

Differences between the Purposes of the Dominance Search Model and the Acceptable Decision-Making Search Model

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Abstract

This study clarifies the differences in the decision-making processes between the dominance search model and the acceptable decision-making search model. For this purpose, we analyzed the behavioral patterns of the two decision-making models based on empirical decision-making cases. We found that, although the upper purposes of decision-making are the same, the two models have fundamentally different lower purposes and, hence, their decision-making processes are very different. Additionally, the lower decision-making purposes of both models are conceptually defined as explicit and implicit, and their differences derive from the behavioral patterns between Japanese and Westerners based on the research results of Nisbett. This research is a very important topic for smooth consensus building with people who have different ways of thinking and so on. This is not only an academic contribution to clarify the nature of cross-cultural decision-making, but also useful in discussing effective approaches to negotiation in business.

Keywords: acceptable decision-making, explicit purpose, implicit purpose, justification.

1 Introduction

Decision-making is defined as the process of selecting a particular alternative for implementation [1]. However, in actual decision-making, it is not easy to select the best alternative. For example, the desire for lower cost often results in lower quality, as well as longer delivery times. In other words, the decision-making process has many attributes to consider and there are often trade-offs among them. Therefore, it is difficult to make a choice. However, this does not mean that decision-making is impossible if we approach difficult problems with intention and purpose.

Normative decision theory prescribes that the decisions based on expected utility theory are the best and that individuals should make such decisions [2]. Multi-attribute utility theory [3], which is a development of expected utility theory, quantifies the preference relationship between alternatives, obtains a multi-attribute utility function corresponding to these preferences, and selects the alternative that maximizes the value of the multi-attribute utility function. This theory makes it possible to derive an optimal solution to a decision-making problem. However, as it is

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difficult to apply it in a limited time, we rarely use the multi-attribute utility theory to make decisions. Therefore, descriptive decision-making theory, which pursues the image of human decision-making “as is,” has been proposed instead of normative decision-making theory.

Simon [4], one of the leaders of descriptive decision theory research, used observations of managerial behavior to argue that humans have only limited rationality and, therefore, make decisions based on satisfaction. Montgomery [5] further argued that individuals make decisions that claim justification by the “dominance search model,” which is based on the “dominance rule,” which is one of the heuristics. Hosoda [6] surveyed previous studies and practical experiences, finding that individuals often make decisions by selecting one from the available alternatives when they are satisfied with the decision-making process. Based on these findings, we identify the concept of acceptable decision-making and develop the acceptable decision-making search model to realize efficient decision-making.

Although the two models are very similar in terms of decision-making using multiple heuristics, there are significant differences in the decision-making process leading up to the final decision. Therefore, it is thought that there are factors that cause differences in decision-making between the two models. This paper clarifies the reasons for the differences in the decision-making processes of the two models. Then, we discuss perspectives that are necessary for smooth consensus building with people who have different ways of thinking, etc., and aim to contribute to decision-making research and its effective use in business.

2 Theoretical Background

2.1 Dominance Search Model

According to Newell et al. [7], a heuristic is a process that has the possibility of solving a given problem but does not necessarily guarantee its resolution. They are called in various ways, depending on the field, for example, decision strategies or heuristic decision rules. In this paper, we refer to these as decision rules. Montgomery [5] identifies eight rules as typical decision rules, their summary being shown in Table 1.

Table 1: Examples of typical decision-making rules based on heuristics [5] [8]

Name of rule	Choice requirement	Name of rule	Choice requirement
Dominance rule : DOM	Choose alternative A_1 over A_2 if A_1 is better than A_2 on at least one attribute and not worse than A_2 on all other attributes.	Lexicographic rule : LEX	Choose alternative A_1 over A_2 if it is better (or significantly better) than A_2 , on the most important attribute. If this requirement is not fulfilled, base the choice on the most attractive aspects of the attributes next in order of importance, etc.
Conjunctive rule : CON	Choose only alternatives which exceed or are equal to all of a set of criterion values C_i on the attributes.	Maximizing number of attributes with a greater attractiveness rule : MNA	Choose A_1 over A_2 if A_1 differs favorably from A_2 on a greater number of attributes than the number of attributes on which A_2 differs favorably from A_1 .
Disjunctive rule : DIS	Choose only alternatives which exceed or are equal to at least one of a set of criterion values D_i on the attributes.	Addition of utilities rule : AU	Choose the alternative with the greatest sum of (weighted) attractiveness values (utilities) across all attributes.
Elimination by aspects rule : EBA	Exclude all alternatives which do not exceed a criterion C_i on the most important attribute. Repeat this procedure with new attributes in order of importance.	Addition of utility differences rule : AUD	Add "differences" $D_k = f(a_{1k} - a_{2k})$ where a_{jk} is the attractiveness of aspect jk on alternative j and attribute k , and D_k is a continuous function of $a_{1k} - a_{2k}$. If the sum of these "differences" is positive, choose A_1 and if it is negative, choose A_2 .

