

Roberto Casati

Disorientation: Past, present, future

*Vendredi de 14 h à 16 h (salle BS1\_05, 54 bd Raspail 75006 Paris), du 14 septembre 2018 au 21 décembre 2018. La séance du 28 septembre 2018 aura lieu en salle ASI\_24, 54 bd Raspail 75006 Paris. La séance du 19 octobre 2018 aura lieu en salle ASI\_23, 54 bd Raspail 75006 Paris*

Changement de salle: la séances du 7/12 aura lieu en A07\_51 et celle du 14/12 en A08\_51.

Disorientation has been a huge concern for mankind since the earliest uses of a space that is not just proximal or peripersonal. Popular wisdom has it that disorientation is no longer a problem, because of assistive, GPS based devices. However, the idea that disorientation will disappear from the human landscape is wishful thinking at best. Cases of device-induced disorientation (intensive use of GPS based navigation devices) are documented with increased frequency; disorientation pathologies will continue to exist, related to aging, dementia and various disorders, with no therapy in sight; and technology is not a universal or definitive solution (due to failure, power shortage, accidents, poor ergonomics, inherent complexities of the devices or improper use.) Finally, even though information is the key remediation for disorientation, contemporary environments are prone to information overload – in particular an overload of information aimed at remediating disorientation.

Although a large literature exists that is devoted to what people *do* when they are disoriented, or to the neural underpinnings of disorientation and orientation, very little is known about what people *think* or *believe* or *feel subjectively* in disorientation conditions. A lot is known about third person disorientation, but very little about first person disorientation.

We shall address many aspects of disorientation. Students are expected to read and present book chapters or articles from the following list, or to contribute with an autonomous project on disorientation. I especially welcome surveys of the historical record, narratives (real or fictional) of lost travelers, of feeling disoriented in new environments, of estrangement in hotel rooms, of being lost at sea, in the woods, in deserts, in cityscapes, and of actively searching for disorientation, of orienteering. According to the conditions, we may be able to run a practical class in Fontainebleau forest.

Course timeline

Students taking class for credit (depending on class size):

-Presenting one large or two small items from the bibliography (15 minutes) as if it was written by you.

-A paper min 8000 max 10000 characters, in either English or French, spaces included, bibliography excluded.

As usual, some experimenting with modalities for credit: the important part is to show that you are making sense of the class.

Some instruments we are working on:

[Disorientation Questionnaire](#) (Pablo Fernandez Velasco)

## Sea Hero Quest

## Sea Hero Quest

### Map semantics – Spring seminar on Mental maps, paper maps, e-maps

Attention; not all “natural dates” are class dates: 14, ~~21~~, 28 sep; ~~5~~, 12, 19, ~~26~~ oct; 2, 9, 16, 23, 30 nov, 7, 14 et 21 dec; and there is an extra class on Oct 4<sup>th</sup>. Mind the different locations for the classes. Two classes are “terrains”, to be discussed.

Sep	14	<u>Roberto Casati</u> <u>and Pablo</u> <u>Fernandez, IJN</u>	Introduction	BS1_05
Sep	28 (IJN)	<u>Roberto Casati</u>	Ways of disorientation and of disorientation remediation	<i>ASI_24</i>  Concordia, 41 rue Tournefort, 75005 Paris (registration mandatory on <a href="#">website</a> ) Exceptionally on a Thursday. Suggestion: Pick a two hour slots and make yourself visible to me during the workshop. Meeting at the “échangeur” of Châtelet-les-Halles Underground station. Let us know if there are tickets issues.
Oct	4	<u>Ed Hutchins,</u> <u>Francesca</u> <u>Cozzolino,</u> <u>Laurent Cohen,</u> <u>Beatrice</u> <u>Fraenkel,</u> <u>Valeria</u> <u>Giardino, Hugo</u> <u>Mercier</u>	Is cognition still in the wild? One- day workshop with Ed Hutchins <a href="https://goo.gl/forms/AiSFIdzvOVXqPrCe2">https://goo.gl/forms/AiSFIdzvOVXqPrCe2</a>	MEET AT 13:45 in front of Monoprix under the Canopée. 0662851313
Oct	12	Giuseppe Attoma	Wayfinding in an urban context: the case of Chatelet-Les Halles	
Oct	19	<u>Goffredo</u> <u>Puccetti (NYU)</u>	Wayfinding in a city in the desert	<i>ASI_23</i> Meet at the Fontainebleau-Avon station. Let us know if there are tickets issues.
Nov	2	<u>Roberto Casati</u> <u>(EHES)</u>	Disorientation in the woods	
Nov	9	<u>Roberta de</u> <u>Monticelli (HSR</u> <u>Milan)</u>	Phenomenology of spatial values	BS1_05
Nov	16	Barry Smith (SUNY Buffalo)	Driverless cars	BS1_05
Nov	23	<u>Joëlle Proust</u> <u>(IJN)</u>	Metacognition and disorientation	BS1_05
Nov	30	<u>Robin</u> <u>Champenois</u> <u>(PSL)</u>	Sea Hero Quest: a game for studying disorientation	BS1_05

Dec	7	<u>Pablo Fernandez Velasco (IJN)</u>	Characterizing Disorientation	BS1_05
Dec	14	<u>Michel Denis (LIMSI-CNRS, Orsay)</u>	The psychology of wayfinding	A07_51
Dec	21	<u>Roberto Casati (EHES)</u>	Conclusions/ Students' presentations	A08_51

## Reading list

Students should present a long article or two short articles or a book chapter from the following. I'd be happy to consider other (relevant) proposals!

