. These elements can be promoted by the political leader in his effort. However, there is a limit. Especially, the restriction is received according to cost of the age, the educational background and the social experiences. Because it depends whether a leader’s trait is suitable for a political leader on the environment that besieges him, the future perspective is necessary to choose a political leader of a suitable trait with an accurate analyze the present state concerning the nation, the society and the international politics.

Key Words: Leadership, Political Leadership, Trait Approach, Political Science, International Political Theory
1. Whereabouts of Problem

(1) Trait Approach and Behavioral Science Approach

The purpose of this thesis is to construct the theory of political leadership by the trait approach of natural and acquired elements.

Traditionally, there are two kinds of methods of analyzing the leadership if it says generally. First, it is a method of paying attention to leader’s trait, and a method of paying attention to the leader’s behavior in second. It is thought that the former is chiefly study results of the Historical Science and Political Science, and the essence of the leadership is leader’s trait (1). It is thought that the latter is chiefly study results of the Social Psychology and Business Administration, and that the essence of the leadership is the leader’s behavior and elements of his environment (2). The research of both parties has developed independently up to now. Therefore, recognition only that the essence of leadership is either the trait or the behavior exists in the assumption. It is a mutually exclusive dichotomy discussion.

However, the feature of the behavior of a certain person depends on person in his character. Especially, the human elements greatly influences political leadership. Because it is an exercise of public power, and the influence is immediate (3). Therefore, when political leadership is researched, it is necessary to integrate the trait approach and the behavioral science approach. And, it is consolidated in the research of the nature after all.

By the way, political leader’s trait is composed by the natural or inherent elements and the acquired element. The former is a primary element that the leader possesses in inborn. The latter is the second element that he acquires by the growth process. First of all, the primary element in political leader’s trait are examined in this thesis. Because it is a natural element that man has in inborn, political leader’s primary element is difficult to change by the person in his effort. Second, the intellect and the virtue or moral character that is the second element in political leader’s trait are examined in this thesis. Because the leader acquires it by the growth process, these elements can be cultivated by his effort. Oppositely, if he doesn’t make an effort, it is the one that cannot be cultivated.

(2) Political Leader As a Leader of Nation and the Others

By the Way, we always want to know what kind of trait is suitable for the political leader. When thinking about this problem, an effective concept is a conversation with the realism. Mental operations of conversation with realism are the behavioral principles located at the center of the thought process that we frequently do in daily life. The judgment standard of various elements concerning a perception about the present state of affairs and an intellectual groping of realizability is entirely almost put on this principle.
However, this conversation casts a spell on the possibility of a free conception at first of the process where man embraces the dream and hope. And, it gives birth to the tendency to lead our idea to a realistic judgment and the conclusion. Therefore, the problem is to limit this conversation to the time-space of which extent. That is, it is a distinction concerning the extent.

If this conversation is neglected in excess, the dream only becomes fantastic. It misses reality. Oppositely, hope degenerates into passion if dragged to this conversation in excess. It is made to wear-out actually depending, and misses the charm. The dream of disregarding this conversation becomes a mere imagination. The reality is not there at all. Oppositely, hope of doing this conversation too much becomes hesitant mere. It rubs, and is not attractive.

By the way, the politician is an occupation to have to note that this conversation doesn’t become excessive. On the contrary, the bureaucrat is an occupation to have to note that this conversation doesn’t become shortage. It is a fact that the most serious problem is duties from which the fight with an opposite vector has been forced on both. Both are the occupations of a fundamentally different character. As for this respect, a suitable trait for the politician is a bureaucrat and an opposite skill. Oppositely, a suitable trait for the bureaucrat is a politician and an opposite skill.

Therefore, we can point out contradiction and the danger of the parliamentary cabinet system. The necessity for discussing the difference between the idea and the action of both the bureaucrat-turned politician and the party politics person can be seen at the same time.

But, there is a factor to aggravate the problem. It is that it is very difficult whether to distinguish the party politics person or the bureaucrat-turned politician. In general, the politician in Japan thinks that there are two kinds of the party politics person who has walked on politician’s road as a political party person of the bureaucrat-turned politician and genuine that became a politician through the bureaucrat experience.

However, a difficult present position to distinguish of both has increased rapidly in the politician in present age Japan. Originally, both should equiponderate moderately by a historical, geographic time-space situation. Because the former is a person who has a creative nature, it is a subject of a reformative activity that asks right or wrong of the frame of the society. But the latter is a person who has an administrative nature. And, it is a subject of a conservative activity that asks the policy in the frame of an existing society.

