
Figures and figure supplements

Lack of evidence for associative learning in pea plants

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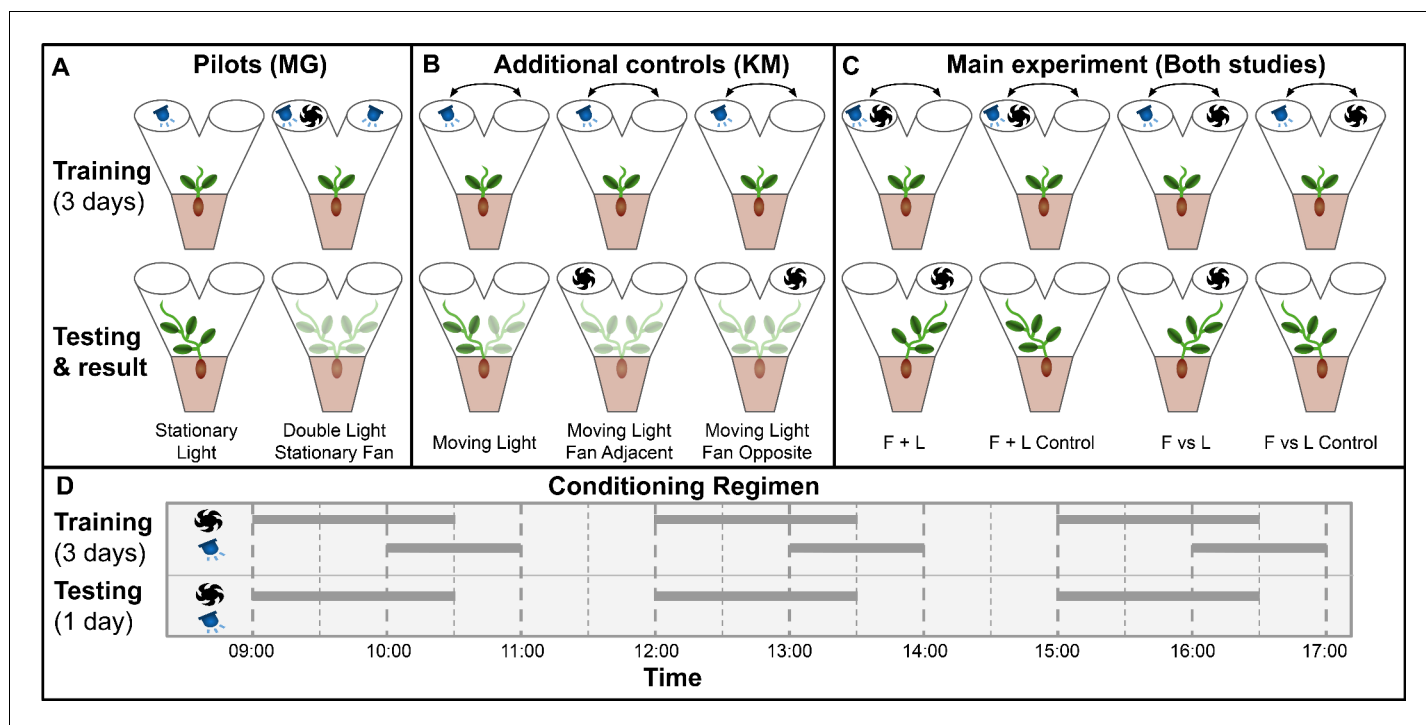


Figure 1. main Visual summary of all experimental conditions tested in both studies. (A) Pilot studies used in Gagliano et al. Top row shows maze fan and light configuration for training period, bottom row shows configuration during testing day and the maze arm into which plants grew. (B) Additional controls used in this study to address the same questions as the pilot studies in Gagliano et al. (C) Main experimental conditions. Results shown are from Gagliano et al. in *Gagliano et al., 2016*. Results here are simplified, for more detailed results from both studies see *Figures 2 and 3*. (D) Conditioning regimen. Horizontal bars indicate time periods for which fans and lights were active, the x-axis indicates time of day.