Montgomery argues that there are three criteria for evaluating decision-making rules: (i) the ability to choose only one alternative; (ii) the ability to justify the reasons for choosing oneself and others; and (iii) the ability to apply it easily to decision-making problems [5]. He found experimentally that individuals consider justification to be the most important of these criteria. Montgomery and Svenson argue that individuals seek to justify their decisions to themselves and others [9]. They thus developed the dominance search model for satisfying justification, in which humans value justification the most. This model first applies the dominance rule, which prioritizes justification and, when that rule is not applicable, it searches for alternatives to which the rule can be applied, using multiple other decision rules. The dominance search model consists of the following four steps and its flowchart is shown in Figure 1.

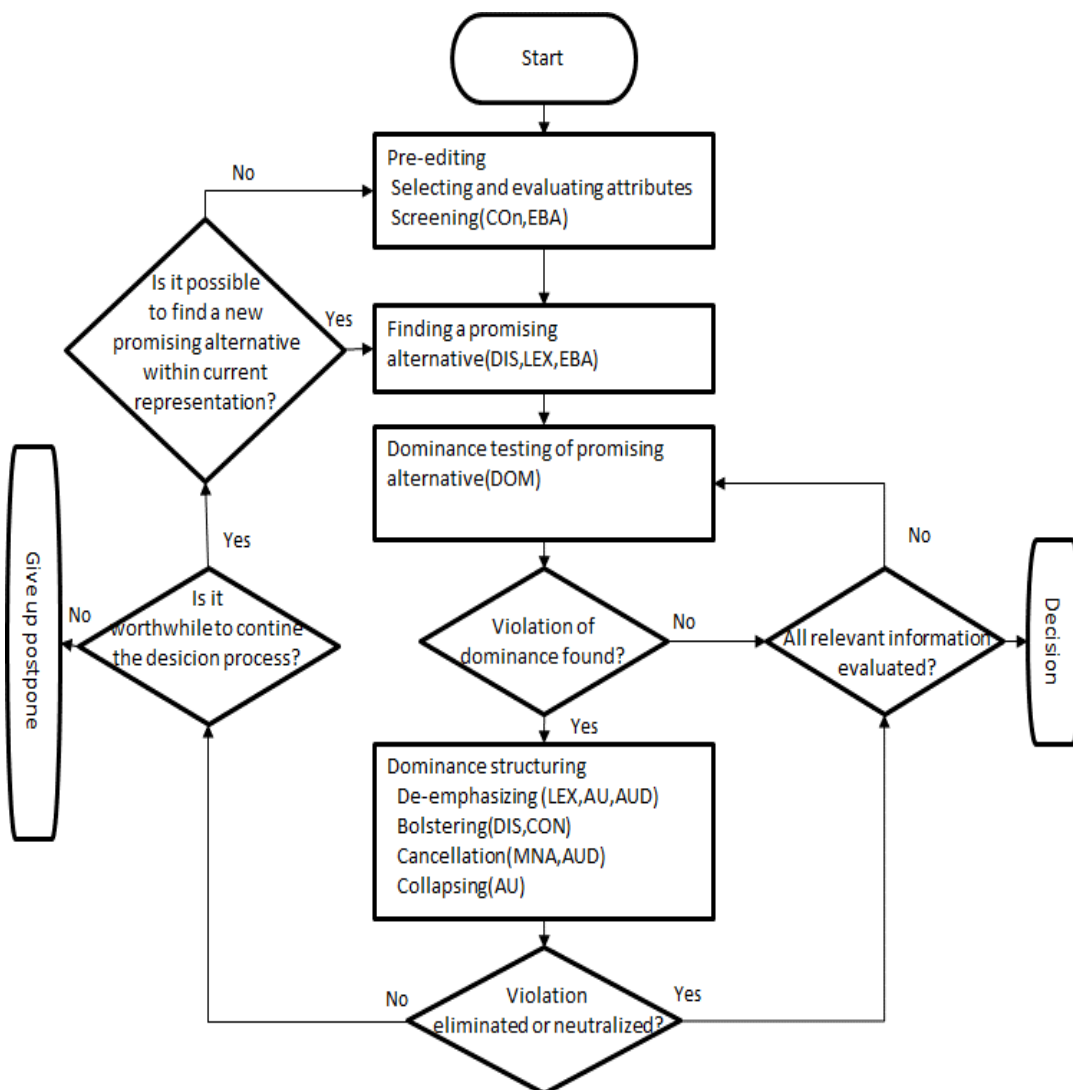


Figure 1: Flowchart of the dominance search model [9]

<<Procedure>>

I. Pre-edition

Select and evaluate alternatives and attributes.

