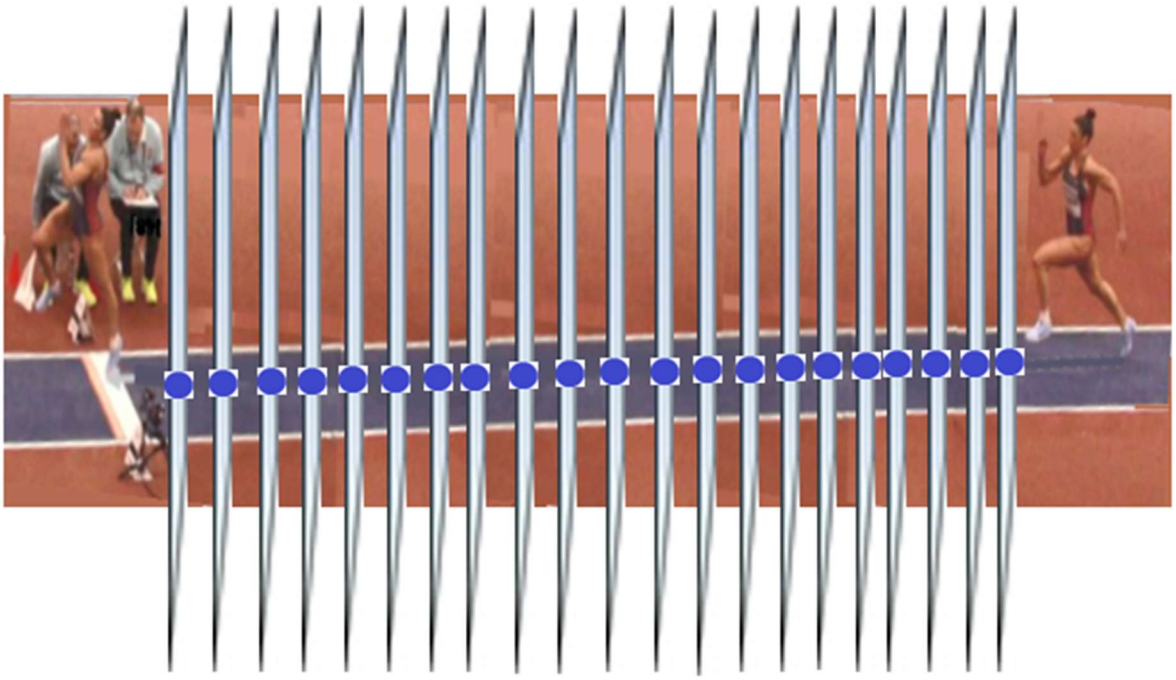
WALKING/RUNNING

Prior to an approach within the long jump we always first construct a perceptual image of a latent action trajectory shape out of the perspective of our whole body – The scientific evidence



Caught In A Line
The explanatory model of all motoric movement actions

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Introduction

The explanatory model of the motoric movement action provides a universal explanation of all functional perception processes within all goal-directed actions. It demonstrates that performing any conceivable action always requires the simultaneous perception of three autonomous foci[1], in accordance with J.J. Gibson's theory, which includes both the movement of the animal/organism and the movement of the environment. In relationship to an approach towards the take-off board within the long jump, one autonomous focus remains engaged with (the movement of) the take-off board, which universally represents a catching action. The other two autonomous foci are concerned with the perception of movement within the egocentrically executed action, i.e., the movement our own (complete) body along an external action trajectory shape (toward the take-off board), which universally represents a throwing action.

This article specifically focuses on the two foci involved in the egocentric throwing action of guiding our body to, for example, a take-off board in relationship to an approach within the long jump. The explanatory model shows that every conceivable throwing action requires a compelling cooperation between an autonomous internal focus and an autonomous external focus. This insight, that two autonomous foci are present instead of a single undivided motor action, not only allows a final and ending specification of all individual perception processes but also reveals as a novelty that a coupling within the egocentric throwing action itself is capable to occur[2].

