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The Creation and Change of Social Networks

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Recently, epistemic-social phenomena have received more attention from the logic community, analyzing peer pressure, studying informational cascades, inspecting priority-based peer influence, modeling diffusion and prediction, and examining reflective social influence. In this presentation, I will contribute to this line of work and focus in particular on the logical features of social group creation. I pay attention to the mechanisms which indicate when agents can form a team based on the correspondence in their set of features (behavior, opinions, etc.). Our basic approach uses a semi-metric on the set of agents, which is used to construct a network topology. This structure is then extended with epistemic features to represent the agents' epistemic states, allowing us to explore group-creation alternatives where what matters is not only the agent's differences but also what they know about them. The logical settings in this work make use of the techniques of dynamic epistemic logic to represent group-creation actions, to define new languages in order to describe their effects, and to provide sound and complete axiom systems. This talk is based on joint work with Fernando Velazquez Quesada.