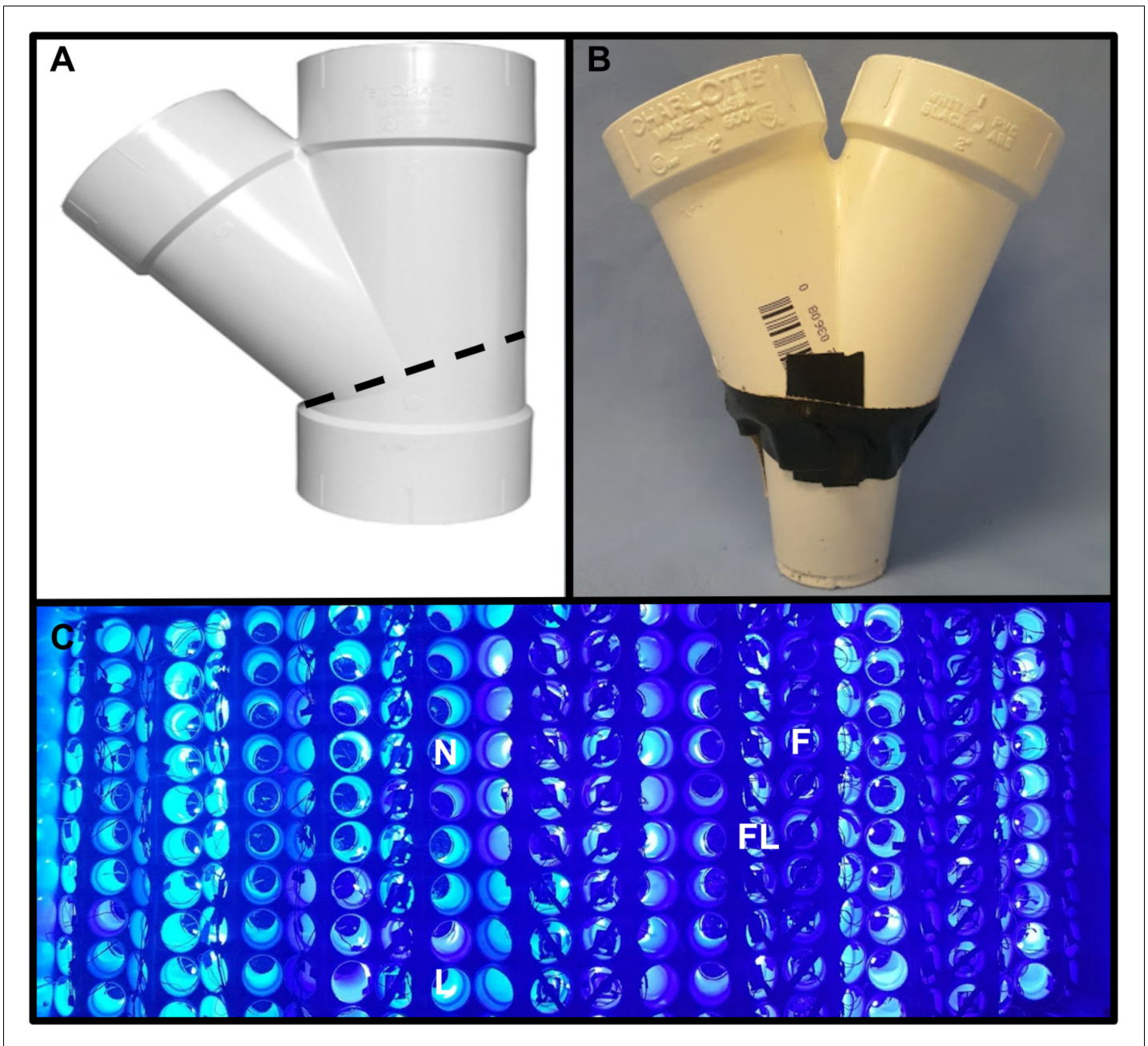


Figure 1—figure supplement 1. Y maze detail. (A) Charlotte two in. 45 degree PVC Wye joint (Model # PVC 00600 1000) was cut at 22.5 degree angle (following the seam) using a chop saw, resulting in a bilaterally symmetrical Y shape. Maze dimensions were 55 mm base diameter, 105 mm total height, bifurcation at 65 mm height, 95 mm overall width at bifurcation point, each arm measured 60 mm diameter by 40 mm length, as per the original study. This maze is attached to the pot 1–2 days after emergence of the seedling from the soil surface. Critically, the attachment of the maze is done before condition and orientation (left vs right) is assigned to prevent bias. (B) Finished Y maze attached to pot. Attachment is achieved via circumferential black tape (to prevent light leakage) with additional longer strips as needed to straighten maze as much as possible. Pot is of dimensions 5 cm diameter at top, 4 cm diameter at bottom, 6 cm height and has one central hole of approximately 2 mm