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## 論文内容の要旨

氏 名 ( 鶴田まなみ )

## 論文題名

Essays on Group Decision Making and Dishonest Decision Making  
(集団意思決定と不正の意思決定に関する小論)

## 論文内容の要旨

In this dissertation, I clarified how the decision making of group intertemporal choices is aggregated, and furthermore, the characteristics of dishonesty behaviors from two aspects: time limit and reaction time. This dissertation consists of the following three topics: intertemporal decision making of a group, dishonesty behaviors under time pressure, and reaction time of dishonesty behaviors. In Chapter 1, I outline each topic.

## [Chapter 2]

Some experimental studies examine group decision making in risk preferences (e.g., Ambrus et al., 2015), inequality aversion (e.g., He and Villeval, 2017) and so on. However, very few experimental studies examine intertemporal choices in group decision making. Group intertemporal choices are often important economic decisions such as household savings plans or corporate investment plans. Examining the mechanism of intertemporal group decision making can have valuable academic and practical contributions. We experimentally investigate the aggregation of individual time preferences by identifying those with the most influence on group decisions, among heterogeneous group members. We formulate two hypotheses. The first is the multilateral bargaining hypothesis, based on the multilateral bargaining model. If individuals employ this model to reach agreement, the most patient member in a group has the greatest impact on group choices. The second is the median voter hypothesis, based on the median voter model. When individuals employ this model to reach agreement, the median patient member in a group has the greatest impact on group choices. Here, we find that the median patient member in a group has a significant impact on group decisions in an unstructured bargaining situation. This finding suggests that individuals use the majority voting rule during group intertemporal decision making. Thus, our findings support the median voter hypothesis. Furthermore, the results of a chat analysis show that this result is partially because of individual conformity with the majority opinion.

## [Chapter 3]

Economists usually assume that individuals make dishonest choices after calculating its benefits, the probability of detection, and punishment from detection (e.g., Becker, 1968). However, studies in recent experimental economics reveal that not everyone lies to increase payoff, even when lie is never detected and there is no punishment for lying (e.g., Fischbacher and Föllmi-Heusi, 2013). Therefore, many studies are now investigating lying behaviors in detail (e.g., Jacobsen et al., 2018). Some studies have investigated lying behaviors under time pressure in a laboratory experiment (e.g., Capraro, 2017). These results are mixed. These previous studies have two drawbacks. This current study employs an experimental design that overcomes these two drawbacks and conducts experiments that are more appropriate. In the Dual system model, when there is a time limit, individuals take an intuitive action (referred to as system 1); conversely, they take a deliberate action when there is no time limit (referred to as system 2) (Kahneman, 2003; 2011). In deciding whether to lie, is System 1 either lying or reporting honestly? That is, is system 1 reporting honestly and system 2 lying; otherwise, is system 1 lying and system 2 reporting honestly? The purpose of this research is to clarify whether the lying or the honest behavior is system 1, by applying a time limit condition to the lying task in a laboratory experiment. We found no difference in the degree of the lie between treatments with and without time limits. The result has two possible interpretations. One is that the decision system of intuition (system 1) and consideration (system 2) does not apply to lie decision making. In other words, either thinking about it carefully or making decisions in haste, does not change the degree of the lie. Another possibility is that the time limit in the experiment

was too long. It takes only a very short time for the participant to press the numbers on the keyboard after the choices are displayed, and even under unlimited time, the average is about 1.3 seconds. Therefore, the participant may not have been given a sufficient load. In other words, intuitive (system 1) decision making was not performed.

