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Generating body images from distributed word representation

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Abstract

Communications are mediated by symbolic or quantitative representations. Symbolic interfaces use discrete representations such as language and icons, while quantitative interfaces use physical quantities such as speech and movement. The two media are processed complementarily in human-human / human-machine communications. This study proposes a method of transforming these two representations, especially for generating body gestures. Our method is based on distributed representations of words, in which the size image for words is computed from the axis whose poles correspond to “small” and “large” word images. In addition, the size image of the words is physically implemented as robot gestures. The proposed methods were evaluated by two online surveys. Summarizing the results, the authors claim the potential of developing artifacts exchanging qualitative and quantitative aspects of word representations.