diameter cut into the bottom. (C) Y mazes attached to plants within controlled environment chamber. Each Y maze has two open ends, which have four possible electronic device configurations: N shows nothing, L shows an LED alone, F shows fan alone, and FL shows fan and LED together. These lights and fans were then moved from one maze arm to the other according to the training schedule. LEDs are attached to the lateral aspect of each Y terminus to maximize directionality of light. In these experiments, Y mazes are grouped in sets of 10 which are interconnected by a thin wooden shim which is tightly wedged between the two arms of the Y maze. This stabilizes the mazes from tipping over, a problem that plagued initial attempts.

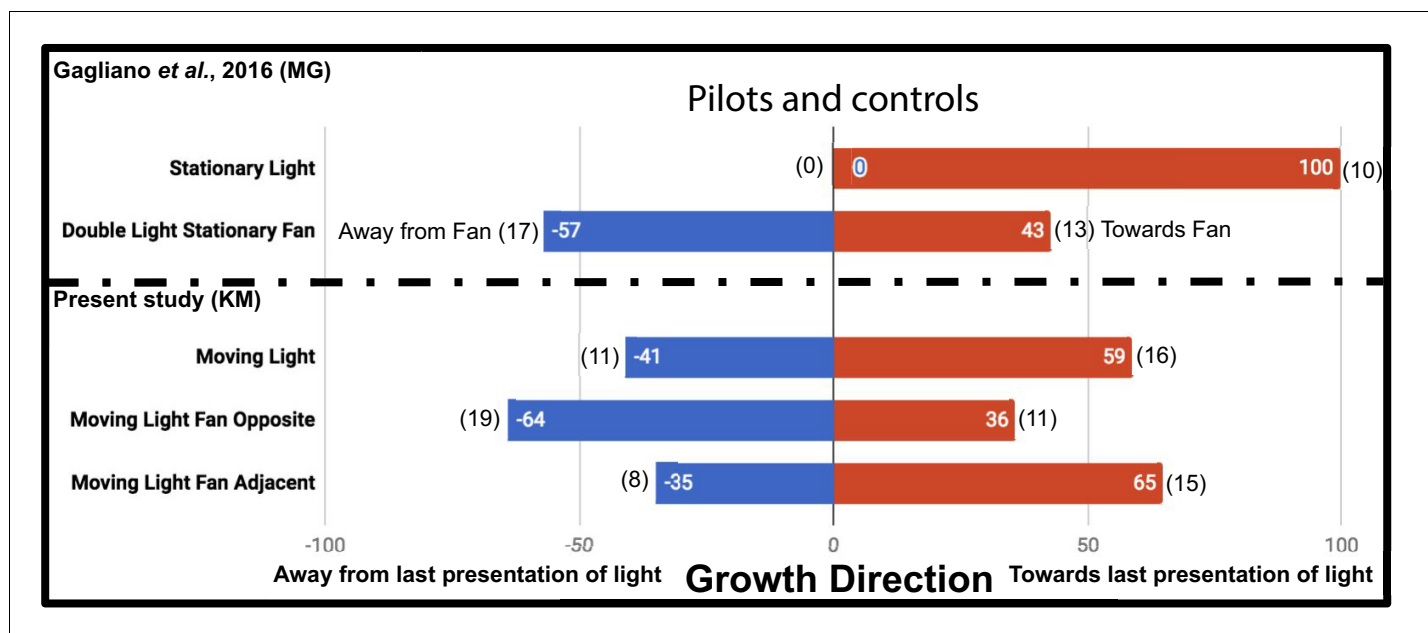


Figure 2. Results of plant growth in control conditions from the present study (KM) and the *Gagliano et al., 2016* experiment (MG). Numbers in bars indicate percentage, numbers in parentheses indicate raw data, number of plants growing into each maze arm.

