**Supplement 1: Response time analyses**

**Method**

The agency inference task was designed to render participants’ predictions of outcome locations unreliable. That is, participants could not follow their square from the moment they had to press the stop key. However, the square could be followed in mind. Based on the timing of pressing the STOP cue, a prediction of their square’s stop location could have been made. Participants might have based their agency rating on this possible internal prediction. If that is true, the closer the participant landed their square to the presented outcome location, the higher agency ratings would be.

In order to examine this possibility, the response time to push the Enter button in reaction to the STOP cue was analyzed (for detailed methods, see also [13, 16]). In the experiment, the last presentation of the participant’s square was always four locations farther than the goal or prime location. Therefore, in matching trials the time from the onset of the last location of the square and onset of the outcome location was 400 ms (1 lap of 800 ms / 2). For mismatching trials, the goal or prime was randomly presented half a lap from the outcome location or one tile before or after this location. Hence, the time from the onset of the last location of the participant’ square to the onset of the stop location in mismatching trials was either 800 ms (1 lap) or 700 ms (-1 tile) or 900 ms (+1 tile).

Then, the time between the STOP cue and the *onset* of the presented stop location was 283 ms for matches and 583, 683, or 783 for mismatches (i.e., 400 ms, and 700, 800, or 900 ms, minus 50 ms from the last presentation of the participant’s square, and minus 67 ms for the priming event). The response time to stop exactly on the outcome location *at half its presentation time* was 308, 608, 708, or 808 ms (283, 583, 683, or 783 plus 25 ms ).

Pearson’s correlation between this response time and self-agency experiences was then calculated to assess their relationship.

**Results**

No significant correlations were found (goal-based match, r=.21, p=.09; goal-based mismatch, r= -.11, p=.36; prime-based match, r= -.08, p=.50; prime-based mismatch, r=.05, p=.65). To check whether the reported group differences in prime-based agency inferences might be related to this issue, we also assessed correlation coefficients within each group. In both the matching and mismatching trials, results remained non-significant (prime-based match health controls, r= -.09, p=.59; prime-based mismatch healthy controls, r= .32, p=.06; prime-based match patients, r=.06, p=.73; prime-based mismatch patients, r= -.09, p=.62).

These results were similar to previous findings in our group [16]. That is, we confirmed that agency experiences in our task are independent of potential internal predictions.

[13] Aarts H, Custers R, Wegner DM. On the inference of personal authorship: enhancing experienced agency by priming effect information. Conscious Cogn 2005;14:439–58. doi:10.1016/j.concog.2004.11.001.

 [16] van der Weiden A, Ruys KI, Aarts H. A matter of matching: How goals and primes affect self-agency experiences. J Exp Psychol Gen 2013;142:954–66. doi:10.1037/a0030079.