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Navigational Strategy Questionnaire (NSQ)©[1]

[Scoring Sheet]

This survey concerns the common habits or techniques that you engage in when navigating the familiar places in your everyday environment. When filling out this questionnaire, please **TAKE YOUR TIME**, **THINK CAREFULLY**, and be **VERY HONEST**. Some statements appear similar but differ in important ways. **Please spend at least 15 minutes doing it**. Circle the best rating using the five-point scale. **As much as possible, please agree or disagree with each statement, and avoid making neutral responses unless you are totally unsure**.

Please circle the appropriate rating using the five-point scale

1 ---------- 2 ---------- 3 ---------- 4 ---------- 5

Totally Disagree | Somewhat Disagree | Neutral | Somewhat Agree | Totally Agree

***	1.	In an unfamiliar environment with no clear landmarks (e.g., forest, desert, new city) and/or in low visibility conditions (e.g., fog, heavy rain), I still have a good sense of where I am heading.	1—2—3—4—5
***	2.	If I travel in a novel multi-level building, I can easily imagine the 3D structure of the space.	1—2—3—4—5
##	3.	I tend to judge my orientation in the environment in terms of cardinal directions (north, south, east, west).	1—2—3—4—5
***	4.	My mental representation of space reflects realistic, large-scale structural layout of my surrounding environment with relatively accurate distances.	1—2—3—4—5
+	5.	If I need to return to my origin, it is easier for me to retrace my route than to find a new shortcut.	1—2—3—4—5

[1] The NSQ contains three self-report scales assessing three types of strategies that are commonly employed when navigating our everyday environments on foot: (i) **egocentric spatial updating strategy** (idenoted by ***), (ii) **survey-based strategy** (denoted by ##), and (iii) **procedural strategy** (denoted by +). The three strategy scales are intended to serve as add-ons to the Santa Barbara Sense of Direction Scale (SBSOD), which provides a unitary scale score that makes no distinction between different navigation strategies (see Zhong, 2013; Zhong & Kozhevnikov, 2016). The egocentric spatial updating strategy scale (17 items) assesses path integration mechanisms (e.g., continuous tracking of self-motion and proximal object cues), an ego-referenced sense of direction, and the recruitment of egocentric frame(s) of reference during mental imagery. The survey-based strategy scale (12 items) assesses competence in cognitive mapping of routes and large-scale environments, and the formation of survey knowledge based on allocentric or environment-centered frames of reference. The procedural strategy (15 items) assesses visual attention to and memory for object/landmarks, and the reliance on object/landmark information for mentalizing routes of travel in a non-spatial/piecemeal or sequential fashion. To compute the respective scale scores, sum the ratings from the items that constitute each scale and average them. Non-desired items can also be discarded, whenever necessary, in the computation of the scale scores.

To use the NSQ, please read and cite:

1) Zhong, J. Y. (2013). *Three types of environmental representations and individual differences in spatial navigation* (Master's Thesis, National University of Singapore). Retrieved from Open Access Theses and Dissertations (Record ID: oai:scholarbank.nus.edu.sg:10635/47243).

2) Zhong, J. Y. (2016). Relating allocentric and egocentric survey-based representations to the self-reported use of a navigation strategy of egocentric spatial updating. *Journal of Environmental Psychology*, *46C*, 154-175.

