2. System Design of Child Care Commons

Progress until FY2023

1. Outline of the project

This Research and Development project aims to establish the requirements for a system that will be necessary to realize Child Care Commons (CCC). To achieve this goal, we will identify a set of functions that should be realized by the system and examine the requirements for technologies that can implement these functions. we will also consider the effect of CCC on parents, their children, and third parties.

Task 3: Create ICT systems necessary for CCC operation

We will support the proactive participation of diverse people (participants) other than parents and children in parenting within CCCs, and the flexible and responsible involvement of participants in their own ways, through digital technology, especially blockchain technology and similar technologies. For example, we consider creating digital tokens that proof the participation of third party, and visualizing relationship between parent, child, and third-party.

The blockchain technology guarantees the existence of an agreement on creating membership tokens and the authenticity of the data on the relationship between parent-children, and participants. It also prevents unagreed creation/revocation of tokens.

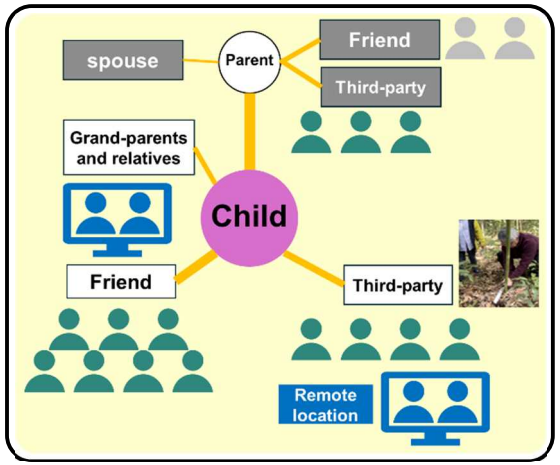
Task4: Evidence and acceptability that support CCC

We will consider the effect of CCC on children, parents, and third parties (participants), and how CCC can have a positive effect on parents, children, and third parties, and examine the evidence for this from the perspective of neuroscience and psychology.

2. Outcome so far

Task 3: Create ICT systems necessary for CCC operations

To design the CCC operation system, we designed the authorization actions to initiate and terminate the relationship between parents, children, and third parties, and created requirements for the recording system, the data sharing system within the CCC for historical data, and the system for visualizing the trust and psychological connections between parents, children, and third-party. We devised a way to express the transformation of the relationship.



Task 4: Examining the benefits of CCC from cognitive neuroscience

A: Clarifying the neural basis of individual characteristics

To extract and estimate individual neurological characteristics in a stable manner, we extracted important information based on brain images obtained by MRI and compressing them to interpretable level. In addition, we obtained additional psychological and behavioral data to prepare for a new individual characteristic estimation method to be implemented in FY2024.

B: Examining the relation between social relationship capital/social networks in early childhood, school-age, and adolescence and subsequent well-being

Surveying children, their parents, and other adults (n = 4,000 in total) about their social relationship capital, we examined the effect of the quality and quantity of third-party involvement on current or retrospective past well-being.

3. Future plans

In the future, we will design a system that integrates the requirements we have established, as well as accumulate evidence on the benefits of CCC and develop an environment that will allow people to participate in CCC with peace of mind.