Faulkenberry, T. J., Cruise, A., Lavro, D., & Shaki, S. (2016). Response trajectories capture the continuous dynamics of the size congruity effect. *Acta Psychologica, 163,* 114-123.

(reviewed by Student Name)

In their paper, Faulkenberry et al. (2016) conducted three experiments designed to tease apart two competing models of the size-congruity effect. The size-congruity effect is a Stroop-like effect that occurs when people are asked to "find the larger" of two numbers with differing physical size. One account of the size-congruity effect is an early interaction model, where the interference between physical and numerical magnitude occurs because of representational overlap early in the processing stream. A competing account is the late interaction model, which states that the interference occurs because of response competition that occurs later in the processing stream.

In their three experiments, Faulkenberry et al. (2016) used computer mouse tracking to track participants hand movements while they performed a number comparison task on a computer screen. In these experiments, half of trials consist of congruent pairs, where the number with larger magnitude is also the physically larger number. The other half of trials are incongruent, where the number with larger magnitude is physically smaller (people are generally slower on these trials). In Experiment 1, Faulkenberry and his colleagues demonstrated that the size-congruity effect can indeed be exhibited in the hand trajectories, as the average trajectory for incongruent trials was significantly curved toward the incorrect answer. In Experiment 2, they extended this result to show that the curvature increased as a function of numerical distance (that is, the curvature was greater for number pairs which were 4 apart than those which were 1 apart). These two experiments demonstrated that the size congruity effect may be reflecting response competition, supporting the late interaction model. Finally, in Experiment 3, they used an instructional manipulation to attempt to find early response time differences between congruent and incongruent trials, but once again, they showed that the differences occurred solely in the movement times, not initiation times.

In all, Faulkenberry et al. (2016) established support for a late interaction model of the size-congruity effect. This result indicates that the interference between numerical and physical magnitude occurs because of dynamic response competition, not because of early representational overlap.

Grading rubric for article reviews:

- Provide correct APA reference (1 point)
- Paragraph giving sufficient background to understand problem (2 points)
- Paragraph explaining methods/experiments in paper (3 points)
- Paragraph giving a summative interpretation of paper's result (2 points)
- Review uses appropriate scientific style with correct grammar and spelling (1 points)
- Review is concise, consisting of no more than 400 words (1 point)
- Total = 10 points

Tips:

- Use active language – don't use passive voice! (i.e., don't say things like "A study was done…")
- Be brief -- don't use three words when two would suffice.
- Focus on big picture and substance – don't give statistical details.
- Write for an audience of other graduate-level behavioral scientists, but not necessarily specialists.