**README Effort Allocation Task**

Current version: 2.0 “EAT at the Zoo”[[1]](#footnote-1)

Introduction

The Effort Allocation Task (EAT) is a cost-benefit paradigm that allows participants to work for food and monetary reward in the form of button presses or grip force. The output from this task allows for the estimation of effort vigor and maintenance. Therefore, it is a task that can be used for investigating motivational processes. For more details on the first version of the task (frequency only) see the preprint by Neuser et al. (2019): **doi:** <https://doi.org/10.1101/789982> .

The current version not only allows for grip force, it also enables the following features:

*Uncertainty*

Settings

The following will detail all settings that are found at the beginning of the EAT in part 1, and that can be used to customize the EAT script to ones needs. Settings are elaborated on in order of appearance in the script.

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| settings.do\_fullscreen = 1; | 0 gives a small screen useful for debugging or testing. 1 Gives a full screen, which is automatically the second monitor (if one is connected) |
| settings.do\_fmri = 1; | Includes MR trigger and timing recordings if set to 1. |
| settings.debug = 0; | Theoretically allows for debugging without attaching an input device if set to 1. Still needs to be fully tested. |
| settings.do\_gamepad = 1; | Uses gamepad (Xbox controller) as input device if set to 1. In that case, the effort exerted is in the form of button press frequency. Uses grip force device as input device if set to 0, in which case grip force is the type of effort exerted. |
| settings.do\_WOF = 1; | Includes Wheel of fortune if 1. |
| settings.do\_VAS = 1; | Includes questions in form of VAS at the end of each trial if 1 (specifically set which questions should be included later in the script). |
| settings.do\_val\_cal = 1; | Includes calibration of relative reward value, so that the exchange rate of points to cents/kcal reflects the difference between the value of money and food for the participant given their current satiety level. For example. If a participant is willing to work harder for money then food, and if we want them to work equally hard on food trials, we should offer them more kcal than cents for the same effort. This setting adds 6 small bidding phases after the training. Based on these trials, a ‘fair’ exchange rate is computed. |
| settings.do\_timelimit = 1; | Includes a time limit for the VAS questions if 1. Waits for input from mouse or controller before moving to the next section of 0. |
| settings.lang\_de = 1; | If multiple language versions are available, 1 sets the language of the instructions to German, 0 sets the language of the instructions to English (English language files pending) |
| settings.do\_feedback = 1; | Includes feedback after each trial, showing how many points the participant has won in that specific trial. Used mainly to indicate win if uncertainty is used (see “Supporting files for instructions on how to introduce uncertainty into the experiment”) |
| settings.train\_trials = 3; | Amount of training trials used to estimate the maximum/minimum effort. 2 trials is mainly used for frequency based EAT, 3 for grip force based EAT, although either 2 or 3 will work in both versions. |
| subj.study = 'TUE003'; | (Short) indicator of project. Is used to load/save files with appropriate names. |
| subj.runID = '1'; | The EAT is always a single run. Run here means the amount of times the entire task is run in a single session (experiment, not training). This is required for our naming format. |
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Supporting files

1. EAT versions are named after the Miffy books, that have been part of lab discussion around the time of the development of the larger task [↑](#footnote-ref-1)