

SILVIA MAROCCO



Post-Doctoral Researcher
Department of Social and Developmental Psychology
IDEaCT Social Lab
Sapienza University of Rome, Italy
silvia.marocco@uniroma1.it

Cultural Historical Activity Theory-related research

My interest in third-generation Cultural-Historical Activity Theory (CHAT) stems from my broader research focus on human/computer interaction.

Indeed, as a Social Psychologist and User Researcher at the [IDEaCT Social Lab](#), an interdisciplinary laboratory situated at Sapienza University of Rome, I am engaged in the development of innovative, user-centered technological services using qualitative methodologies, such as *Service Design Thinking*.

In particular, during my Doctoral research project I aimed at contributing to the development of a human-centered methodology for the design of Multi-Actor Decision Support Systems (MADSS) based on Artificial Intelligence, moving beyond a purely technical viewpoint, and incorporating social and contextual dimensions of technological integration (Talamo et al., 2021, Marocco & Talamo, 2022; Marocco et al., 2024). The research focus was directed to provide a theoretical framework and practical guidelines for enhancing the user-centered design of MADSS in the complex field of *Investments in Human Capitals* (IHC), which are investments in intangible assets, including an individual's knowledge, skills, and abilities (Schultz, 1961).

In IHCs, the aspect of Decision-Making (DM) becomes even more critical since different actors, individuals as well as groups of individuals or representatives of enterprises with varying behaviours and agencies, are involved. For this reason, IHC cannot be considered a one-sided investment, but a multi-actor investment that implies a specific process of DM, a Multi-Actor DM (MADM; Marocco & Talamo, 2022; Marocco et al., 2024). In fact, this kind of DM does not involve single individuals, neither a group of decision-makers belonging to the same social context, but different actors, or groups of different actors, who start from non-coinciding objectives and that, through a process of negotiation, should make their goals *compatible* –

able to coexist -, *coordinable* – able to complement each other's -, and *convergent* – able to come closer together -, to reach a rewarding and mutual agreement.

From the literature analysis, I have identified the specificities of the IHC field, recognizing its complexity as a multilayer process (Marocco & Talamo, 2022). This complexity demanded an inclusive theoretical framework capable of modeling the DM behaviors of all the actors involved in the decision process. While Cognitive Psychology investigates individual and intrapsychic processes, and Social Psychology, particularly the branch of Social-Cognition, examines social influence and group biases, Socio-Cultural Psychology, and more specifically CHAT, shifts the focus of analysis from the individual or the group to the “*activity*” itself. Moreover, due to its interactive and multi-voiced nature, the third generation of CHAT (Engeström, 2001) can be considered as the most suitable model to explain the MADM construct, since it addresses the challenge of developing “*conceptual tools to understand dialogue, multiple perspectives, and networks of interacting activity systems*” (Engeström, 2001, p. 135).

Furthermore, in the final phase of my research process, the third generation of CHAT was employed to develop the MADM model, a comprehensive and systemic tool derived from the outcomes of the *Service Design Thinking* process. This framework was created using the emerging results of *Service Design Thinking* tools, emphasizing the significance of comprehending the activities individuals undertake to achieve their objectives and capturing all the specificities - namely their *rules, tools, division of labor, community, objectives, and objects* - that influence each actor's DM process and impacts the creation of interobjectivity. This MADM model has proven to be essential in addressing two challenges:

- Investigating and modeling human DM before translating it into technological design and development, guaranteeing that agency is effectively delegated to AI in accordance with the human intentions of those who will benefit from the service and that technology effectively serves users' needs.
- Providing a holistic and systemic view of the research results generated from the *Service Design Thinking* process to the provider organization, without neglecting the analytical aspects and the specific users' requirements.

To facilitate the integration of various components within the activity systems, I have provided specific instructions (**Fig.1**).