II. Finding a promising alternative

Using the disjunctive, lexicography, and elimination by aspects rules, select one promising alternative.

III. Dominance testing of promising alternative

Test dominance of the promising alternative. In the event of a failure, call IV.

IV. Dominance structuring

Through the following operations, resolve the reasons that hinder dominance.

- De-emphasizing: use the lexicography rule to change the evaluation of an unimportant attribute, consider it probabilistically unnecessary, or postpone it as something that will happen in the distant future.
- Bolstering: use the disjunctive rule to make promising alternatives look better; use the conjunctive rule to emphasize bad aspects of less promising alternatives.
- Cancellation: use the maximizing number of attributes with a greater attractiveness rule to offset the good and bad aspects of the alternatives.
- Collapsing: use the addition of utilities rule to average over multiple attributes and to make them more compensatory.

2.2 Acceptable Decision-Making Search Model

Hosoda [6], based on a review of the previous research of Simon [10] [11] [12] and Montgomery [5] [9] and the author's own practical experience, suggested that individuals often reflect on their decision-making and choose the alternative that results when they are satisfied with the process. Furthermore, individuals gain confidence and justify their decisions by considering that their decision-making process is acceptable. Based on these suggestions, we propose the concept of acceptable decision-making. The original meaning of the word "acceptable" is "to understand and recognize the thoughts and actions of others as plausible." In other words, acceptable indicates judgments about others (objects). Therefore, Hosoda [6] defines acceptability in decision-making as "a sense of satisfaction that implies objectifying and evaluating one's decision-making process and allowing it in light of one's own values." The process flow shown in Figure 2 shows the conceptual model of acceptable decision-making introduced by Hosoda [6].

In response to the introduction of the concept of acceptance in decision-making, Hosoda [6] developed a practical method to achieve acceptable decision-making. This model is called the acceptable decision-making search model (Figure 3) and consists of the following four processes.

<<Procedure>>

- First, the examination and derivation of candidates is the process of grasping the relationships between attributes and alternatives. This allows to purposely understand the trade-off relationship between the alternatives and their attributes in a decision-making problem.
- Next, the review of the problem structure is the process of reviewing the problem structure understood under the examination and derivation of candidates process. Through this review process, the understanding of the problem structure is deepened and the acceptance of narrowing down the alternatives to be selected increases.
- Finally, the review of the acceptableness structure is the process of objectifying the decision-making process followed by a decision-maker and reviewing whether the process is acceptable in light of one's values, life, and worldview. This review for introspection can further improve the sense of acceptableness.

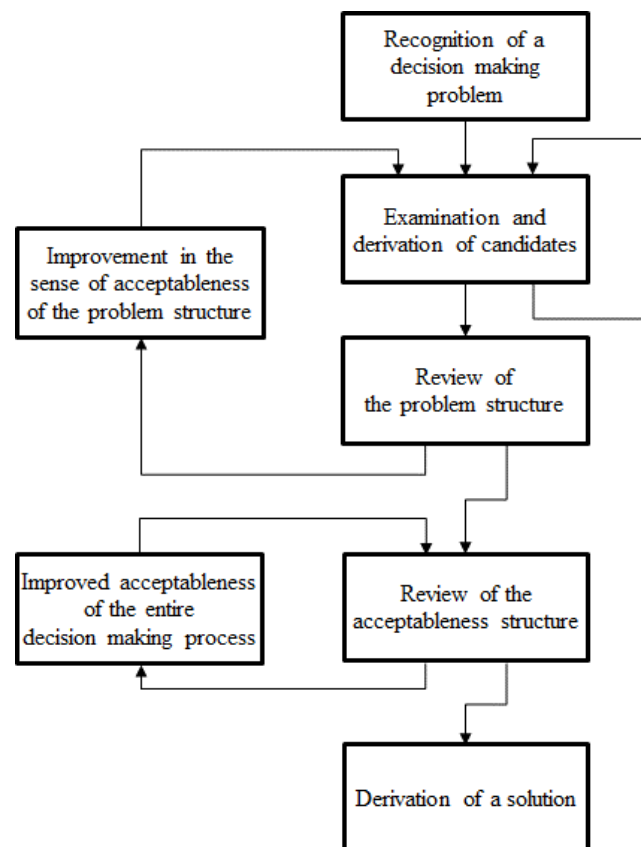


Figure 2: Conceptual model of acceptable decision-making [6]

In this model, decision-makers consider the decision-making process until they determine that it is sufficient and then determine when the results of the consideration are sufficient based on their empirical knowledge and values. Hosoda [6] argues that decision-makers seek the power to gain confidence and evidence for their decisions.

