

Poster presentation

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## Development of an animal model and a social behavior assessment scoring method for developmental disorders

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### Background

Autism is recognized as a spectrum including Asperger syndrome and the disorder of social interaction is as central. Various behavioral and cognitive approaches to support autistic children and adults have been developed since the mid-1960s, for example, ABA (Applied Behavior Analysis), TEACCH (Trains and Education of Autistic and related Communication handicapped Children), and more recently RDI (Relationship Development Intervention) programs. These educational and therapeutic approaches, however, have been poorly shaded by the light of brain science on development of social empathy mainly because of lacking good animal model. Here we have introduced an animal model which allows us to investigate the correlation of social behavior and brain development.

### Materials and methods

We used domestic chick (*Gallus domesticus*) and common marmoset (*Gallithrix jacchus*) as social behavior models, since both animals are visual-sensing dominant and rich in vocal communication like human. Domestic chick is a precautionary bird and suitable for investigating the development of peer relationship independent from parenting.

### Results

We have established the behavioral assessment scoring method of chick and marmoset sociality based on multi-

dimensional vector space expression of behavior markers as variables. We found that chick learns social behavior through three different mechanisms, imprinting, predisposition, and synchronization through a common motivation.

### Conclusions

Starting from chick behavior study, we have expanded the definition of sociality into marmoset behavior study with the aim of finding a common assessment scale for social empathy between human and other animals. Thus, we could explore the relationship between development of social behavior and brain structure/function.

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### References

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