Goal9 Realization of a mentally healthy and dynamic society by increasing peace of mind and vitality by 2050.

Freedom of Mind and Value Co-Creation through Decentralized Data Management

R&D item

2. Decentralized Data Platform for Human Research

Progress until FY2023

1. Outline of the project

We will develop a method for low-cost, longitudinal developmental research with low attrition rates utilizing a decentralized PDS. Specifically, we will establish a research platform for conducting developmental research while multiple independent research institutions share research participants.

We first establish a method of indirect collaboration among three or more research institutes based on decentralized data management, and show that it is possible to efficiently conduct research not only through collaboration among fixed research institutes, but also through dynamic changes in the collaboration structure as research progresses. In other words, a mechanism will be established whereby independent research institutes will operate data from their own perspectives based on decentralized management. This will not be a 5 mere collaboration between two institutions, but will show that research can be developed efficiently while dynamically increasing the number of collaborating institutions as research progresses.

Since the decentralized management of PD (Personal Data) is to manage and operate personal data by the person (his/her PAI) with his/her name in his/her hands, it is especially important to generate new PD useful to him/her and to operate it flexibly under the decentralized management, especially in the field where there are few databases that aggregate PD useful to him/her. It is important to generate new PDs that are useful to the individual and to operate them flexibly under

decentralized management. Therefore, we will demonstrate that flexible control, such as preventing the disclosure of research methods and ideas that belong to the researcher, is possible under decentralized management by aggregating new PD to the person in question and limiting its disclosure to specific collaborators such as the experiment conductor.

2. Outcome so far

- A separate experiment was conducted by Kyoto University on participants in an experiment conducted by Osaka University two years ago. The dropout rate was 56%. The results suggest that maintaining participant motivation and implementing measures such as online experiments are necessary to conduct developmental studies in multiple institutions using conventional methods.
- A study of procrastination and stress in adults (questionnaire survey) found that those who believe that "future stress will not be greater than present stress" are less likely to have serious procrastination habits. In this study, we introduce new indices, "temporal stress" and "temporal well-being," and show that having an optimistic future may contribute to the improvement of procrastination habits.



• We have prepared for the establishment of a public interest corporation "Baby Lab 5.0" aimed at facilitating developmental research by research institutions. (Scheduled to be established on June 3, 2024)

Here begins our new MIRAI

MOONSHO

3. Future plans

In FY2024, long-term and longitudinal developmental studies will be conducted using decentralized PDS. For long-term, longitudinal developmental research, it is essential to operate long-term and securely with data that are named to individuals (children). This is best accomplished using a decentralized PDS. In addition, no previous studies have found a way to safely utilize decentralized data in developmental and cognitive sciences, and this is considered to be a world-leading study. For example, the relationship between parents' daily child-rearing behavior and developmental changes in their children's social cognition is an important issue in cognitive science, and it is expected that new research methods will clarify this relationship.

Performers:

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