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Priming Dynamic-Kinematic Routines Using Spatial Language

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Abstract: Along with using geometric information to define spatial terms such as “in”, Coventry and Garrod (2004) have proposed the use of dynamic-kinematic (DK) routines which relate to how two objects interact (kinematic) over time (dynamic). For the spatial description, “The penny is in the bowl,” the penny is contained by a bounding box around the bowl as well as the DK location-control routine that if the bowl moves, so will the penny. In two experiments a speeded prime/ probe picture-sentence verification task was used to gather evidence for the existence of DK routines. The first experiment found evidence for priming location-control for the preposition “in”. The second experiment examined location-control routines for both “in” and “on” using the same prepositions for both location-control and embedded spatial relationships. A significant response time benefit for priming location-control routines was found. These experiments provided evidence for priming location-control routines independent of semantic priming.