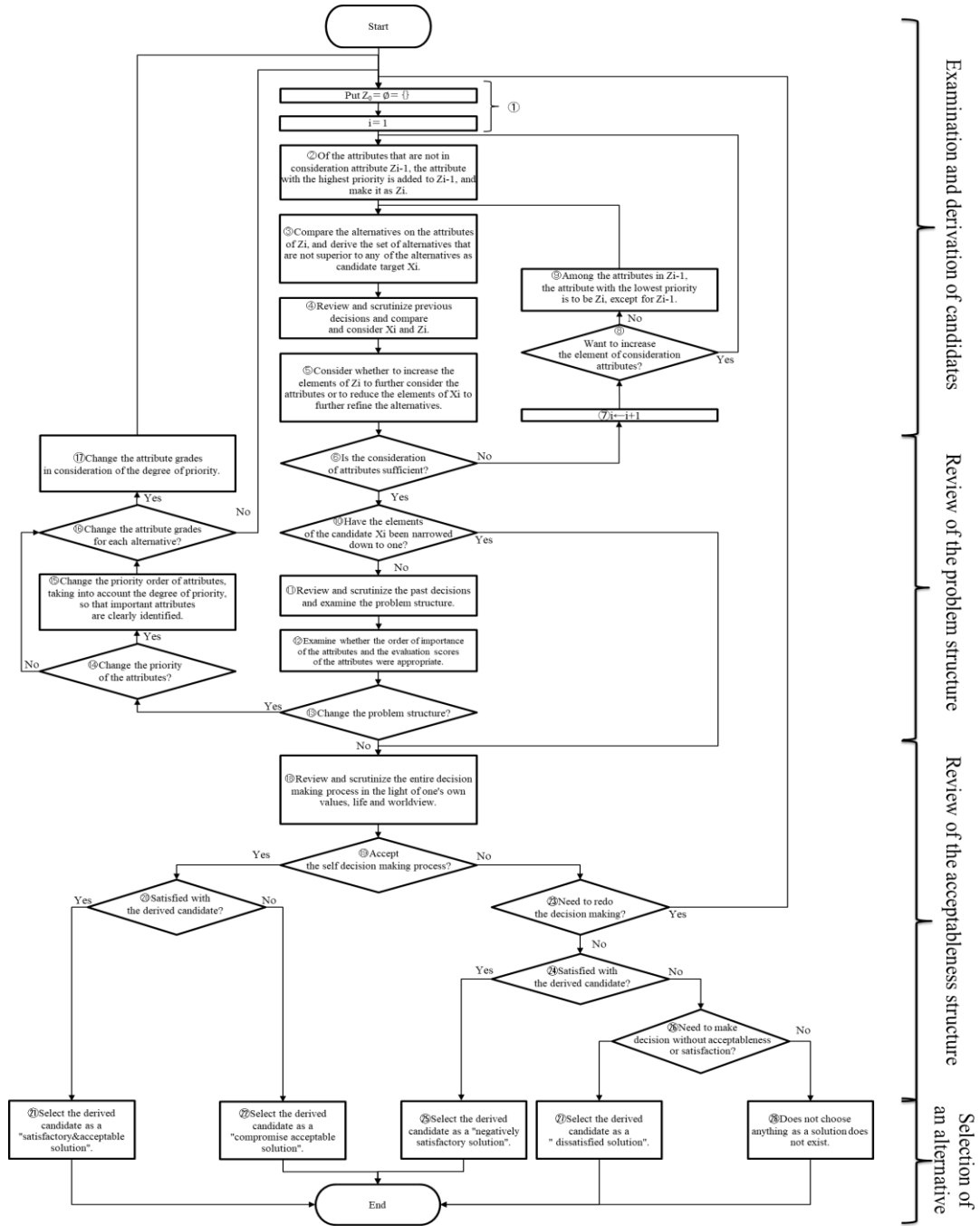


Figure 3: Acceptable decision-making search model [6]

<<Procedure>>

- Examination and derivation of candidates
The process of purposely understanding the relationship between alternatives and their attributes in a self-decision problem, deriving candidate objects for selection from the attributes to be considered, and considering whether the consideration attributes and candidate objects are acceptable.
- Review of the problem structure
The process of increasing the sense of acceptableness of the decision-making process by confirming and objectifying one's own thought process while changing the order of important attributes and grades to further narrow down the alternatives.
- Review of the acceptableness structure
The process of reflecting and deliberating on the entire process of decision-making so far in the light of the decision-maker's own values, view of life, and worldview, and considering whether they are satisfied with it.
- Selection of an alternative
The process of finalizing and selecting the alternatives derived from the previous processes.

