The GPS You Already Own - Your Brain

By News Staff | January 10th 2009 12:00 AM | 2 comments | Track Comments

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Orientation is a puzzle to neuroscience researchers and ever more puzzling to us. If you've ever been lost, or even just in a strange place, you know the feeling of mild panic. But once you get your bearings, that feeling goes away.

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Disorientation is unpleasant but our brain quickly sorts it out. Some researcher suggests that animals and young children mainly rely on geometric cues (e.g. lengths, distances, angles) to help them get reoriented while adults can also make use of feature cues (e.g. color, texture, landmarks) in the surrounding area.

Your brain has two methods to compile detail and help you regain orientation, a built-in Global Positioning System (GPS). But the question for psychologists is which method do we use more often?

Kristin R. Ratliff from the University of Chicago and Nora S. Newcombe from Temple University conducted a set of experiments investigating if human adults have a preference for using geometric or feature cues to become reoriented.

The first experiment took place in either a large or small white, rectangular room with a landmark (a big piece of colorful fabric) hanging on one wall. The study volunteers saw the researcher place a set of keys in a box in one of the corners.

The volunteers were blindfolded and spun around, to become disoriented. After removing the blindfold, they had to point to the corner where the keys were. After a break, the volunteers were told the experiment would be repeated, although they wouldn't watch the researcher hide the keys.

Unbeknownst to them, during the break the researchers moved the landmark to an adjacent wall—this change forced the volunteers to use either geometric cues or feature cues, but not both, to reorient themselves and locate the keys. For the second experiment, the researchers used a similar method, except they switched room sizes (the volunteers moved from a larger room to a smaller room and vice versa) during the break.

The results in *Psychological Science* reveal that the brain does not have a distinct preference for certain cues during reorientation. In the first experiment, volunteers reoriented themselves by using geometric cues in the smaller room but used feature cues in the larger room. However, the volunteers who went from the larger room to the smaller room in the second experiment also relied on feature cues, searching for the landmark to become reoriented.

During the second experiment, the researchers surmise, the volunteers had a positive experience using feature cues in the large room, so they kept on relying on the landmark in the smaller room to become reoriented. These findings indicate that the brain takes into account a number of factors, including the environment and our past experiences, while determining the best way to reorient us to our surroundings.

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WHAT PEOPLE ARE SAYING

"In sweden they have for years now this same type of system 'no kids left behind'. Well there way..."

"what is the way forward? I think that's largely in the hands of the parents. When governments..."

"In a perfect world, administrators would shield individual researchers from bureaucracy. It may..."

"This is great news. My one hope is this: that it doesn't lead to a further big expansion of the..."

"Yes even though the study is small, aren't most studies small to begin with? I don't understand..."

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COMMENTS

This is beside the point entirely, but why use GPS? GPS is just one of several Global Navigation Satellite Systems (GNSS). Global Positioning System (GPS) is the well-known American military version of it. The public is allowed to use a reduced accuracy version of the military GPS.

In addition to the American GNSS, GPS, we have up and running today GLONASS, the Russian version and DORIS a French system. Europe is developing Galileo, an European GNSS, which will improve the total globally available GNSS substantially. Both China and Japan have regional navigation systems that could be extended to be global and I know China has this ambition. All the better for everyone.

GNSS is the official term for satellite navigation. :-)

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Regardless of nationality, everyone has heard of GPS so, in context, they know what it means to have one in their brains. Telling them they have a GNSS would not mean as much to as many people.

Sometimes clunkier terms do catch on but it takes a lot of marketing. Every type of its kind used to be called a 'Jeep', for example so you said you had a Jeep and then people asked what brand. But other companies, not liking that their product was commonly referred to by someone else's brand, spent a lot of money talking about a Sports Utility Vehicle and then an SUV - 3 syllables instead of one. So I still say Jeep.

But then, at least in the US, no amount of marketing money has made people stop calling a facial tissue a Kleenex.

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