#### [Chapter 4]

Both the above-mentioned research based on time limit and research, using reaction time, attempt to discern whether a certain decision is an intuitive system 1 or a deliberate system 2 in the Dual process model. By analyzing the dishonest decision making using these two methods, we understand the characteristics of cheating better. Our reaction time study found that panel data analysis revealed a negative relationship between dishonest behavior and reaction time. We divided participants into three groups to examine the heterogeneity of the extent of lying: Group 1=the Honest group, comprising those who always made honest decisions; Group 2=the Big Liars' group, comprising those who always made dishonest decisions; and Group 3=the Liars' group, comprising those who sometimes made honest and dishonest decisions. The reaction times for all decisions, including honest decisions, were significantly longer in the Liars' group than in the Honest group; however, there was no statistically significant difference between the mean reaction times of the Big Liars' group and Liars' group. The panel data analysis of each group revealed two results. First, the Honest group made honest decisions even when a dishonest decision would result in a large payoff, but their reaction times for such decisions were long. Second, the Liars' group showed a non-linear relationship between dishonest behaviors and reaction times, that is, the reaction times for honest decisions and those for dishonest decisions receiving maximal payoff were lower than those for dishonest decisions receiving medium payoff. We interpreted the results using the Dual system model and found that the Honest group intuitively made honest decisions, while the Liars' and Big Liars' groups made deliberative decisions, whether they were honest or dishonest. Even those who always made dishonest decisions deliberately made those decisions. Those who always made honest decisions deliberately made honest decisions, which resulted in them losing a large payoff, compared to honest decisions that resulted in the loss of only a medium or small payoff. Individuals who sometimes made dishonest decisions deliberately made somewhat dishonest decisions compared to honest decisions and maximally dishonest decisions.

## 論文審査の結果の要旨及び担当者

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**論文審査の結果の要旨**

[論文内容の要旨]

本論文は、集団の異時点間の意思決定選択と不正行動の特性について、実験室実験を用いて検証したものである。本論文での不正行動とは自己利益のために嘘をつく意思決定のことである。論文の構成は、第1章で各章の研究の背景と概要を示している。第2章で集団の異時点間選択についての実験結果を示し、第3章で時間制限下の不正行動の発生特性について分析し、第4章で不正行動の際の反応時間の特性と個人間の差異について検証している。第2章以降の具体的な内容はつぎのとおりである。

第2章では、異質性がある集団構成員の中で、誰が集団意思決定に最も影響を与えているかを特定することにより、個人の時間選好がどのように集約されているかを検証している。集団構成員の中で最も我慢強い構成員（割引因子が最も大きい）が集団意思決定に影響力をもつという多国間交渉仮説と集団構成員の中で我慢強さが中位の構成員（割引因子の大きさが中位）が集団意思決定に影響力をもつという中位投票者仮説を検証している。実験結果は、中位投票者仮説と整合的であった。

第3章では、自己利益のために嘘をつく意思決定である不正行動をする際に、瞬時に直感的な意思決定を行っているのか、時間のかかる熟慮的な意思決定を行っているのかという二重過程理論に基づく仮説を検証する実験を行っている。個別の実験参加者が嘘をついたことが実験者には直接的にはわからないが、統計的な解析で嘘をついているかを検証できる実験で、回答時間に時間制限を設けることで不正行動の発生頻度が変化するかどうかを検証している。実験結果は、時間制限の有無およびその程度は不正行動の発生頻度に影響を与えないことを示している。解釈としては、不正行動の意思決定が、直感的意思決定と熟慮的意思決定という理論的枠組みでは説明できない可能性と時間制限が長すぎた可能性がある。

第4章では、第3章で行った実験を不正行動の意思決定の反応時間に注目して二重過程理論を検証した。特に、実験参加者の異質性に注目している点が新しい。実験参加者の回答結果をもとに、正直グループ、不正グループ、強度不正グループの3つに分け、回答までの反応時間の特性を調べている。その結果、不正グループと強度不正グループの反応時間は正直グループよりも長いこと、正直グループでは、正直な選択により大きな利益を失う場合に、そうではない正直な選択よりも反応時間が長くなること、不正グループでは、反応時間と不正行動の間に非線形の関係があることを見出している。二重過程理論にもとづいて、正直グループは直感的意思決定を用い、不正グループ、強度不正グループは熟慮的意思決定を行っているとして解釈されている。また、正直グループでも、正直な回答により損失が大きくなる場合には熟慮的意思決定が入ってきている可能性があるとしている。

[審査結果の要旨]

本論文は、集団的な異時点間選択が中位者投票理論と整合的であること、不正行動の意思決定が二重過程理論と整合的であることを実験室実験によって明らかにしたものである。いずれも経済学的意思決定の特性に関する新しい知見を提供している。したがって、本論文は博士（経済学）として価値があると判断する。