3 Decision Cases under the Two Models

To confirm how decisions were actually made, a decision-making problem on job hunting was prepared and an application experiment was conducted with test subjects. The observation results of the applied experiment are as follows. The subjects were asked to vocalize what they felt and thought during the decision-making process.

【Overview of the Experiment】

〈Experimental Problem〉

You are faced with the decision of which company you should work for. The alternatives under selection and their attributes are given below. Which of the alternatives do you choose as the best one, based on the information about each company?

〈Subjects〉

The decision-making processes of six Japanese students and office workers were observed. The table below shows the results of the evaluation by subject ①.

Table 2: Example of evaluation of each attribute for each alternative by subject ①

	motivation	income	working environment	education system	name recognition	potential
Company A	5	4	4	2	4	2
Company B	4	3	3	3	4	3
Company C	1	5	3	2	5	3
Company D	2	3	3	3	3	2
Company E	3	5	4	2	2	5
Importance	1	3	2	6	5	4
Minimum reference value	3	3	3	3	3	2

3.1 Decision Cases under the Dominance Search Model

Case ①

Subject ① evaluated the attributes and shortlisted the alternatives other than Company D, which met the minimum evaluation criteria. He selected Company A, which had the highest score for the most important attribute, motivation, as a promising alternative. However, Company A did not score as high as the other companies under all attributes. Therefore, it was necessary to show the reason why a promising alternative was selected. Subject ① reviewed the alternatives and attributes again and reinforced the merits of the promising alternative with the idea of evaluating only the top two evaluated attributes. Based on the results, subject ① re-evaluated the compensation and income attributes based on which he selected Company A.

Case ②

Subject ② thought of the alternatives and derived the ones that exceeded his evaluation values, which he considered as standard for all evaluation criteria. As a result, all but Company C remained as candidates. Having failed to sufficiently narrow down the alternatives, he selected Company E, which had the highest evaluation criteria for the working environment, as the most promising alternative. However, Company E did not score as high as the other companies in all attributes. Because it was not necessarily dominant in all evaluation attributes, it was necessary to provide a reason for selecting it as a promising alternative. To find the rationale for choosing Company E, he considered that all attributes which were not very important other than the income and working environment attributes were excluded from consideration. As a result, he selected Company E based on the income and working environment attributes.

Case ③

Subject ③ followed the same procedure as subject ② and selected Company A as a promising alternative. However, since Company A was not superior to the others, he tried to resolve the reasons why he could not have an advantage. However, even after reviewing the attributes that he considered unimportant, he could not select a superior candidate from the alternatives. He also tried offsetting the positive and negative aspects of the alternatives and averaged multiple attributes to evaluate them, but none of these methods solved the problem. He thought it was not possible to select an alternative that was superior to any of the alternatives under the current circumstances. He thus gave up on making a decision.

3.2 Decision Cases under the Acceptable Decision-Making Search Model

Case ④

Based on the evaluation of the alternatives, subject ④ considered which alternative would be selected if the most important attribute, income, was targeted first. As a result, Company A was selected. Next, the next most important attribute, motivation, was added to the list to see which alternative would remain as a candidate. As a result, Companies A and C were selected. Then, when the third most important attribute was added, and all alternatives remained as candidates. Therefore, when more attributes were evaluated, the candidates could not be narrowed down. Although he could not select a company with the three most important attributes, he was able to narrow down the list to two companies for two attributes and one company for the most important attribute only. Therefore, he decided to choose Company A by focusing on motivation. Specifically, he reviewed the decision-making process and considered whether to make deci-

sions based on only the most important attribute, motivation, in light of his values, deciding it would be better to make decisions based on the most important attribute than to consider other attributes and not be able to narrow down the alternatives.

Case ⑤

Similar to subject ④, subject ⑤ considered which alternatives would remain as candidates if the most important attribute, potential, was targeted first in the evaluation of alternatives. As a result, Companies A, B, and C remained as candidates. Next, the second most important attribute was added, based on which Company C was inferior to Companies A and B, while Company D, received a high score, the remaining candidates being Companies A, B, and D. Therefore, he questioned the ranking of the attributes and whether the scores were appropriate. As a result, he considered that the working environment was more important than the potential attribute and income was more important than potential, thus changing the priorities. After that, he narrowed down the candidates once more using the same procedure, ultimately selecting Company D, which had the highest scores for working environment and income. He then reviewed the decision-making process leading up to the selection of Company D and re-examined the pros and con of the change in attributes. As a result, he was satisfied with the decision-making process.

