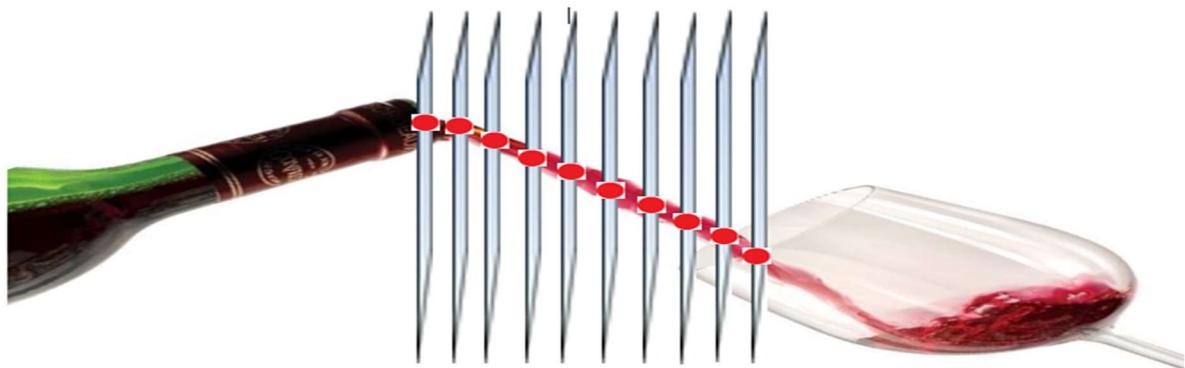


Prior to pouring we always first construct a perceptual image of a latent action trajectory shape of wine out of the perspective of the bottle opening – The scientific evidence

POURING

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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 foci¹, in accordance with J.J. Gibson's theory, which includes both the movement of the animal/organism and the movement of the environment. When pouring wine into a glass, one autonomous focus remains engaged with (the movement of) the glass as the environmental object, universally representing a catching action. The other two autonomous foci are concerned with the perception of movement within the egocentrically executed action, i.e., the movement of the wine along an action trajectory shape (toward the glass), which universally represents a throwing action.

This article specifically focuses on the two foci belonging to the egocentric throwing action of the wine in relation to pouring it into a glass. 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 occur².

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 the wine over a pre-planned action trajectory shape between the position of the bottle opening and the glass³. This perceptual image is therefore determined in advance within a tactical consideration and involves identifying the future sequential positions the wine must occupy to achieve a successful action. Sequential positions of any object effectively always create line segment shapes, which becomes clearly visible during pouring, and when the action is actually performed, the droplets, which essentially form the stream of liquid, 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 focus⁴.

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 pouring, we always first

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)
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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/373826043_Within_pouring_the_essence_of_the_task_is_solely_carried_out_by_the_rising_movement_of_the_liquid_level_in_the_glass_This_external_primary_focus_provides_the_tau-value

⁴ https://www.researchgate.net/publication/375641377_The_tau-coupling_process_within_pouring_demonstrates_that_we_absolutely_do_not_need_a_motor_plan_Executing_an_external_action_trajectory_shape_along_which_the_liquid_level_rises_dictates_all_internal

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create a perceptual image of a latent successful action trajectory shape of liquid out of the perspective of the bottle opening before we actually perform any action.

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 pour wine into a glass. The only instruction given is to only execute the action if the test subject believes there is a realistic possibility of actually getting the wine into the glass.



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 glass and a random bottle of wine and create the following circumstances:

- Situation 1: Do not alter the environment (zero measurement). Let the test subject just pour the wine.
- Situation 2: Place a giant huge glass shopping window (height 20 meter x width 30 meter) between the bottle opening and the glass, close to the bottle opening.
- Situation 3: Place a giant huge glass shopping window (height 20 meter x width 30 meter) between the bottle opening and the glass, close to the glass.
- Situation 4: Place a giant huge glass shopping window (height 20 meter x width 30 meter) between the bottle opening and the glass, at any random position P.



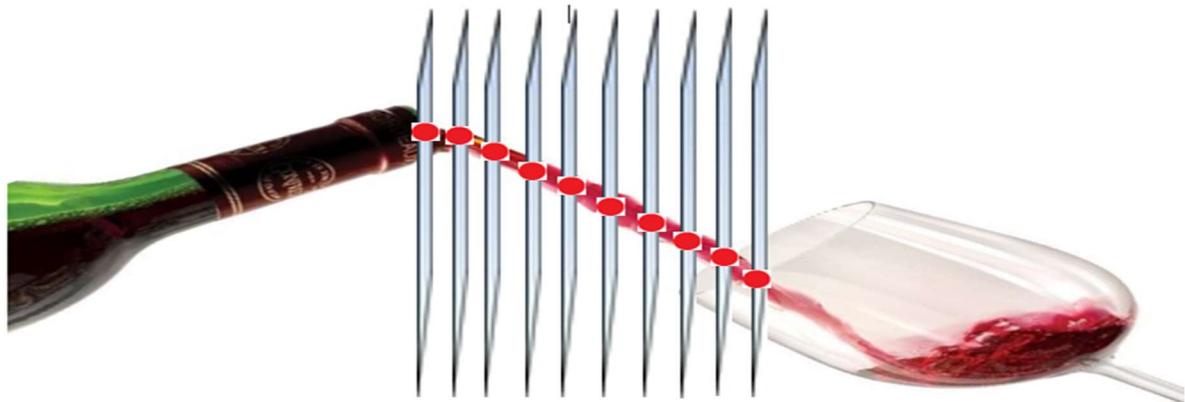
Images: In situation 1 a test subject will normally execute the pouring action. In situations 2 and 3, where a giant glass store window is placed between the bottle opening and the glass, the test subject will not start a pouring action with the intent to actually get wine into the glass. This is because there is *one* (!) position P that is perceived as blocking the wine.

Conclusion:

In situation 1, you and/or the test subject will just execute the pouring of the wine. In situations 2, 3, and 4, you and/or the test subject do not initiate a pouring action with the intent to get wine into the

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glass. 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 bottle opening or near the glass makes no difference to the test subject. If there is a large shop window anywhere clearly present, the test subject will not initiate a motoric action with the intention to execute a successful action. This applies to every conceivable position P of the shop window, from the very first position P(0) near the bottle opening to a shop window occupying the last position P(n) just before the glass.



Situation 4

Image: In situation 4, it becomes clear that prior to the actual execution, we consider all consecutive *future* (!) positions of the wine. It doesn't matter where the shop window is positioned between the bottle opening and the glass; the action is not performed. Mathematically, one can argue that an uninterrupted series of consecutive positions P creates a line segment or line segment shape (action trajectory shape). Which becomes clearly visible within pouring. The image provides a perfect visual representation that within a throwing 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 the bottle opening and the glass beforehand, clearly determining whether each position P allows the wine to pass through so that it can ultimately reach the glass. 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 bottle opening and the glass beforehand if that specific position P(x) is also allowing the physical dimensions of the wine 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 pouring, we first form a perceptual image of the entire latent action trajectory shape of wine out of the perspective of the bottle opening before we actually execute anything.