Therefore, it is necessary to perform the research of political leadership in the direction where the trait approach and the behavioral science approach are integrated. And, so it returns after all in the trait theory that is the source of the man behavior.
2. Modeling of Political Leadership by the Natural Elements

(1) Natural Elements and Acquired Elements

In general, according to the kind of the character as a primary element, a political leadership can classify it into three types of the creative type, the administrative type, and the symbolic type. The creative type leadership is a type with an effective ability for new development of the system and the construction task of the nation. The administrative type leadership is a type with an effective ability for efficient management of operation and the nation of an existing system. The symbolic type leadership is a type with an effective ability in the mature country and the society in the process of establishing traditional sense of values and the loyalty (Refer to Diagram 1).

C-Type (Creative Leader)

M-Type (Administrative Leader)

S-Type (Symbolic Leader)

Diagram 1: Model of Structure in the Ego States and Three Types of Political Leadership

Creative type leader’s ability is effective in work to establish a new system. On the other hand, administrative type leader and symbolic type leader’s abilities are effective in work to manage efficiently and stably of the system made by the creative type leader. At the revolution or reform period, and the developing or flourishing period, the stability period, three types are
types of the leader who has each aptitude. Therefore, the order of succession to the creative type, the administrative type, and the symbolic type is preferable and natural.

Moreover, it is thought that three types of the above-mentioned leader correspond to three character elements of the Egogram (Model of Structure in the Ego States) of the Psychoanalysis and the Social Psychology \(^{(4)}\). It is a child, an adult and parents. The element of creativity is closely related to the sensibility where the child embraces the dream. Moreover, the administrative element is closely related to the sensibility that the adult manages the surrounding environment stably and efficiently. In addition, the element of the symbolic character is closely related to the sensibility where parents exist as a base of trust from the child. Therefore, leader's type can be distinguished by this model \(^{(5)}\).

One man has the character that combines these three elements at various rates. In the same way, one political leader has the character that combines these three elements at various rates. However, it has a lot of elements of own type though a political leader of each type has the elements of other types \(^{(6)}\).

Here, it formulates it for purposes of accuracy \(^{(7)}\). PL is assumed the power of political leadership, B is assumed the behavioral element of political leadership, T is assumed the trait element of political leadership, N is assumed the total of the natural elements of political leadership, A is assumed the acquired elements of political leadership, C is assumed to be an elements of a creative type leader, M is assumed to be administrative type leader's element, and an element of C is assumed to be an element of a symbolic type leader, PLT is assumed the type of political leadership. PLS is assumed the total power of political leadership skill, and the following equation can be set if it does so.

\[
PL = B + T \\
T = PLT + PLS \tag{2-1} \\
PLT = f(N) \tag{2-2} \\
PLS = f(A) \tag{2-3} \\
N = f(C, M, S) = a(C) + b(M) + c(S) \tag{2-4}
\]

\(a\) : Coefficient of C  \\
\(b\) : Coefficient of M  \\
\(c\) : Coefficient of S

Let's call (2-4) “Political Leadership Function (Structure Version)”. Coefficient a, b and
c show the proportion of each element in the character. Therefore, this can be distinguished by the Egogram\(^{(8)}\). And the following condition is inevitably necessary for this equation.

\[a + b + c = 1\]

Moreover, the type of each leadership is defined by the following inequality.

- C-Type: \(a > c > b\), \(a > (c+b)\)
- M-Type: \(b > c > a\), \(b > (c+a)\)
- S-Type: \(c > b > a\), \(c > (b+a)\)

### (2) Three Types and Their Succession of Political Leadership

These three types are patterns of each leader's political nature. It does not mean the superiority or inferiority. Moreover, which type of political leader is fit? It depends on the environmental factor like the age and the situation of the country and the society. Various evils gush to the nation and the society when the leader of the type not suitable for the construction or environment appears one after another. When a current discussion is brought together, it becomes it as follows. In a word, it is thought that creative type leader's aptitude is an age of the construction or reconstruction of nation. It is thought that administrative type leader's aptitude is an age of development. It is thought that symbolic type leader's aptitude is an age of stability\(^{(9)}\).

Because today is the age when Complex Interdependence is deepened and expand, the situation of international relations of today is related to the stages of rise and fall of the hegemony system\(^{(10)}\). Therefore, here, the movement related to international relations was expressed in that (Refer to Diagram 2)\(^{(11)}\).

