**Block design on time pressure:**

High time pressure = 1.5 s for response

Low time pressure = 10 s for response

The order of the high and low pressure blocks depends on whether the **subID is even or odd** number.

**Event-related design on vagueness:**

Vague condition with the V3/distractor as untouched items

Precise condition with the V3/distractor as touched items

The order of vague and precise trials is randomized across trials within the same block of time pressure.

**Precise items:** the precise items are recognized in the program as when the group number of the subject equals to the patch number of the items. For example, if the subject is allocated as group 1, then the items in patch 1 will be recognized as precise items; if the subjects is allocated to group 2, the item in patch 2 will be recognized as precise items.

**Setting of the distractors and the targets:**

The six targets are always the precise items. The six target items are picked as the six precise items with highest bid mean value. The six high bid vague items are not used in the formal task, but used for practicing before the choice task.

The distractor items are the lower ranked 12 precise items for the precise condition and the lower ranked 12 vague items for the vague condition. Under each vagueness condition, the distractor items are separated into two high and low time-pressure groups, based on their mean bid value ranking, 1,3,5,7,9,11 as group 1 and 2,4,6,8,10,12 as group 2. The assignment of group 1 and 2 to high or low time pressure condition determined by **random**.

\*Because we only have six target items, it is very likely to see an identical item in consecutive trials.

**ITIs**

The inter-trial-interval was set as 0.5 to 3.0 secs uniform distribution both in the bid task and in the choice task.

**Number of trials:**

36\*3 = 108 bidding trials

14 or more practicing trials (The discarded six highest bid vague items are used for practicing. Full combination of 3 items from 6 results in 20 different combinations. 14 trials were randomly picked.)

360 choice trials