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The effect of a speech target's motion on its recognition in the presence of simultaneous competing sentences

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Prior knowledge of where to listen significantly improves speech recognition of target sentences presented in the presence of distracter sentences coming from different locations [G. Kidd et al., J. Acoust. Soc. Am. 118, 3804-3815 (2005)]. The present study extended the work of Kidd et al. by measuring the effect of a target's motion on its recognition when competing messages are present. In an anechoic chamber normal-hearing subjects were presented with three simultaneous sentences from the CRM corpus and were instructed to indicate key words from the target sentence (identified by a call-sign previously known to the subject). In the stationary condition the three sentences came from -60°, 0°, and +60° azimuth. In the moving condition, the target source moved during its on-time (e.g., from -60° to 0°) while the two distracter sentences were stationary (e.g., at $\pm 60^{\circ}$). In both cases, subjects either knew in advance where the target would be (Certain Condition) or did not know (Uncertain Condition). It is hypothesized that motion of the target will result in a release from informational masking. That is, the detrimental effect of location uncertainty observed with the stationary targets will be reduced or eliminated when the target is moving.