Case ⑥

Subject ⑥ checked the evaluations of the alternatives and narrowed down the candidates by considering income as the most important attribute. As a result, Company C was selected. After some thought, he determined the best candidate by considering the second most important attribute, working environment. Consequently, Companies C and E became the candidates. The next most important attribute, name recognition, was added and the number of candidates increased as a result. At this point, he was not sure which alternative to choose, so he reflected and discussed the consideration process up to this point. He could not discard the two most important attributes or the next ones. Although he could not narrow down his choices to a single alternative based on the critical attributes that were essential to his choice. He finally included Companies C and E as the candidates.

4 Similarities and Differences between the Two Models

Based on the examples in the previous section, the characteristics of decision-making under Montgomery's [5] and Hosoda's [6] decision-making models are analyzed.

First, decision-making is based on decision rules under both models. Furthermore, both models use multiple decision rules. Among them, the dominance rule is always used in the decision-making process of both models. From the above, both models have in common that they use multiple decision rules, among which the "Dominance rule" is always used.

Second, both models have multiple processes, which are looped through conditional branching to reach the final decision. In fact, in the case of the previous section, subjects ①, ②, and ③ went through the processes of pre-editing, finding a promising alternative, dominance testing of promising alternative, and dominance structuring under the dominance search model to reach their decisions, while subjects ④, ⑤, and ⑥ went through the examination and derivation of candidates, review of the problem structure, and review of decision-making process under the acceptable decision-making search model. In each model, all subjects made decisions by trial

and error through loop processing.

Next, the differences in decision-making between the two models are analyzed. As previously mentioned, the decision-making process in both models revolves around the dominance rule, but the way this rule is used can differ.

Under the dominance search model, by using the dominance rule as it is the dominant alternative is extracted against all other alternatives, and the decision-making process is resumed to finally selecting the dominant alternative. It can be seen that Subjects ①, ②, and ③ all try to select an alternative by modifying the problem structure so that the “Dominance rule” is applied through “Dominance structuring” such as “De-emphasizing”, “Bolstering”, “Cancellation” and “Collapsing”, while repeating the “Dominance testing of promising alternative” and “Dominance structuring”. Note that subject ③ was unable to structure the problem in such a way that any Dominance structuring allowed the dominance rule to be applied and was ultimately unable to make a decision.

The acceptable decision-making search model uses the idea of the dominance rule, but in combination with the idea of the lexicography rule, it goes through a decision-making process that examines the situation of narrow down the alternatives by increasing the number of attributes in addition to the most important ones. This feature is evident in the fact that subjects ④, ⑤, and ⑥ utilized the features of the dominance and lexicography rules to narrow down the alternatives while understanding the trade-off relationship between attributes and alternatives. Subject ⑥ was not able to narrow down his choices to one alternative, but by looking back at his decision-making process, he was convinced of his decision and finally identified two alternatives.

The decision-making processes of both models are similar, in that they have multiple processes and repeat a loop process with conditional branching to reach a final decision, but there are differences in the way dominance rule is used and what is sought in the processes of each model. The dominance search model calls for searching for alternatives that have an advantage over other alternatives through dominance testing of promising alternative and their dominance structuring for promising alternatives. However, dominance structuring was not always successful, and while subjects ① and ② were fortunate enough to be able to choose an alternative, subject ③ was unable to make decisions and was unable to identify a dominant alternative.

Under the acceptable decision-making search model, the idea of dominance and lexicographic rules are combined to narrow down the alternatives, while understanding the trade-off relationship between attributes and alternatives, and then the decision-making process is reviewed to derive alternatives. Since the decision-making process is allowed, decision-making may be possible even when the decision cannot be narrowed down to a single alternative, as for subject ⑥; in such cases, the decision can be made understanding the trade-off relationship between attributes and alternatives.

These characteristics show that both models incorporate the dominance rule as into the process on the model as an important position. Since the Dominance rule is the decision rule that can best justify a decision and is the most appropriate decision rule to justify a decision. Therefore, both models can be considered to justify the corresponding decisions.