The explanatory model of the motoric movement action thus provides a complete description of the *tau*-coupling process, wherein the essence of the task, the primary focus, is executed through (the perception of) the movement of our (whole) body over a pre-planned action trajectory shape between the beginning and the end of the approach toward the take-off board[3]. This perceptual image is therefore determined in advance within a tactical consideration and involves identifying the future sequential positions our (whole) body must occupy to achieve a successful action. Sequential positions of any object effectively always create line segment shapes, and when the action is actually executed, the current position of our body is going to fill in that perceptual image step by step. Thus, it can be observed within a line segment shape that the *gap* of the latent positions P gradually disappears and, in full accordance with the findings of D.N. Lee, produces the *tau*-value, which plays a crucial role in the completion of the motor action in cooperation with the secondary focus[4].

The explanatory model of the motoric movement action partly relies on logical reasoning but also presents scientific evidence. This chapter provides scientific proof that within an approach within the long jump, we always first create a perceptual image of a latent successful action trajectory shape toward a take-off board out of the perspective of our whole body before we actually perform any action.

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[1] The cortical streams mediate the grasping of a cup equal as they mediate within the nerve spiral (youtube.com) https://www.youtube.com/watch?v=QP4vPVAw-Yg

[2] D.N. Lee did indeed identify the *tau*-value associated with the primary focus, but he considered the egocentric action as one indivisible whole. His lifelong quest to find the phenomenon it should be connected to remained unsatisfied because he never realized that the coupling occurs within the egocentric action itself.

[3] https://www.researchgate.net/publication/379513205_Random_motor_leg_activity_implicitly_induces_an_internal_and_an_external_focus_-_The_scientific_evidence_how_two_autonomous_foci_arise_within_walking_and_how_their_roles_evolutionarily_have_reversed

[4] https://www.researchgate.net/publication/375792889_The_execution_of_an_external_action_trajectory_shape_over_which_the_entire_body_moves_dictates_all_internal_sensorimotor_perception_processes_The_tau-coupling_process_within_walking_demonstrates_that_

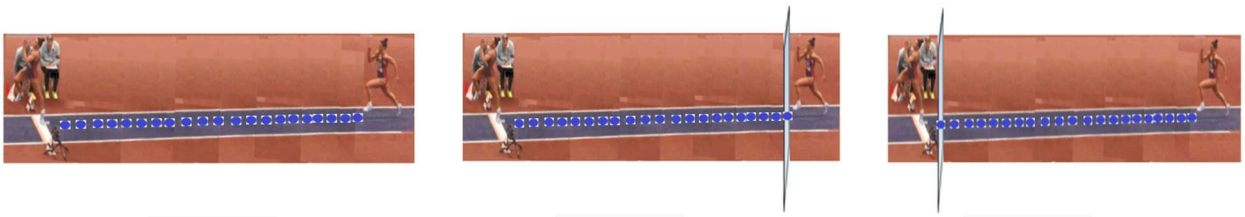
The scientific evidence

The evidence is very straightforward. You can verify it yourself through an empirical study where you are the test subject or you ask a test subject to execute approaches within a long jump. The only instruction given is to only execute an approach if the test subject believes there is a realistic possibility of actually passing the take-off board.

Images: The scientific proof is based upon the competence to visualize a giant huge glass shopping window. The left image shows a normal dimension of such a window. In relationship to the scientific proof you need to magnify that image 10 to 20 times. Like in the right image.

Choose a random long jump pit c.q. a random runway with takeoff board, and create the following conditions:

Situation 1:	Do not alter the environment (zero measurement). Let the test subject execute the long jump normally.
Situation 2:	Place a giant huge glass shopping window (height 20 meter x width 30 meter) between the athlete and the take-off board, close to the athlete.
Situation 3:	Place a giant huge glass shopping window (height 20 meter x width 30 meter) between the athlete and the take-off board, close to the take-off board.
Situation 4:	Place a giant huge glass shopping window (height 20 meter x width 30 meter) between the athlete and the take-off board, at any random position P.