![Diagram 2](attachment:image.png)

**Diagram 2:** Transition of International Relations, Development Stages of National System and the Succession of Three Types of Political Leadership

A : Alternation or reconstruction period of hegemony system  
B : Development period of hegemony system  
C : Mature period of hegemony system  
a : Construction or Reconstruction Stage of national system  
b : Development stage of national system  
c : Mature stage of national system
3. Modeling of Political Leadership by the Acquired Elements

(1) Intellect and Virtue

This chapter examines intellect and virtue or moral character that is the second elements that composes political leader's trait. These elements are concepts to compose political leader's capability of skill. Moreover, it is these elements acquired by the process to which a political leader grows up. Therefore, it is the one that can be cultivated by the person in his effort. It is the one not cultivated easily without the person in his effort if it says oppositely.

First of all, the intellect is knowledge, a technique, and the skill that the leader acquires by the process of growth. And, it is up to knowledge concerning necessary social efficiency for the duty accomplishment as the politician. For instance, it is a capability of the group management, an ability of the problem recognition, a talent of the policy making, an ability of the logical thinking, and power of expression of the own view insistence. An effort necessary to promote this ability is study, an exposure to life, and his home environment of the Social Science and the Natural Science.

Next, the virtue or moral character is a benevolence, a character, and the skill that the leader acquires by the growth process. And, it is an ethical sense of the social justice necessary for the politician. For instance, it is a spirit of the idea of reason for the feelings control and a social public welfare and the relief for the weaks and the benevolence philanthropies, and the consideration of the self-sacrifice. An effort necessary to acquire this ability is study, an exposure to life, and his home environment of the Social Science and the Science of Humanities.

By the way, the element like the intellect and the virtue can be increased to a constant level by the political leader's effort. But, these have a limit. Therefore, it is a curved surface that takes “maximum value”, and it is possible to formulate it mathematically.

It formulates it for purposes of accuracy. First of all, A is assumed the total of political leader's acquired elements, I is assumed to be political leader's intellectual elements, V is assumed to be political leader's character elements, and these are assumed to be an independent variable mutually, the following equation is obtained if it does so.

\[ A = f(I, V) \]  

Let's call (3-1) “Political Leadership Function (Skill Version)”.

(2) Maximization of the Acquired Elements in Trait of Political Leader

The intellect and the virtue can be increased to a constant limit by the leader's effort. However, there is a limit in it. Therefore, it is taken the maximum value, becomes a curved
surface, and can be formulated mathematically. To expect accuracy again, it formulates it. I is assumed to be political leader's intellectual elements, V is assumed to be political leader's moral character elements. The relation of these elements is learnt from standard vintage "Production Function" in the Microeconomics theory and it makes it to specific, the following equation is obtained if it does so(12).

\[ A = f(I, V) = I^a \cdot V^b \]  

(3-2)

It partial differentiates as for this function. It becomes the following if it does so.

\[ A' = \frac{\partial A}{\partial I} = V^b \cdot aI^{a-1} \]

\[ A' = \frac{\partial A}{\partial V} = I^a \cdot bV^{b-1} \]

Therefore,

\[ aI^{a-1} \cdot V^b = 0 \]  

(3-3)

\[ bV^{b-1} \cdot I^a = 0 \]  

(3-4)

Because the curved surface of a convex type that has the maximum value is assumed here as already described, the above-mentioned discussion is formulated more generally. This time, the standard by which whether it is the maximum or is either minimum is distinguished is derived (Refer to Diagram 3).

Diagram 3 : Function of Political Leadership (Skill Version)

PLS : Political Leadership Skill
A : Acquired Elements
I : Intellect Elements
V : Virtue Elements
(3–3) is \( \frac{\partial}{\partial I} \), (3–4) is \( \frac{\partial}{\partial V} \), these are the first partial derivatives of I and V. As for I and V, it is partial differentiate again. It becomes the following if it does so.

\[
\frac{\partial}{\partial I} \left( \frac{\partial A}{\partial I} \right) \quad \text{or} \quad \frac{\partial^2 A}{\partial I^2} \\
\frac{\partial}{\partial V} \left( \frac{\partial A}{\partial I} \right) \quad \text{or} \quad \frac{\partial^2 A}{\partial V \partial I} \\
\frac{\partial}{\partial I} \left( \frac{\partial A}{\partial V} \right) \quad \text{or} \quad \frac{\partial^2 A}{\partial V \partial I} \\
\frac{\partial}{\partial V} \left( \frac{\partial A}{\partial V} \right) \quad \text{or} \quad \frac{\partial^2 A}{\partial V^2}
\]