However, although both models seek to assert justification of a decision, there are differences in the way the dominance rule is utilized under the two models and, thus, differences in the deci-

sion-making processes for this purpose. In other words, it can be said that decision-making under the dominance search model seeks to justify one's decision directly by relying on the dominance rule to show the dominance of promising alternatives over other alternatives to justify the decision. Decision-making under the acceptable decision-making search model seeks to justify decision-making indirectly asserts the justification of its own decision-making by the acceptability of the whole decision-making process that has been considered.

In summary, we can see that the differences in the characteristics of the two models can be explained as differences in their decision-making purposes. In the next section, we will clarify those purposes [13].

5 Purposes of the Two Models

From the analysis of the similarities and differences in the previous section, it is clear that the decision-making under the dominance search and the acceptable decision-making process search models are in agreement in terms of seeking justification for decision-making, but there are differences in the approaches used. In other words, both models hope that the justification of the decision will be realized, make the justification the goal of the decision, and direct the decision by justification.

Let us examine the meaning of the word "purpose." A purpose is something whose realization is desired by will and defines and directs the action as the goal of an action, while a goal is an aim set up to achieve the purpose. Damon, Menon, & Bronk [14] mentioned that "Purpose is a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self." Therefore, it is appropriate to replace the word "seek" with the word "purpose."

Decision-making under the dominance search model justifies the choice of an alternative clearly and directly by deciding in advance on a promising alternative as a candidate and then demonstrating the superiority of that alternative. This purpose is a purpose set in the context of justification for self-determination. In other words, decision-making under the dominance search model is a decision-making with the higher purpose of justifying one's own decision-making process and the lower purpose of clearly and directly asserting the justification of the decision by showing the superiority of a promising alternative over other alternatives.

Alternatively, the acceptable decision-making search model has the higher purpose of justifying one's decision and the lower purpose of the decision-maker's own satisfaction with the decision-making process that led to the narrowing down of the candidates; as such, it vaguely and indirectly asserts the validity of the choice of alternatives by the validity of the decision-making process, which is a vague and indirect assertion of the justification of the choice. From the discussion so far, each sub-purpose can be identified as follows [13].

- Explicit purpose:

The purpose is to be clearly aware of one's purposes and be able to express it explicitly.

= sub-purpose of the dominance search model

- Implicit purpose:

The purpose for which one has a vague and latent sense of one's purposes and can only express its content by implication.

= sub-purpose of the acceptable decision-making search model

From the above, it is considered that the reason for the differences in decision-making processes according to the two models stem from their lower purposes of decision-making in the respective models.

To clarify these differences, we conducted a case study with Japanese subjects. Since Montgomery [5] proposed the dominance search model at the University of Gothenburg in Sweden, it is clear that the decision-makers he studied were likely Westerners, while we conducted our research with Japanese university students and businesspersons, the target population of the acceptable decision-making search model being Japanese.

In other words, the dominance search model represents the overall decision-making process of Westerners, while the acceptable decision-making search model represents the overall decision-making of the Japanese. Therefore, the difference in decision-making purposes can be considered to be due to the difference in behavior between Westerners and the Japanese.

Westerners can decide their purpose by separating a choice and considering that the relationship between this choice and the others can be separated without any problems. Therefore, their purpose is always clear, and it is possible to express it explicitly.

On the other hand, in principle, the Japanese cannot capture or their purpose separately and part of the world and cannot be defined uniquely their purpose. Therefore, their connections with others can change according to circumstances. This means that the purpose includes not just one aims but sometimes other multiple purposes implicitly.

The difference in purpose between the Japanese and Westerners can be described by Westerners' analytic thought and Japanese holistic thought processes, as mentioned by Nisbett [15]. In his paper, this difference in purpose is revealed by means of the behavior comparison between the Japanese and Westerners. Namely, Westerners express what they want to do subjectively and clearly and claim they are more correct than the others by justifying their beliefs. However, the Japanese ask to have moderation or harmony by being conscious of the social context and conceal their beliefs at the bottom of the heart temporarily.

To summarize the above, it can be said that it is fundamental for Westerner to be carried out based on the explicit purpose, and for the Japanese to be carried out base on the implicit purpose.

In addition, the explicit purpose is often linked with a purpose to justify the decision-making firmly. In the case that Westerners tried to justify the decision-making under the explicit purpose, they try to justify the choice directly by claiming that the chosen alternative is the right choice. On the other hand, the implicit purpose is linked with the polite explanation of the decision-making process. In the case that Japanese try to justify the decision-making under the implicit purpose, they try to justify the choice indirectly by explaining the process of decision-making.

Additionally, when the decision-making is considered, we have to pay attention to targets of the explicit purpose and the implicit purpose. In the case that the decision maker tried to justify the decision-making under the explicit purpose, they try to justify the choice directly by claiming that the chosen alternative is right. On the other hand, in the case that the decision maker tries to justify the decision-making under the implicit purpose, they try to justify the choice indirectly by explaining the process of decision-making.

