

## Supporting Information

**Table S1. Independent samples t-test and Mann-Whitney U test results of spatial ability tests with respect to cognitive style.**

Spatial ability test	Test	Test statistic	df	p	$\eta^2$
Spatial visualization	Mann-Whitney U test	38.500	-	< .001	-0.718
Spatial orientation	Mann-Whitney U test	172.000	-	0.044	0.433
Spatial relation	Independent samples t-test	-1.531	38	0.134	-0.5

**Table S2. Results of ANOVA analysis of the effect of map orientation on the pointing direction test.**

Cases	Sum of Squares	df	Mean Square	F	p	$\eta^2$
Map Orientation	522.918	1	522.918	1.24	0.273	0.013
Map Orientation $\times$ Cognitive Style	657.975	1	657.975	1.56	0.219	0.016
Residuals	16027.611	38	421.779	-	-	-

**Table S3. Repeated measures ANOVA results for the effect of map orientation on canonical accuracy.**

Case	Sum of Squares	df	Mean Square	F	p
Map Orientation	0.104	1	0.104	2.810	0.103
Map Orientation $\times$ Cognitive Style	0.002	1	0.002	0.046	0.831
Residuals	1.259	34	0.037	-	-

**Table S4. Repeated measures ANOVA results for the effect of map orientation on angle accuracy.**

Case	Sum of Squares	df	Mean Square	F	p
Map Orientation	0.099	1	0.099	4.056	0.052
Map Orientation × Cognitive Style	0.053	1	0.053	2.166	0.150
Residuals	0.8.34	34	0.025	-	-

**Table S5. Repeated measure ANOVA results for the main effect of map orientation on landmark sequencing score with cognitive style as a fixed factor.**

Case	Sum of squares	df	Mean square	F	p	$\eta^2$
Map orientation	4.407	1	4.407	2.891	0.099	0.031
Map orientation × Cognitive style	9.559	1	9.559	6.270	0.018	0.067
Residuals	47.260	35	1.525	-	-	-

**Table S6. Post hoc comparisons. Cognitive style × Map orientation**

Comparison		Mean Difference	SE	t	p <sub>holm</sub>
FD, North Up	FI, North Up	-1.804	0.480	-3.755	0.002
	FD, Forward Up	-1.308	0.484	-2.700	0.044
FI, North Up	FI, Forward Up	-1.554	0.480	-3.234	0.010
	FD, Forward Up	0.496	0.480	1.033	0.917
FD, Forward Up	FI, Forward Up	0.250	0.390	0.640	1.000
	FI, Forward Up	-0.246	0.480	-0.512	1.000

**Table S7. Repeated measure ANOVA results for the main effect of map orientation on total egress time in route retracing task with cognitive style as a fixed factor.**

<b>Case</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>p</b>
<b>Map orientation</b>	2742.163	1	2742.163	0.998	0.324
<b>Map orientation × Cognitive Style</b>	2448.163	1	2448.163	0.891	0.351
<b>Residuals</b>	104361.787	38	2746.363	-	-