Back to the Future for Dialogue Systems

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In this talk I will revisit the plan-based approach to dialogue and argue that it is (still) the way we should be thinking and building future dialogue systems. With a big whiff of nostalgia, I will present our progress on building a plan/BDI-based collaborative dialogue system that reasons its way through a dialogue. Founded on James’ and my PhD theses, the system overcomes many of the limitations of today’s so-called “slot-filling” systems by reasoning about its interlocutors’ speech acts in terms of beliefs, (persistent) goals, and intentions, using part of the logic of intention that Hector Levesque and I did eons ago. The system collaborates with its user by inferring the user’s plan, finding obstacles to its success, and planning actions to overcome those obstacles. It can explain why it said what it did by referring to the plan that led to its speech act(s). The system also can conduct multi-party conversations in virtue of reasoning about the different parties’ mental states. I offer this system as an existence proof that our approach is not only viable, but one that may have considerable advantages going forward.