Finally, it should be emphasized that the argument of which is superior, the Japanese or Western decision-making, makes no sense. This is because each style was born and grown up from each cultural background, was formed from the difference of purpose based on each culture, and is an appropriate style to each background.

Thus, the ways of having purpose in the Japanese and Westerners were considered through the analysis of purpose. This means that the difference of purpose between the Japanese and Westerners is appeared as a difference between the hidden purpose (justifying the choice by explaining the process of decision making) and the explicit purpose (justifying the choice by claiming that the chosen alternative is right).

This can also be expressed as follows:

- Explicit purpose: A purpose that suits Westerners.
- Implicit purpose: A purpose that suits the Japanese.

As discussed above, we have identified the concepts of explicit purpose for Westerners and implicit purpose for Japanese [16].

6 Discussion

It was found that there is a significant difference in the purpose of decision making in the Western and Japanese models of decision making. In the rest of this paper, we discuss the concept of purpose in group decision making, such as in organizations, along with the differences in cultural backgrounds.

It was stated that the decision-making of Westerners has the higher purpose of justifying their own decision-making process and clearly and directly asserts the justification of their decisions by showing the superiority of promising alternatives to other alternatives. This can be thought that Westerners are making a point in order to make others understand their actions and thoughts. In Western culture, in order to express oneself through words, it is always necessary to provide justification, and it is not easy to criticize oneself or say negative things.

Haruta & Hallahan analyzes this through the dialogue between Japan and the United States in a flight accident [17]. First, they mentioned that the CEO of Delta did not directly apologize for the accident. Then they stated, "However, making a public apology was neither desirable because of litigation concerns nor expected by the public". Furthermore, they said that "American people seemed generally satisfied with how Delta was handling the crisis overall," and that while some people were dissatisfied, many Americans themselves were also satisfied with Delta's handling of the situation.

While JAL President Takagi repeatedly apologized to the victims' families and survivors[17], apology was central to Japan Airlines' response to the crisis, and was ultimately expected by the public.

And it can be considered that JAL also aimed to make the people understand and convince what they were thinking through an apology. This can be considered to be consistent with the characteristic of Japanese decision-making, in which the decision-makers themselves are satisfied with the decision-making process and vaguely and indirectly assert the justification of their own decision-making through the satisfaction of the decision-making process. On this point, Meyer [18] analyzes instruments in terms of communication contexts, such as Western culture, where "in a low-context cultural sphere, the more educated and sophisticated businesspeople are, the clearer and less vague communication they take." This is a good example of the characteristic of Westerners that what should be clear is the fact.

On the other hand, Meyer's point about Japanese culture, "high-context cultures, the more educated and sophisticated you are, the greater your ability to both speak and listen with an understanding of implicit, layered messages."

In another example, in negotiating behavior in a cross-cultural environment, differences in goals are reflected in differences in negotiation methods. Adair et al. state, "The U.S. negotiators relied on direct information to learn about each other's preferences and priorities and to integrate this information to generate joint gains. [19]" This can be said to be a characteristic of explicit purposes, where justification is sought directly in the information.

On the other hand, they note that "The Japanese negotiators relied on indirect information, inferring each other's preferences and priorities from multiple offers and counteroffers over time." This shows the characteristics of the implicit purpose, where the purpose is vaguely and potentially held, and the content of the purpose is implicitly indicated to convince the other side.

This kind of Japanese way of holding purposes can also lead to ambiguous purposes influenced by the atmosphere. Yamamoto states in this regard that Japanese people make decisions with a kind of double standard: a standard for logical judgment and a standard for atmospheric judgment [20].

This happens in other countries as well, but is especially susceptible in Japan, where people rarely judge things according to absolute and objective values [21]. The influence of absolute and objective values on the purpose of decision making may be another point that needs to be discussed in the future.

7 Conclusions and Future Work Directions

This paper has tried to clarify why the decision-making processes are so different between dominance search model and the acceptable decision-making search model.

To do this, it was clarified that two decision-making models use multiple decision rules, there are significant differences in the decision-making processes leading up to a selection of alternatives, by analyzing based on some examples and references.

Moreover, it was investigated, the main reason for the differences between these decision-making processes is the difference in their lower decision-making purposes.

As future work, we can study how implicit and explicit purposes appear as differences in the process of decision-making between Japanese and Westerners. In addition, it is expected to study the differences between the cultural backgrounds of Westerners and Japanese people and the resulting differences in the purposes of decision-making.

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