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##	6.	I usually attempt to visualize a map of the environment from a top-down aerial perspective as I travel.	1—2—3—4—5
***	7.	It is easy for me to estimate the distance and direction between my moving body and the landmarks I have passed by on the route.	1—2—3—4—5
***	8.	If I were to return to my origin, I would attempt to find a shortcut based on judging the direction-of-return to the origin rather than retracing my footsteps.	1—2—3—4—5
##	9.	My mental representation of the route that I traversed is analogous to a schematic map (e.g., floor-plan, blue-print, metro map) rather than a first-person perspective of routes and landmarks.	1—2—3—4—5
+	10.	I rely primarily on landmarks as signs of turning points along my route of travel.	1—2—3—4—5
***	11.	I have an "internal compass".	1—2—3—4—5
+	12.	To reach my destination, I largely recruit a set of procedures telling me the actions to perform (i.e., go straight/back, turn left/right) at different locations on my route.	1—2—3—4—5
##	13.	I tend to reconstruct my traveled route by imagining abstract spatial relationships amongst different places in a schematic plan rather than by imagining re-walking the route from a 3D first-person perspective.	1—2—3—4—5
##	14.	I usually attempt to mentally represent route segments, turns and their spatial relationships from a top-down aerial perspective.	1—2—3—4—5
+	15.	I remember my route traveled as a succession of different segment lengths and turns without clear spatial relationships.	1—2—3—4—5
***	16.	I can sense where I am heading even with my eyes closed.	1—2—3—4—5
***	17.	At any time during a route, I can point back to where I began.	1—2—3—4—5
+	18.	I prefer following directions with descriptions of landmarks at turning points rather than using a map.	1—2—3—4—5
+	19.	I have stored mental "snapshots" of landmarks or scenes which do not inform me clearly of my position and orientation in the environment.	1—2—3—4—5
***	20.	At any time during a route, I can point back to the landmarks I have passed by.	1—2—3—4—5
+	21.	If I were to walk on my route again, I would depend heavily on a sequence of mental "snapshots" of landmarks or scenes to go to the places I had been to.	1—2—3—4—5
***	22.	I can easily keep track of my direction of travel on my route with respect to the starting point.	1—2—3—4—5

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+	23.	I find it much easier to understand my route procedurally (i.e., where to head and where to turn) than based on forming a map-like mental representation.	1—2—3—4—5
+	24.	It is very difficult for me to find a shortcut because I think of my route as a sequence of routes and turns.	1—2—3—4—5
+	25.	I find it much easier to recall my route as a set of procedures or actions than as a pattern of spatial relationships.	1—2—3—4—5
##	26.	I rely primarily on a schematic mental representation of my environment to help me in finding shortcuts.	1—2—3—4—5
##	27.	I rely primarily on a schematic mental representation of my environment to figure out my position in the environment.	1—2—3—4—5
+	28.	Whenever I get lost, I try to reorient myself in relation to the visible landmarks.	1—2—3—4—5
##	29.	I usually rely on a schematic mental representation to orient and navigate to familiar places.	1—2—3—4—5
+	30.	When I navigate, I pay attention to the landmarks at the turning points and try to remember their sequence.	1—2—3—4—5
***	31.	I visualize my environment in the form of a 3D spatial layout that maintains the spatial relations between my imagined self and surrounding landmarks/objects.	1—2—3—4—5
***	32.	I have navigational intuition.	1—2—3—4—5
##	33.	My mental representation of my traveled route resembles a schematic plan of abstract spatial relationships rather than a pictorial, sequential plan of landmarks/objects.	1—2—3—4—5
+	34.	I keep a mental record of the landmarks I see on my traveling route in a sequential fashion.	1—2—3—4—5
***	35.	I can point to the exit after several turns in a building without relying on salient landmarks/objects as points of reference.	1—2—3—4—5
+	36.	To avoid getting lost, I usually try to memorize the landmarks around me, along with their associated turns.	1—2—3—4—5
+	37.	My mental representation of space primarily involves sequences of route segments and turning points.	1—2—3—4—5
***	38.	Inside buildings with no salient landmarks/objects to serve as points of reference, I can still sense the direction I am facing.	1—2—3—4—5
***	39.	I can find my way under low visibility conditions (or even in darkness) in familiar places better than other people.	1—2—3—4—5
***	40.	I can easily point to a specific place outside the building when I don't see it from the inside.	1—2—3—4—5

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##	41.	When I imagine reorienting myself on my mental map, I tend to visualize my environment from the top-down aerial perspective and turn my imagined position to face the new heading.	1—2—3—4—5
***	42.	I know the direction to familiar buildings even when it is blocked from sight by another one.	1—2—3—4—5
##	43.	I can plan out my route of travel by visualizing a schematic map from a top-down aerial perspective.	1—2—3—4—5
##	44.	When I reconstruct my mental map, its environmental orientation is fixed and does not change with my imagined heading directions.	1—2—3—4—5