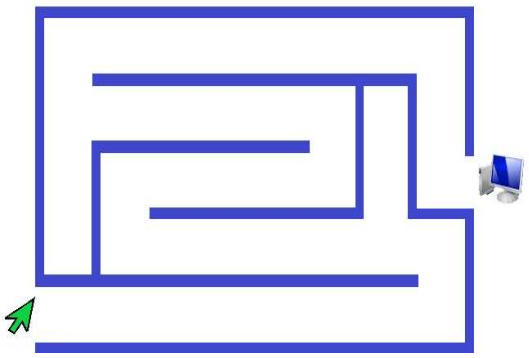
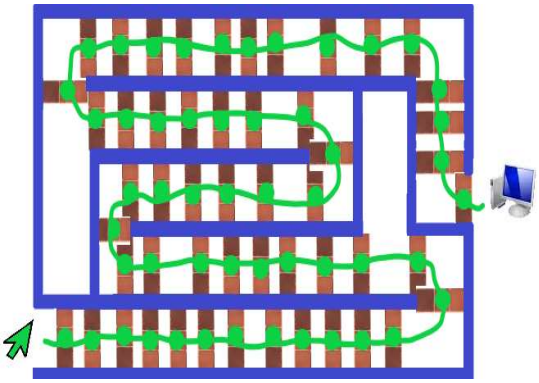
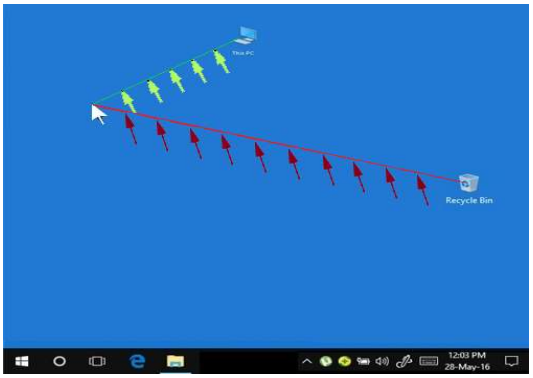
COMPUTER TASKS

Prior to moving a pointer toward an icon we always first construct a perceptual image of a latent action trajectory shape out of the perspective of the pointer – The scientific evidence







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

N.J. Mol

Introduction

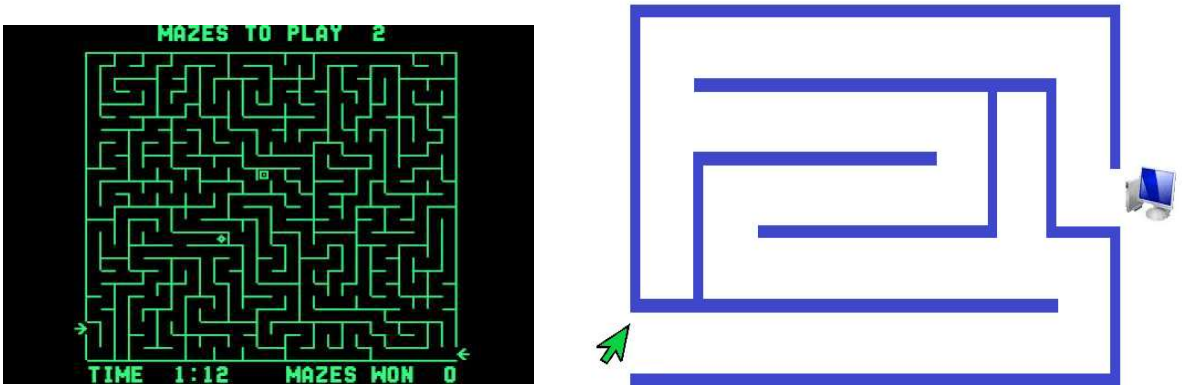
The explanatory model of the motoric movement action provides a universal explanation of all functional perception processes within all goal-directed actions. It demonstrates that performing any conceivable action always requires the simultaneous perception of three autonomous foci[1], in accordance with J.J. Gibson's theory, which includes both the movement of the animal/organism and the movement of the environment. When moving a pointer toward an icon, within a computer task, one autonomous focus remains engaged with (the movement of) the icon 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 pointer along an action trajectory shape (toward the icon), which universally represents a throwing action.
This article specifically focuses on the two foci belonging to the egocentric throwing action of the pointer to an icon. 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 the pointer over a pre-planned action trajectory shape between the current position of the pointer and the icon[3]. This perceptual image is therefore determined in advance within a tactical consideration and involves identifying the future sequential positions the pointer 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 the pointer 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 when moving a pointer toward an icon, within a computer task, we always first create a perceptual image of a latent successful action trajectory shape out of the perspective of the pointer) before we actually perform any action.

