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| **PLACEMENT TASK (imagined\_pointing\_data)** | | |
| subjCode | Random number to identify subject |  |
| environmentCondition\_VS\_1to4\_ES\_5 | Independent Variable: environment layout was learned in  Condition 1+5: Experiment 1  Condition 2-4: Experiment 2  VS: Vista space  ES: Environmental space | 1: VS, static position, object presentation simultaneous  2: VS, static position, object presentation successively  3: VS, movement, object presentation simultaneous  4: VS, movement, object presentation successively  5: ES, movement, object presentation successively |
| movement\_Static\_1\_Movement\_2 |  | 1: static position  2: movement |
| presentation\_Simultaneous\_1\_Successive\_2 |  | 1: object presentation simultaneous  2: object presentation successively |
| trialNumber | 72 trials |  |
| currentPositionNumber | Position in the environment subject was teleported to | Numbering according to order of learning in ES |
| currentPositionObject | Corresponding name of object located at this position |  |
| bodyOrientation\_360 | Orientation subject was facing when being teleported to the current position  Reference orientation is the global main orientation of 0 degree, clockwise deviation from 0 |  |
| bodyOrientation\_PlusMin180 | Same as bodyOrientation\_360, but deviation from 0 described as 180 degree to the right (positive values) or to the left (negative values) from the reference orientation |  |
| targetNumber | Target subject had to point to | Numbering according to order of learning in ES |
| targetObject | Corresponding name of object at this target location |  |
| correctResponse\_pointingDirection | Correct pointing direction to point from the current position and body orientation to the target |  |
| subjectPointingDirection | Subject’s pointing direction with joystick |  |
| signedError | Deviation from correct pointing direction (signed) |  |
| absoluteError | Deviation from correct pointing direction (absolute) |  |
| latency | Time to respond |  |
| absoluteError\_withoutOutliers | Outliers plus/minus 2SD were excluded |  |
| latency\_withoutOutliers | Outliers plus/minus 2SD were excluded |  |
| learningRepetitionsForMemorizingTheLayout | Amount of times the layout had to be learned in order to reach the learning criteria |  |
| Gender\_Male\_1\_Female\_2 |  | 1: male  2: female |
| Age |  |  |
| NauseousDuringExperiment\_Yes\_1\_No\_2 |  | 1: yes  2: no |
| experiencesInVirtualReality\_None\_1\_Expert\_5 | Self-reported level of experience with virtual reality: “How much experience do you have with virtual realities (e.g., by computer games, other experiments)?” | 1: none  2: little  3: average  4: much  5: expert |
| SenseOfDirection\_VeryBad\_1\_VeryGood\_5 | Self-reported sense of direction: “How good is your sense of direction?” | 1: very bad  2: bad  3: average  4: good  5: very good |

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| **PLACEMENT TASK (placement\_data)** | | |
| subjCode | Random number to identify subject |  |
| orderOfSelection | Order objects were placed in |  |
| objectName | Name of selected object |  |
| objectNumber | Corresponding number |  |
| orderOfRandomPresentationDuringTest | Order objects was presented to subject in placement task  Random for each participant | 1-7: in a row from left to right, 5 = middle |
| environmentCondition\_VS\_1to4\_ES\_5 | Independent Variable: environment layout was learned in  Condition 1+5: Experiment 1  Condition 2-4: Experiment 2  VS: Vista space  ES: Environmental space | 1: VS, static position, object presentation simultaneous  2: VS, static position, object presentation successively  3: VS, movement, object presentation simultaneous  4: VS, movement, object presentation successively  5: ES, movement, object presentation successively |
| learningRepetitionsForMemorizingTheLayout | Amount of times the layout had to be learned in order to reach the learning criteria |  |
| Gender\_Male\_1\_Female\_2 |  | 1: male  2: female |
| Age |  |  |
| NauseousDuringExperiment\_Yes\_1\_No\_2 |  | 1: yes  2: no |
| experiencesInVirtualReality\_None\_1\_Expert\_5 | Self-reported level of experience with virtual reality: “How much experience do you have with virtual realities (e.g., by computer games, other experiments)?” | 1: none  2: little  3: average  4: much  5: expert |
| SenseOfDirection\_VeryBad\_1\_VeryGood\_5 | Self-reported sense of direction: “How good is your sense of direction?” | 1: very bad  2: bad  3: average  4: good  5: very good |