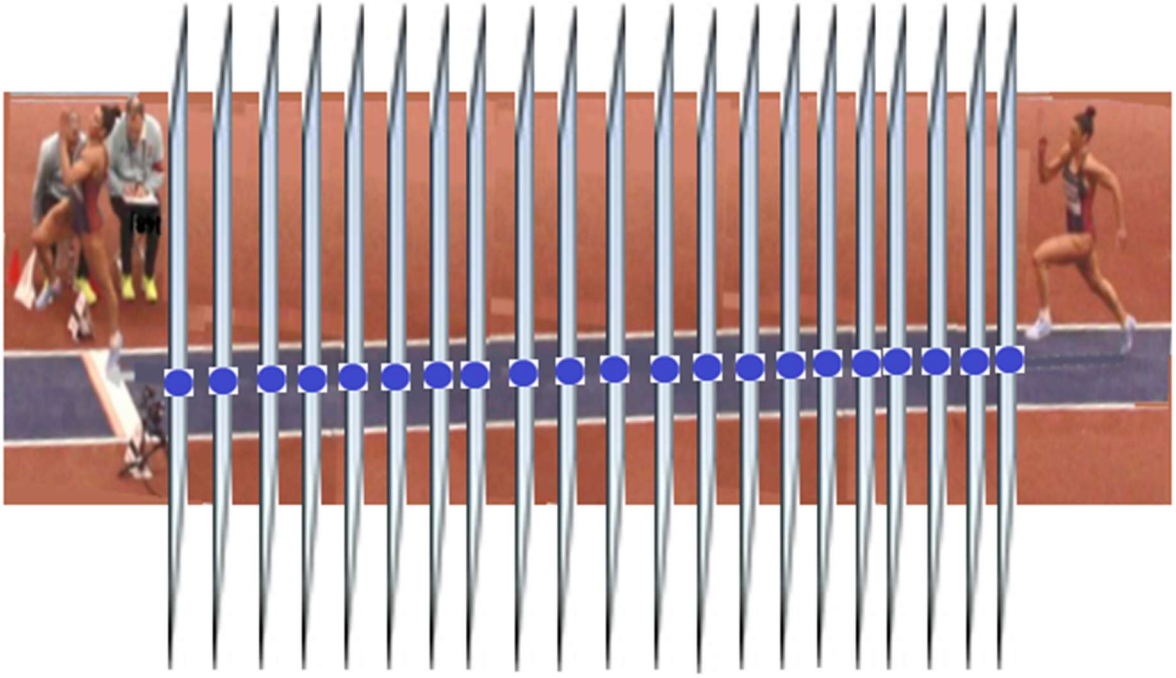
Situation 1 Situation 2 Situation 3

Images: In situation 1 a test subject will normally execute the approach toward the take-off board. In situations 2 and 3, where a giant glass storefront is placed between the athlete and the take-off board, the test subject will not start a running action with the intent to pass the take-off board. This is because there is *one* (!) position P that is perceived as blocking the whole body.

Conclusion:

In situation 1, you and/or the test subject will just execute approaches toward the take-off board. In situations 2, 3, and 4, you and/or the test subject do not initiate a movement action with the intent to actually pass the take-off board. Situations 2 and 3 do not provide significant insight on their own, but

situation 4 clarifies everything. Whether the giant glass shop window is placed near the athlete or near the take-off board makes no difference to the test subject. If there is a large shop window anywhere clearly present, the test subject will not initiate an approaching action with the intention to end up across the take-off board. This applies to every conceivable position P of the shop window, from the very first position P(0) near the athlete to a shop window occupying the last position P(n) just before the take-off board.



Situation 4

Image: In situation 4, it becomes clear that prior to the actual execution, we consider all consecutive *future* (!) positions of our whole body. It doesn't matter where the shop window is positioned between our body and the take-off board; the action is not performed. Mathematically, one can argue that an uninterrupted series of consecutive positions P creates a line or line segment shape (action trajectory shape). The image provides a perfect visual representation that within the approaching action, we first form a perceptual image of the entire latent action trajectory shape before we actually execute anything.

This means that we assess every position P(0-n) between our body and the take-off board beforehand, clearly determining whether each position P allows the whole body to pass through so that it can ultimately cross the take-off board. In relationship to which it can be observed that if one position P is not *empty* (!), the mission is aborted. Upon which you can draw the factual conclusion that we will have *to look at* (!) c.q. we will have to perceive every position P(x) between the beginning of the approach and the take-off board beforehand if that specific position P(x) is also allowing the physical dimensions of our whole body to pass. Mathematically, an uninterrupted series of consecutive positions P can be designated as a line or line segment shape (action trajectory shape). Which completes the scientific proof that within the approach within the long jump, we first form a perceptual image of the entire latent action trajectory shape out of the perspective of the whole body before we actually execute anything.