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A Reading of
A. Woodward, J.A. Sommerville and J. J. Guajardo's
How Infants Make Sense of Intentional Action

Woodward et al. argue for a new way to look at intent-reading in infants. They oppose the view that this ability is not acquired until the end of the first year, but also do not agree with two notions common in the opposing innate intent-reading school: One - that this ability is based on simple perceptual clues (such as auto-motion) and the other that we are innately wired to react to these clues.

The most common claim regarding infant's detection of intentional action is that it is based on the presence of self-propelling motion or, in variants of this theory, goal-oriented or biologically styled motion. Using a visual-habituation framework Woodward et al. show that auto-motion or goal-directed motion is not a distinctive factor in intent-reading, since infants do not usually read intent into a plastic claw that performs the same motion and action as the human hand, which was attributed intent.

Further on, the paper describes experiments that indicate that infants use textures for intent vs. non-intent action distinction. This might lead to the conclusion that texture is a perceptual clue that is used for this task, still leaving the door open to an innate perception based theory of intent-reading.

Further testing, however, shows that artificially textured hands can be learned to have intent, indicating a learned theory of intent. Moreover, learning of composite motions that lead to an overarching goal, and better classification of often-perceived actions also indicate an adaptive, experience-based mechanism for intent-reading. This ability is present at a very early age (several months).

The experiments described in this paper are very revealing for our understanding of intent-reading, portraying this ability as far more complex than initially thought. Attributing an intent to another agent is - of course - a tremendously valuable trait, but given the complexity of the class of intent-laden agents, it makes a lot of sense to allow shaping and learning to create the tools for this classification task.

If we are looking at producing intent-readable actions and motion in collaborative machines, I'm not sure how much we can draw from Woodward's experiments, since they concern themselves mainly with infants. It seems clear that the adult mechanisms for intent-reading are much more refined, but also much more lenient. I believe that the way

adults read intent is actually *more* favorable to our goals: in addition to being less perception sensitive, I think that there is an overall lenience as to what is construed as intent action in adults. We usually will attribute intent to anything that remotely acts with a notion of intent, even if it is a mechanical entity. This might be due to the fact that our lives are immersed in machinery from an early age.