Decision Making on Robot using Motivation-Desire Model Improvement of Learning efficiency by Autonomous Acquisition the Tasks

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February 2019

- A robot makes a decision using Motivation-Desire Model that imitated the behavior generation mechanism on a human
- Acquire autonomously the acquired tasks by analyzing a reward on the innate tasks and the relationship between each sensor
- Improve an efficiency on task achievement by autonomously acquiring the tasks
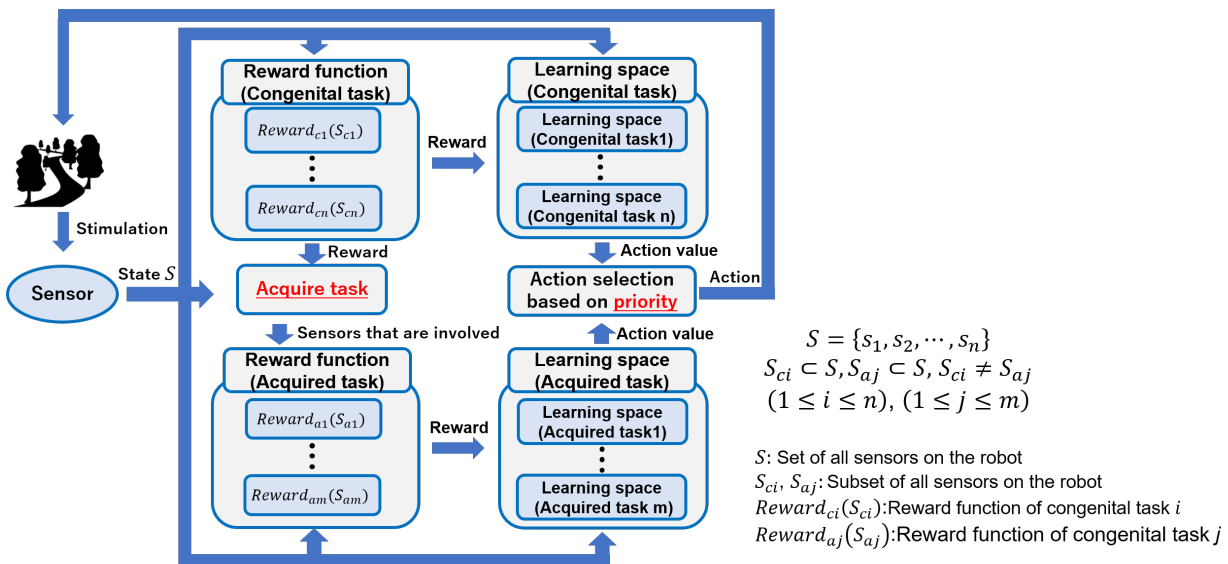

$$S = \{s_1, s_2, \cdots, s_n\}$$
$$S_{ci} \subset S, S_{aj} \subset S, S_{ci} \neq S_{aj}$$
$$(1 \leq i \leq n), (1 \leq j \leq m)$$

S: Set of all sensors on the robot
S_{ci}, S_{aj}: Subset of all sensors on the robot
$Reward_{ci}(S_{ci})$: Reward function of congenital task i
$Reward_{aj}(S_{aj})$: Reward function of congenital task j

Fig.1　Proposed System

$$S = \{s_1, s_2, \cdots, s_n\}, \quad S_{ci} \subset S, S_{aj} \subset S, S_{ci} \neq S_{aj} \ (1 \leq i \leq n), (1 \leq j \leq m)$$

S: Set of all sensors on the robot, S_{ci}, S_{aj}: Subset of all sensors on the robot

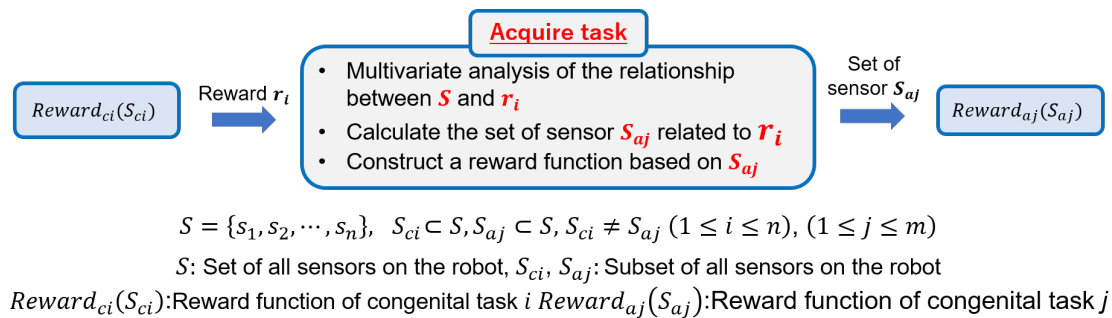$Reward_{ci}(S_{ci})$: Reward function of congenital task i $Reward_{aj}(S_{aj})$: Reward function of congenital task j

Fig.2　Flow of acquire task