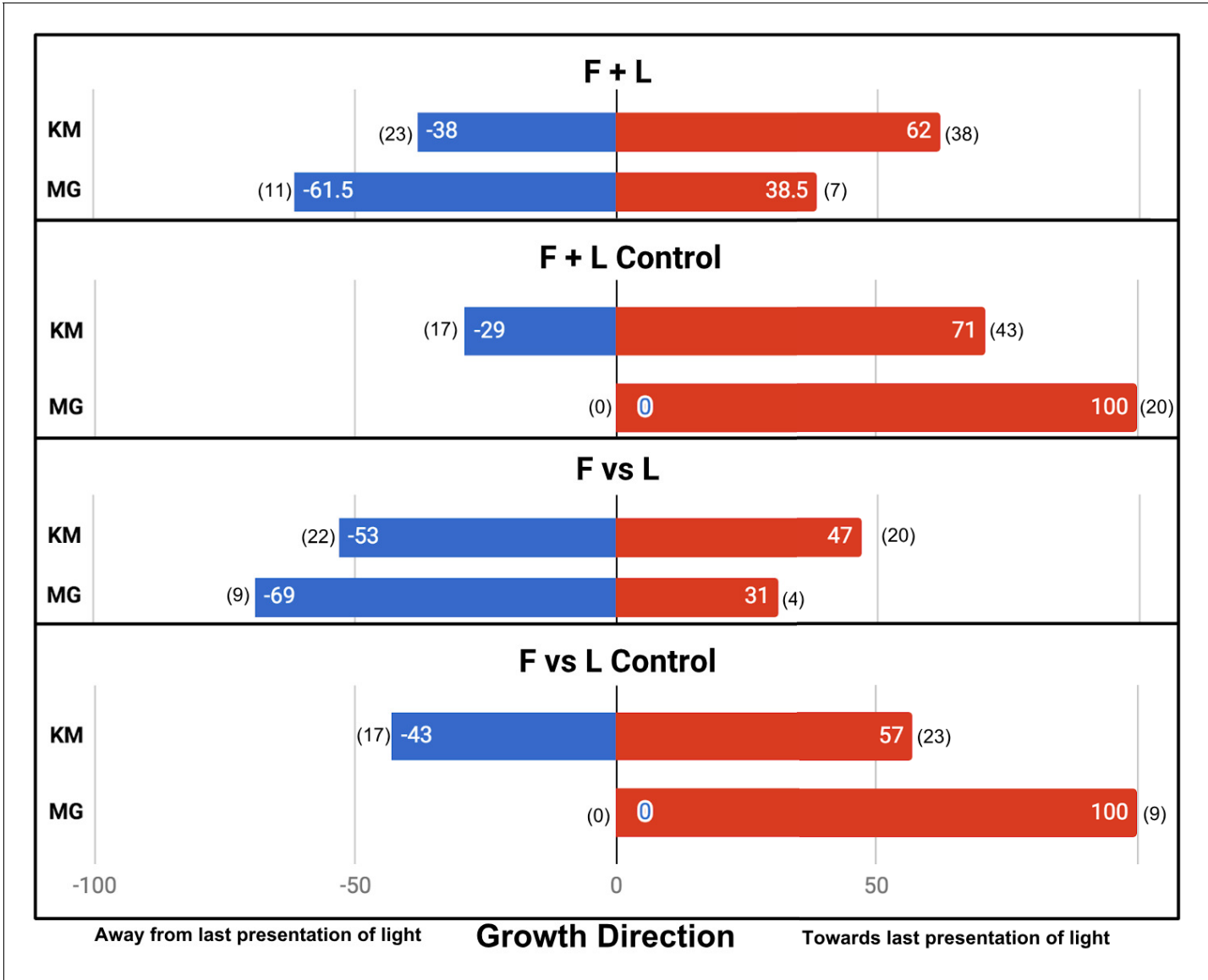


Figure 3. Results of plant growth in the four main conditions from this experiment (bars labeled KM) and the *Gagliano et al., 2016* paper (bars labeled MG). Numbers in parentheses indicate sample size. Data are pooled from the Gagliano et al. ‘Experiment 1’ and the Light group of their ‘Experiment 2’.