Collaborative Discussion: Agent Communication Languages

by Maria Ingold

Peer Response

Thank you for your initial post, Dominic. I concur that KQML appears to be an older model (Finin et al., 1994). It seems to be superseded by Foundation for Intelligent Physical Agents' (FIPA) FIPA-ACL (Poslad, 2007). FIPA-compliant middleware includes Java Agent Development Framework (JADE) and Smart Python multi-Agent Development Environment (SPADE) (Donancio et al., 2019). I also concur that the choice of language and middleware should reflect the requirements. I'm curious what languages you prefer to Java and Python, and if you have another agent communication language (ACL) that you think would be better in terms of middleware (Poslad, 2007). I have not yet investigated PyKQML.

After my initial post, I discovered chapter seven in Wooldridge (2009). While not part of our reading, paragraphs three to five seem to be the inception of this particular assignment. It essentially says that in an object-oriented programming language like Java, if you have two objects, object one and object two, and object one has a public method, then object two can invoke that method whether object one wants it to or not. With agents, there is no concept of invoking a method. Agent one can have the capacity to perform an action, but agent two cannot just invoke it. Agents have control over their own state and behaviour—they are autonomous. Agent one can decide that performing that action is not in its best interest.

So, ACLs like KQML seem more like communication between people. Which is presumably where Searle's (1969) speech acts come in—ensuring the communication is clear, even if the agent being asked choses not to perform.

References:

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