Morphological and movement similarity in HRI dyadic situations

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Schizophrenia, autism, or social phobia are typically accompanied by social interaction deficits. The objective of the AlterEgo european project (www.euromov.eu/alterego) is the creation of a flexible interactive cognitive architecture, implementable in various artificial agents — avatars and humanoid robots - allowing a continuous interaction with patients suffering from social disorders by virtue of changes in behavioral (robot-based) as well as morphological (avatar-based) properties of that agent. In this presentation, I will present the scientific foundations of the AlterEgo project and its main predictions, grounded in the Similarity concept, originating from Neurosciences, Robotics, and Social Sciences. I will present the main results of the project, which show that patients functionally adapt their social motor interaction when they interact with agents (real or artificial) morphologically and behaviorally similar to them, as a route toward more natural interactions. These results have consequences for the implementation of digital cognitive architectures in the clinical context, and for the rehabilitation of socially deficient patients.