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Verb tense and aspect in scene descriptions in a humanoid robot

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Abstract: The present research implements a more human-like system of language in a humanoid robot model through improved use of grammatical constructions in described events. The present demonstrations show how the iCub humanoid robot is taught to recognize and use verb tense and aspect more appropriately. While hearing spoken verbal descriptions and watching visual displays of simple events involving objects moving on a table, the iCub robot begins to link the correct grammatical constructions with the appropriate information from its visual inputs and perceptual primitives. Thus, when it views a scene, the iCub robot is more likely to use the correct linguistic constructions to accurately describe it. In this way, past events are accurately described in the past tense, whereas ongoing events are described in the present progressive. Experimental evidence shows increased accuracy of scene descriptions for the iCub humanoid robot after learning phases involving live human-robot interactions. Supported by FP7 CHRIS & Organic, and ANR Comprendre and Amorces.