### *A general framework for understanding assisted navigation:*

Casati, R. (2017). Two, then four modes of functioning of the mind. Towards a unification of dual theories of reasoning and theories of cognitive artifacts. in Zacks, J. M., & Taylor, H. A. (Ed.) *Representations in Mind and World: Essays Inspired by Barbara Tversky*. Psychology Press.

### *General on disorientation:*

Dudchenko, P. A. (2010). *Why People Get Lost: The Psychology and Neuroscience of Spatial Cognition*. Oxford University Press.

### *Research on the cognitive and neural underpinnings of navigation:*

Cheung, A., Ball, D., Milford, M., Wyeth, G., & Wiles, J. (2012). Maintaining a cognitive map in darkness: the need to fuse boundary knowledge with path integration. *PLOS Computational Biology*, 8(8), e1002651.

Denis, M., 2016, *Petit traité de l'espace*. Mardaga.

Epstein, R. A., Patai, E. Z., Julian, J. B., & Spiers, H. J. (2017). The cognitive map in humans: spatial navigation and beyond. *Nature Neuroscience*, 20, 1504.

Coutrot, Antoine, et al. "Virtual navigation tested on a mobile app (Sea Hero Quest) is predictive of real-world navigation performance: preliminary data." *bioRxiv* (2018): 305433.

Li, X., Mou, W., & McNamara, T. P. (2012). Retrieving Enduring Spatial Representations After Disorientation. *Cognition*, 124(2), 143–155.

Waller, D., & Hodgson, E. (2006). Transient and enduring spatial representations under disorientation and self-rotation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 32(4), 867.

### *History of disorientation:*

Schmidt di Friedberg, M. (2017). *Geographies of Disorientation*. Routledge.

### *Primitive or low-tech navigation:*

Huth, J. E. (2013). *The Lost Art of Finding Our Way*. Harvard University Press.

Hutchins, E., (1993) *Cognition in the wild*. MIT Press.

*On metacognition:*

Michaelian, K., & Arango-Munoz, S. (2014). Epistemic Feelings, Epistemic Emotions: Review and Introduction to the Focus Section. *Philosophical Inquiries*, 2(1), 97–122.  
Proust, Joëlle. *The representational structure of feelings*. Open MIND. Frankfurt am Main: MIND Group, 2014.

*Lost person behavior:*

Lin, L., & Goodrich, M. A. (2010). A Bayesian approach to modeling lost person behaviors based on terrain features in wilderness search and rescue. *Computational and Mathematical Organization Theory*, 16(3), 300–323.  
Koester, R. (2008). *Lost Person Behavior: A search and rescue guide on where to look - for land, air and water* (1st edition). Charlottesville, VA: dbS Productions LLC.  
Hill, K. A. (1998). The psychology of lost. *Lost Person Behavior*. Ottawa: National SAR Secretariat, 1-16.  
Sava, E., Twardy, C., Koester, R., & Sonwalkar, M. (2016). Evaluating Lost Person Behavior Models. *Transactions in GIS*, 20(1), 38–53.

*Clinical aspects of disorientation:*

Monacelli, A. M., Cushman, L. A., Kavcic, V., & Duffy, C. J. (2003). Spatial disorientation in Alzheimer's disease The remembrance of things passed. *Neurology*, 61(11), 1491-1497.  
Aguirre, G. K., & D'Esposito, M. (1999). Topographical disorientation: a synthesis and taxonomy. *Brain*, 122(9), 1613–1628.  
Henderson, V. W., Mack, W., & Williams, B. W. (1989). Spatial disorientation in Alzheimer's disease. *Arch Neurol*, 46(4), 391-4.

*Landmarks and head direction:*

Ruddle, R. A., Volkova, E., Mohler, B., & Bühlhoff, H. H. (2011). The effect of landmark and body-based sensory information on route knowledge. *Memory & Cognition*, 39(4), 686–699.  
Wiener, S. I., & Taube, J. S. (2005). *Head Direction Cells and the Neural Mechanisms of Spatial Orientation*. MIT Press.

*Universal design:*

Barnes, C., (2011), Disability and the importance of Design for All. *Journal of Accessibility and Design for All*, (1), 54-79 (2011).