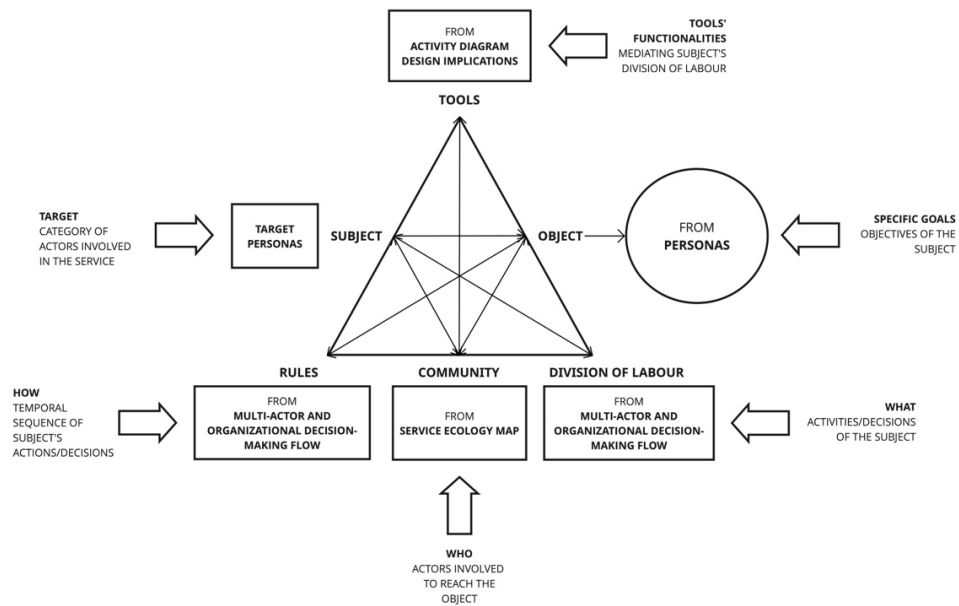


Fig.1. Instructions to convert Service Design Thinking outcomes into Activity Systems components

These guidelines assist in the transformation of data analysed by using *Service Design Thinking* tools into elements of the MADM Model (Fig. 2), or the activity systems in interaction (Marocco et al., 2024).

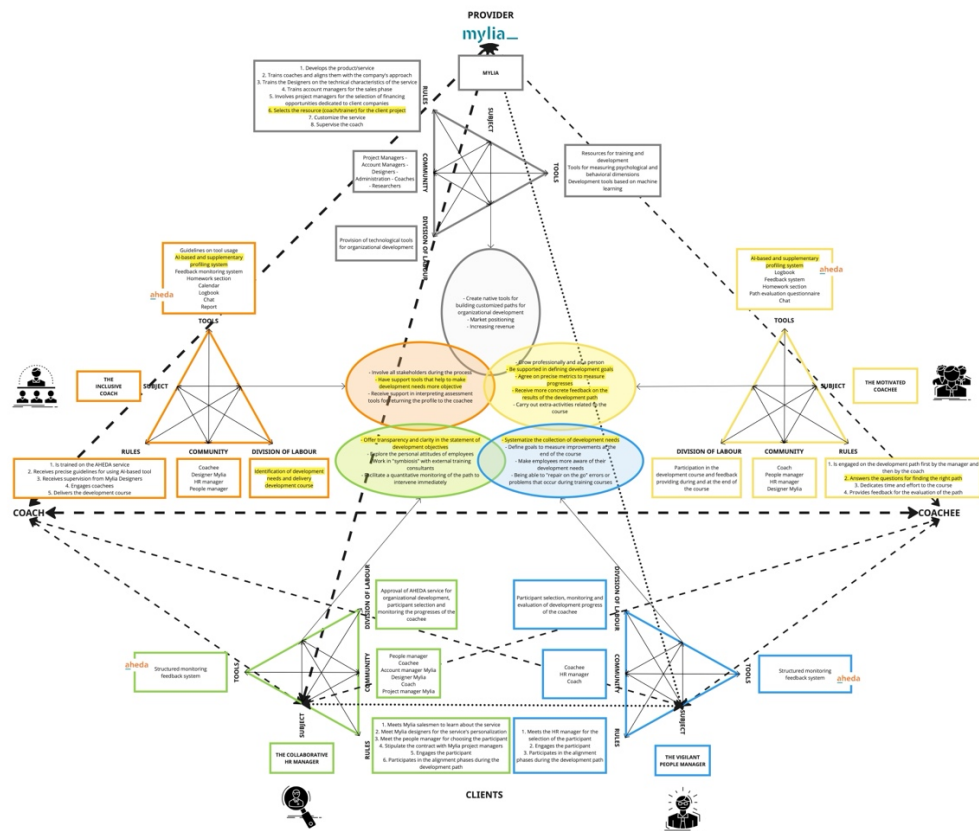


Fig.2. An example of MADM Model within the field of IHC

In conclusion, this research strongly contributes to the advancement of theory by blending research and service design tools. This employed methodology, indeed, leverages these *Service Design Thinking* tools to collect and structure data within a theoretical model commonly employed in the study of interactions between individuals and technology.

References

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