Review of: "Throwing is affected by self-movement"

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Potential competing interests: No potential competing interests to declare.

This is a very interesting paper. I really enjoyed the research questions they are exploring. However, I have several suggestions that I believe would strengthen the paper. There were too many time, I had to read and reread in an attempt to understand what the authors where trying to say.

Abstract –

In Experiment 1, participants made distance estimates at 6 m, revealing a consistent compression effect and larger distance estimates during running.

Does larger mean they perceived target further away consistent with the statement ‘targets are perceived further away when running on a treadmill compared to when standing,’ as mentioned in the first paragraph?

Introduction –

An interesting case is that of basketball players when they have to pass the ball to the goal while moving forward – this was confusing – I suggest using the phrase ‘shoot the basketball’ while moving forward

In the last paragraph of the introduction on page 2, I suggest relating the concept introduced in Eq 1 to the idea of time-to-contact. In the Gibsonian view of perception, the basketball player is relating their self-motion relative to the basketball hoop while preparing and executing the motions to produce a successful shot. The relationship between the player’s motion and the hoop being directly perceived suggesting the player is not acting upon information that is already obsolete. I’m not suggesting Gibson was right or wrong, only that it seems his ideas directly relate to the issue being explored in your experiment and deserve being mentioned.

Consistently with Santillán and Barraza’s results, this should be ‘Consistent with . . .’

Methods –

This method involved establishing a correspondence between the distance to be estimated in the sagittal plane (target) and another distance in the frontal plane (indicator).

Did this technique require that the subject turn their head to see the different targets/indicators?

The test conditions were 1) Standing (on the treadmill), and 2) Running (at a speed of 6 km/h on the treadmill). Based on

our previous experiments, we expected, in both cases, an underestimation of the target distance consistent with the compressive effect shown by Wagner (1985).

This statement confused me given the this statement in the Abstract – ‘Building upon previous research that demonstrates that, in an open field, targets are perceived further away when running on a treadmill compared to when standing,’

Participants were led to the treadmill and then explained what they should do.

English needs correct for this sentence.

Given you had 5 female subjects, you should remove the sexist language ‘he’. Move to the generic ‘they’ or ‘the subjects’

The procedure consisted of moving the indicator linearly, from a position close to the target, until the participant considered that his egocentric distance from the target was similar to the exocentric distance target-indicator, at which point he had to say "stop".

How does this procedure relate to the frontal plane mentioned above – ‘and another distance in the frontal plane (indicator).’? Does this mean the indicator moved parallel to the target for a distance until the subject indicated that distances was same distance as the subject from the target? If so, that should be made more clear, if not, what was done needs to be made more clear.

Results – Experiment 1 –

What do the crosses in Figure 1 represent? Are those outliers? If so, were those values included in the t-ttest computation?

In Experiment 2 it is not clear if the subject got to look at the target prior to each throw and then their vision was occluded or they looked at the target, their vision was occluded and they made 9 consecutive throws? This should be made clear.

If I am reading Figure 3 correctly, combined with the text, the subjects were unable to throw accurately but in the Abstract it was written that ‘However, participants exhibited accurate throwing performance regardless of running or static conditions, indicating that the altered distance perception did not affect their ability to accurately throw objects.’

I am unclear, what is throwing distance at ground height as represented in Figure 4. What procedures were used to obtain this data?