These are the second partial derivatives. Moreover, (3–5) and (3–6) are the intersection derived functions. If both are continuous, the following are approved by the Young's theorem. And, the maximum or the minimum can be distinguished.

\[
\frac{\partial^2 A}{\partial V \partial I} - \frac{\partial^2 A}{\partial V \partial I}
\]

Therefore, the maximal condition is the following.

\[
\frac{\partial^2 A}{\partial I^2} < 0 \quad \text{and} \quad \frac{\partial^2 A}{\partial V^2} < 0 
\]  

(3–7)

Next, the minimal condition is the following.

\[
\frac{\partial^2 A}{\partial I^2} > 0 \quad \text{and} \quad \frac{\partial^2 A}{\partial V^2} > 0 
\]  

(3–8)

If the following as the extreme value condition are added to this, it is proven to be an extreme.

\[
\frac{\partial^2 A}{\partial I^2} \cdot \frac{\partial^2 A}{\partial V^2} > \frac{\partial}{\partial V} \left( \frac{\partial A}{\partial I} \right)^2
\]  

(3–9)

If above expression (3–7), (3–8) and (3–9) is approved at the same time, it becomes the maximum or minimum^{13}.

(3) Model by Whom Limiting Conditions Was Added

By the way, the intellect and the virtue are expected to receive the restriction to political
leader’s age and income. The size of the intellect and the virtue changes because of the political leader’s making to the age and the expansion of the educational background. Therefore, these are factors that should be called cost\(^{(14)}\).

Here, it is assumed that a political leader is a reasonable doer. In that case, the effort to increase two elements of the intellect and the virtue by the small expense as much as possible will be made. In addition, it costs the cost of time, study, and the experience, etc. so that a political leader may acquire these elements. Therefore, these become elements restricted by his income. Therefore, the target function is assumed to be political leadership function (skill) here, and the limiting condition is assumed to be a cost function. And, the maximum problem of “Lagrange Undecided Multiplier Method” can be set.

I is assumed to be an intellect, V is assumed to be virtue and C is assumed to be full costs. Next, \(\gamma\) is assumed to be cost of the intellect increase and \(\omega\) is assumed to be cost of the virtue increase. These are assumed to be a mutually independent variable, and the following can be set if it does so.

Target Function : \(A = f(I, V)\)

Limiting Condition : \(C = \gamma I + \omega V\)

When the expression of the above-mentioned limiting condition is operated, the following are obtained.

\[C - \gamma I - \omega V = 0\]

Following Lagrange Function can be set if it does so.

\[\Lambda = f(I, V) + \lambda (C - \gamma I - \omega V)\]

It partial differentiates it as for \(I, V,\) and \(\lambda\). Because the C is a constant, the partial derivative becomes the following.

\[\frac{\partial \Lambda}{\partial I} = \frac{\partial f}{\partial I} - \lambda \gamma\]  \hspace{1cm} (3-10)

\[\frac{\partial \Lambda}{\partial V} = \frac{\partial f}{\partial V} - \lambda \omega\]  \hspace{1cm} (3-11)

\[\frac{\partial \Lambda}{\partial \lambda} = C - \gamma I - \omega V\]  \hspace{1cm} (3-12)
Because a general discussion is assumed here, Political Leadership Function (Skill) is not made specific. Then, an increase in the intellect when about one unit of cost is increased and an increase in the virtue are made the following (so-called marginal productivity if it says by the Microeconomics term).

\[ f_i = \frac{\partial f}{\partial I} \quad (3-13) \]
\[ f_v = \frac{\partial f}{\partial V} \quad (3-14) \]

If each formula above-mentioned (3-13) and (3-14) is substituted for each formula above-mentioned (3-10), (3-11) and (3-12), following (3-15), (3-16) and (3-17) are obtained. It only has to solve these simultaneous equations.

\[ f_i - \lambda \gamma = 0 \quad (3-15) \]
\[ f_v - \lambda \omega = 0 \quad (3-16) \]
\[ C - \gamma I - \omega V = 0 \quad (3-17) \]

As a result of the above-mentioned operation, following (3-16) is obtained.

\[ \lambda = \frac{f_i}{\gamma} = \frac{f_v}{\omega} \quad (3-18) \]

As a result, (3-18) of a limit increase in \( \lambda \), the intellect and the virtue and those each cost consists. Therefore, (3-18) and (3-17) are conditions of maximization with the restriction.

