Review of: "Effect of Self-Movement on Visually Directed Throwing: Implications for Distance Perception"

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Effect of Self-Movement on Visually Directed Throwing: Implications for Distance Perception.

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TITLE

- this version of the title is more correct than the previous one

ABSTRACT

- *Targets are perceived further away when running on a treadmill compared to when standing*when running on a treadmill **than** when standing
- *We propose a m odel based on the idea that perceived speed of locomotion is the result of mutually inhibitory interactions between visual and proprioceptive motor information.:* The study's goal was to look at the effect of running on distance estimation. The source of the concept for a model that can explain the perception of locomotion speed is unknown.

INTRODUCTION

- *interactions between our senses and the perception of our self-movement.:*The interaction between information from the surrounding environment and information regarding body movement. Talking generally about "senses" is problematic since perceptual experience is the outcome of integration of inputs (proprioceptive and exteroceptive) at the level of the central nervous system.
- *Df =Di−v·Δt Eq.(1):* the distance estimated during the "snapshot of the scene" (Df) is necessarily greater than the distance at the time the action was performed (Di). In the equation shown, however, Df is less than Di (if v·Δt>0). If this were the case, then ance Eq. (3) should be altered.
- *where Di* ***y*** *Df are the distances at the moments :*what is the "y"? —>**AND**
- *Δtis the time elapsed between***Δt is**

GENERAL METHODS

Location and apparatus

- *To manipulate the perceived distance, we utilized a treadmill*: A treadmill (PROTEUS MTM-5600 with digital speed selector) placed on a platform with steel wheels mounted on tracks was used for distance estimates during the run. It would be better not to include the "result" in the methods and materials section. We do not yet know whether the treadmill "manipulates" distance perception.

Experiment 1

- *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)*: The method actually involves estimating two (three?) different distances: 1) the distance between observer and "target" (on the sagittal plane), 2) the distance between "indicator" and "target" (on the frontal plane), and, consequently, 3) the distance between observer and "indicator" (on the diagonal, which corresponds to the hypotenuse of a right-angled triangle at the indicator).
- *In the case of motor stimulation, he was adapted to a running pace of 6 km/h for one minute, and then he had to perform the task while running at that speed.*: For the test condition while running on a treadmill, participants completed an adaptation phase at a speed of 6 km/h for one minute, followed by the task while running at that speed.
- *Participants were asked to indicate when they considered their egocentric distance from the target to be similar to the measured exocentric distance between the target and the indicator.:* Was the indicator held by the operator in the same frontal plane as the circle? In this case, the subject had to estimate the two "cathexes" of a triangle bounded by the subject-circle-indicator. This kind of technique makes the assumption that the estimation in the frontal plane and sagittal plane are both reliable. Because three-dimensionality is a result of two-eye vision, it is possible that the measurement on the frontal plane (depth) is estimated differently from the measurement on the frontal plane (in which depth is not involved).

Results

- *The boxplot of Figure 2 shows the matching distance for both conditions.:* which distance? that between subject and basket or that between basket and marker?
- *shows the well-known compressive effect of distance perception of the in-depth dimension (Wagner, 1985)*: the reference cited in the text is not in the bibliography. I became aware of this deficiency because I was eager to understand more about how people perceive depth in space. I have not verified if the bibliography is missing any more references. Given that the subject is viewing the indicator in the same plane as the basket, the compression effect will unavoidably have an impact on the distance between the indicator and the subject. In other words, the compressive effect of the in-depth dimension's perception at a distance is likewise invariably present when the subject must decide where the indicator is.
- *Figure 2.* To better comprehend that the sample underestimated the distance, it would be clearer if a line in the graph showed the distance to the goal.
- *the matching distance for the running condition is larger than that obtained for the standing condition.*: Compared to the standing condition, the matching distance for the running condition is greater. Alternatively, the predicted distance during the run is more accurate.

- *we conducted all of our statistical analyzes using the entire dataset.*: Does this imply that you've taken into account the outliers as well? Has additional research been done on the outliers, which all appear to gravitate towards values close to the target distance?

Experiment 2

- *The results of Experiment 1 showed that running on a treadmill influences distance perception and leads to larger distance estimates (DOR effect)*: This claim can imply that estimating distance while jogging on a treadmill causes one to overestimate the distance between the subject and the objective (in this example, > di 6 m). This is not the case; rather, distance estimation during running is more accurate respect to that done from standing

DISCUSSION

- *demonstrating that participants overestimate egocentric distance when running on a treadmill compared to when they are standing. This phenomenon suggests that physical movement can have a significant impact on spatial perception, leading to a distortion in the estimation of distances close to the individual.*: Subjects more accurately estimate the distance between themselves and the target rather than overestimating it. Speaking of "overestimation" is incorrect because it has a negative connotation; rather, the test result is better when subjects run.

> *There is no conclusion to the article.*
> *Additionally, it is not clear whether the research question, which was also vague at first, has been answered.*