---

[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/376450109_Transitioning_from_random_motor_activity_to_the_execution_of_intentional_actions_demands_shifting_the_internal_and_external_focus_The_origin_of_two_autonomous_foci_and_how_their_roles_have_evolutionar
[4] https://www.researchgate.net/publication/375121264_The_tau-coupling_process_when_clicking_an_icon_shows_that_we_absolutely_do_not_need_a_motor_plan_Executing_an_external_action_trajectory_shape_within_the_external_primary_focus_dictates_all_internal_s

The scientific evidence

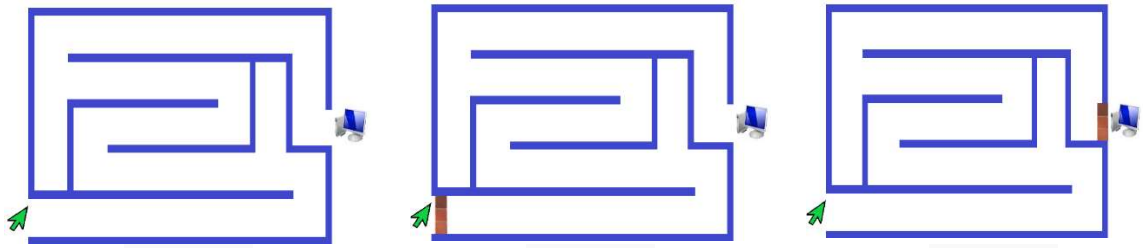
The scientific proof is very easy to comprehend. You are capable to right away endorse it within a personal empiric experiment. You yourself can be the test subject or you can ask a test subject within this computer task. The instruction encompasses the directive to solely execute the task if the test subject presumes a reasonable chance to factually get the pointer reaching the icon. If the test subject doesn't foresee any possibility he/she should refrain from an actual execution.



Images: The scientific evidence relies on the ability to create a representation of a complex maze (left) used in computer games and simplify it into a very basic depiction (right). Within this simplified representation, one can add one additional (maze) wall at any position P.

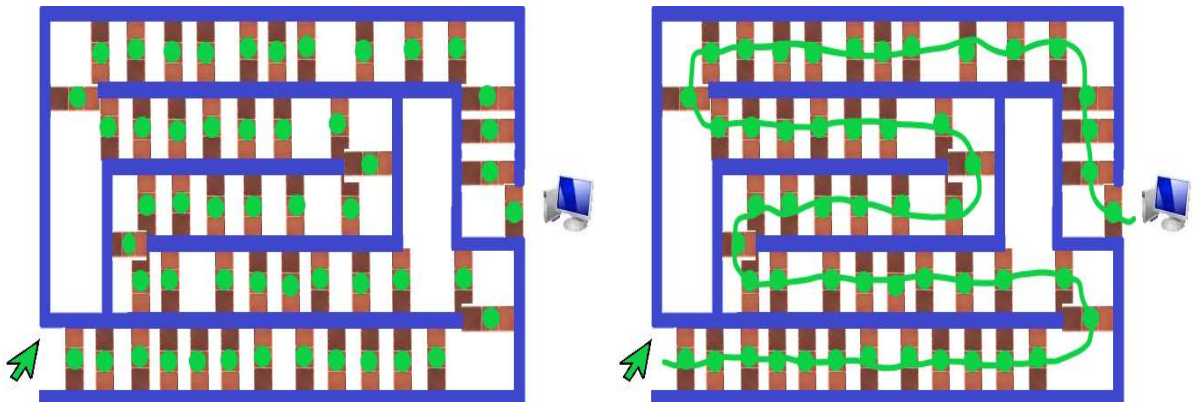
Create the following conditions:

Situation 1: Display the maze corridor without any extra (maze) wall (baseline measurement). Let the participant move the pointer from the entrance to the exit.
Situation 2: Display the maze corridor with one extra (maze) wall, close to the pointer. Ask the participant to move the pointer from the entrance to the exit, considering the presence of the extra wall.
Situation 3: Display the maze corridor with one extra (maze) wall, close to the icon (exit). Instruct the participant to move the pointer from the entrance to the icon, taking into account the presence of the extra wall.
Situation 4: Display the maze corridor with one extra (maze) wall at a randomly chosen position P between the pointer and the icon. The participant is asked to move the pointer from the entrance to the exit, considering the location of the extra wall at position P.



Images: In situation 1, a participant will simply move the pointer towards the icon. However, in situations 2 and 3, where one extra (maze) wall is added, the participant will not initiate the action with the intention of actually reaching the icon. This is because they observe one position P that blocks the pointer from reaching the icon that prevents a full undisrupted course of the pointer to pass.

You and/or your participant will simply move the pointer towards the icon in situation 1. However, in situations 2, 3, and 4, the participant will not initiate the action with the intention of being able to click on the icon. Situations 2 and 3 may not reveal much on their own, but situation 4 clarifies everything. Whether the extra (maze) wall is placed near the pointer or close to the icon, it doesn't matter to the participant. Whenever there is a distinct extra (maze) wall present, the participant refrains from engaging in the action. This holds true for any conceivable position P of the extra (maze) wall, ranging from the initial position P(0) near the pointer to a final position P(n) just before the icon.



Situation 4

Images: In situation 4 it becomes evident that we consider all consecutive future positions of the pointer prior to any execution. It doesn't matter at which position an extra (maze) wall is placed between the pointer and the icon. In such cases, the computer action is not carried out. From a mathematical perspective, one can reason that an uninterrupted sequence of connected positions P can be regarded as a line or line segment shape (action trajectory shape). The images perfectly illustrate that within this action, we first form a perceptual image of the entire latent action trajectory before we execute anything in reality.

That means that we evaluate every position P(0-n) between the pointer and the icon in advance within which it is evident that we assess whether each position P will allow the pointer to pass through, ultimately (successfully) reaching the icon. If any position P is found to be *not empty* (!), the mission is halted. This leads to the definite conclusion that we must examine or observe each position P(x) between the pointer and the icon in advance to determine if it will allow the physical dimensions of the pointer to pass through. Mathematically, an uninterrupted sequence of connected positions P can be regarded as a line segment shape. This completes the scientific evidence that within this computer action, we first form a perceptual image of the entire latent action trajectory shape before we actually execute anything.