



## **The 1st International Conference on Cognitive Aircraft Systems – ICCAS**

March 18-19, 2020

<https://events.isae-supaero.fr/event/2>

### **Scientific Committee**

- Mickaël Causse, ISAE-SUPAERO
- Caroline Chanel, ISAE-SUPAERO
- Jean-Charles Chaudemar, ISAE-SUPAERO
- Stéphane Durand, Dassault Aviation
- Bruno Patin, Dassault Aviation
- Nicolas Devaux, Dassault Aviation
- Jean-Louis Gueneau, Dassault Aviation
- Claudine Mélan, Université Toulouse Jean-Jaurès
- Jean-Paul Imbert, ENAC

**Permanent link :** <https://doi.org/10.34849/cfsb-t270>

**Rights / License:**

[Creative Commons Attribution-NonCommercial-NoDe](https://creativecommons.org/licenses/by-nc-nd/4.0/)

# Sense of agency during human-robot interaction

Dr BERBERIAN, Bruno (ONERA)

## Content

The sense of agency experienced in joint action is thus a central subjective dimension of human sociality. In a series of 3 experiments, we explore the development of we-agency when interacting with robot. Combining a Social Simon

task with the intentional binding effect, we explore (1) the emergence of self and we-agency in joint action and (2) the impact of the nature of the partner (human Vs Social robot Vs Computer) on the development of we-agency.

Our two first experiments show that a vicarious sense of agency developed when co-acting with another human agent but not with a computer. Moreover, EEG data indicated a decrease in task involvement when engaged in human-computer interaction. A third experiment shows that the social nature of the artificial agent can modulate the development of we-agency, but also that the emergence

of a we-unit can alter the development of the self-agency. Taken together, the different studies presented suggest that the science of agency provide us new conceptual tools and measures to analyze agent-system interaction.

**Keywords :** Man-machine cooperative techniques