**Homeostatic as a Mechanism for Subitizing**

There have been instances of understanding the relationship between spatial skills and mathematical abilities. It is unclear how these mechanisms relate to each other. Thus, I would like to present a biologically plausible model for this by introducing a subitising mechanism in embodied agents. Here, subitising can be defined as how the agent perceives the number of objects in the environment as a group without going through each of them. As such, the model of subitizing can be seen as a form of perception that uses a homeostatic mechanism to move its representation along the number line. Homeostasis is the process of self-regulation where it tends to move towards an equilibrium. In this sense, it can also be seen as a negative feedback control system.

Thus, we would like to introduce a model where homeostatic would be used as an interpretation to how of error between the internal representation of number, that is the number of object that the agent believes it perceives, and the external representation of number, that is the number of a set of objects in the environment, can be minimised to be as close as possible. Alternatively, this process of minimisation between the two models of perception can also be interpreted as form of free-energy minimisation as shown by Karl Friston’s Active Inference framework. In here the internal representation can be defined as an agent’s belief of its position on the number line with the external representation point acting as an equilibrium point.

As conclusion, what we would be showing is a form of homeostatic subitizing mechanism, where we would move it along a representation of the number line based on attractor dynamics. This would involve hypothesis on why and how we have managed to define each part of the model to be working and plausible.