In addition, when the kind of the element that composes the intellect and the virtue is many, it becomes it as follows. First of all, the amount is assumed to be \( q_1, q_2, \ldots, q_n \), and the cost is assumed to be \( c_1, c_2, \ldots, c_n \). Political Leadership Function (skill) becomes PLS = \( f (q_1, q_2, \ldots, q_n) \) if it does so. And, if a marginal increase in each element is assumed to be \( f_1, f_2, \ldots, f_n \). The following are approved.

\[ \lambda = \frac{f_1}{c_1} = \frac{f_2}{c_2} = \ldots = \frac{f_n}{c_n} \]

4. Conclusion

(1) Summary

a. It is necessary to perform the study of political leadership in the direction where the trait approach and the behavioral science approach are integrated. And, it returns
after all in the trait approach that is the source of the man behavior.

b. Political leader’s trait is composed of the natural elements and an acquired elements.

c. There are three kinds of political leadership of the creative type, the administrative type, and the symbolic type when thinking from the natural elements. It depends which type is suitable on the situation of the environment that surrounds the political leader.

d. The element that a political leader acquires is the intellect and the virtue when thinking from his acquired elements.

e. These elements can be promoted by the political leader in his effort. However, there is a limit. Especially, the restriction is received according to cost of the age, the educational background and the social experiences.

(2) Problems

a. It is necessary to choose each element that composes leader’s trait, and to define the concept.

b. It is necessary to measure each element that composes leader’s trait quantitatively.

c. It is necessary to examine the interaction and the effect of repetition between each element that composes leader’s trait (so-called multicollinearity if it says by the Statistics) (15).

d. Because it depends whether a leader’s trait is suitable for a political leader on the environment that besieges him, the future perspective is necessary to choose a political leader of a suitable nature with an accurate analyze the present state concerning the nation, the society and the international relations.

[Notes]

(1) The trait approach starts originally from the research rulers such as great politicians or emperor in history. Therefore, it is called, “Great-Man Theory”. For instance, “The Prince” was written by N. Machiavelli which is a historical fine book are too famous.

The research on the difference between the leadership of the politician who was the leader of
the nation and the leadership of the bureaucrat or the manager who was the leader of other
organizations was a little so far.

The discussion concerning the Egogram is recorded in detail to the following books and thesis.
through Redecision Therapy*, Brunner and Manzal Publishers, 1979. I. Stewart and V. Jones,
States with Some Applications to Social and Comparative Psychiatry”, *TAJ*, No. 9, pp. 9–19, 1979. N.

It is believed that the possibility that an inherent element changes because of the increase of an
acquired element is slight in modern days. However, the said person’s behavior can be changed.
Therefore, the following two misunderstandings arose. First of all, the nature theory approach is a
theory that only man who has a specific element can become a leader, and the theory of
discrimination. Second, the behavioral science approach is the theory that everybody can become
a leader, and the theory of equality. The criminal who has them widely circulate these images is
an expansion of mass democracy. However, this is misidentification. Because it is another question
that the action changes, and the character changes.

A lot of attempts to make a typology of political leader are well-known to be almost three patterns.
As for the mathematical model, it is detailed to the following books and thesis. A. C. Chiang and
*Schaum’s Outline of Theory and Problems of Introduction to Mathematical Economics*, McGraw-

Refer to the following books that are the classic achievements of the Egogram, see, Bern
(1964). Dusay (1977). The questionnaire method was made with Department of the Psychic
Treatment Internal Medicine at The University of Tokyo in Japan (TEG: Tokyo University
Egogram) is known well.

For instance, to improve the efficiency of an existing frame when an international setting and a
national system are in the development period, the administrative type leader has the aptitude that
manages the lead. However, there is a possibility of enforcing the inadequate policy like radicalism
and optimism, etc., when the creation type leader and the symbol type leader appear at this time.
It obstructs efficiency, and derives the result of gnawing at the development of the nation.

Refer to following book that are the most famous academic achievement of the international

It is impossible to distinguish each stage strictly. The phase that the situation in the back and
forth intersects exists. Therefore, the role of a political leader of “Relay Post” is important.

The discussion about the vintage production function is written in detail to the following books.

The concept of “maximization” in the economic thesis can frequently be seen in the text of
(14) The element of political leader’s “Coming from hierarchy (birth)” is thought besides these elements. Because a lot of cases in the history show that many of great political leaders are natives of “middle class”. A great political leader who was born from an upper class and a lower class can confirm few facts.

(15) This is a term of Statistics. It means the synergy effect of the autonomous variable (explanatory variable) that is the explanation factor of the induced variable (explained variable) gives the influence more than the action of an individual variable.