

# Smooth operator

Could the Madrid metro map be easier to understand? **Jeff Wiseman** talks to **Dr Max Roberts**, a British psychologist who is looking to make our underground journeys smoother in every sense of the word

do you belong to a metro group? Perhaps you're an "outy"—happy to be last on, because it allows you to be first out. Or maybe you're an "endy"—someone who prefers an end carriage because they're invariably good for the station exit. But at present, following recent academic research, the most important question is whether you're a straight or a curvy. This doesn't concern the trains, or the stations, but instead the one aspect of underground travel that no passenger can avoid—the map.

## Starting point

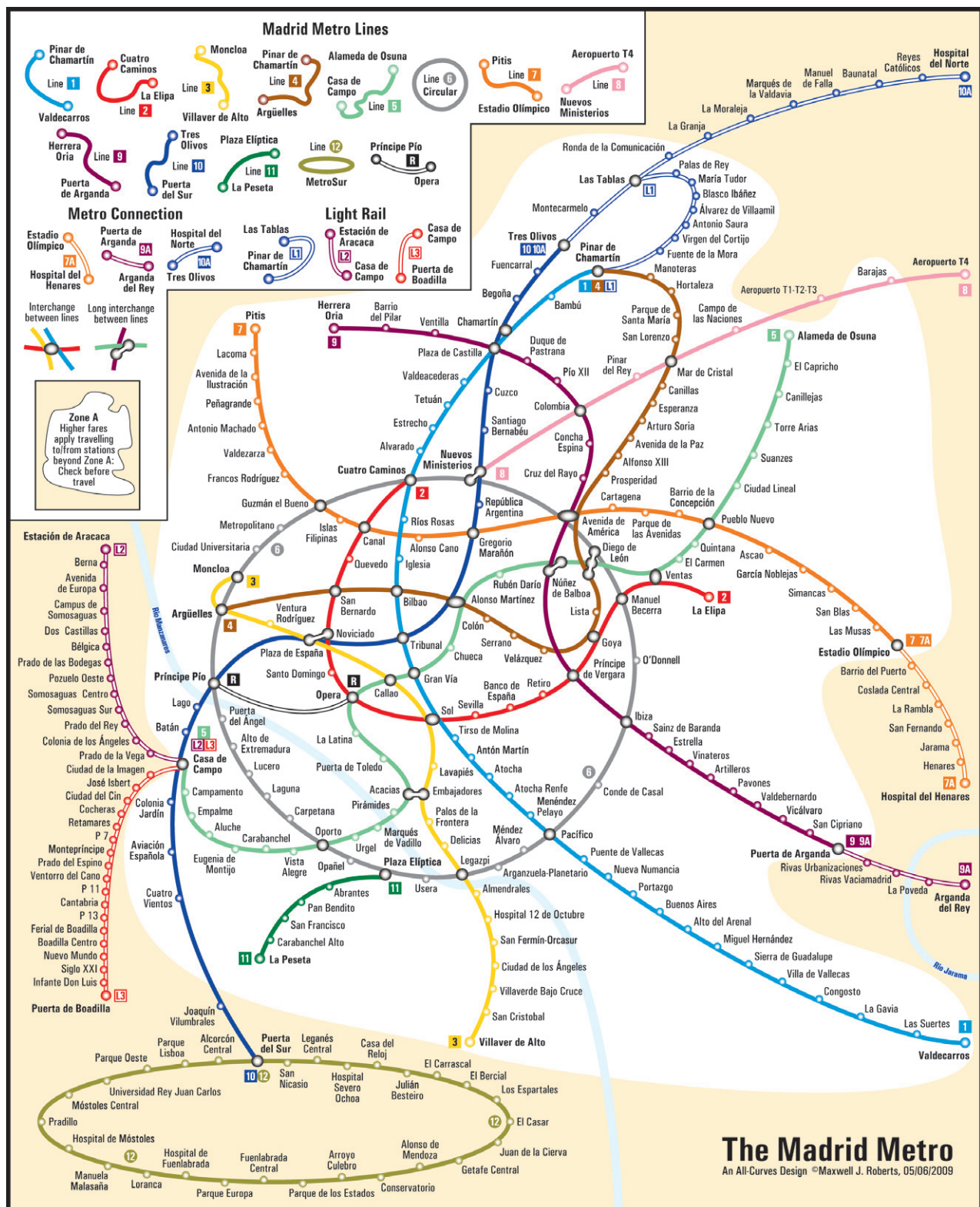
It started in London. Dr Max Roberts, a psychologist at the University of Essex, became curious about how we use design to help us find our way. The London Underground map is a classic, but he wondered if it really served its purpose as well as possible. His idea, as he says, was "to take away the harsh zig-zags and replace them with smooth curves". It sounds like trying to turn C3PO into Cameron Diaz, but Dr Roberts was undeterred, and a new curvy Underground map was born.

"I've always been interested in maps. They're liberating," he says, when asked about the origin of his interest. "I was allowed out by myself from quite a young age, and maps helped me go wherever I wanted." He bought a book about the history of the London Underground map, which examined the original design



The good doctor himself

Photo: InMadrid



The new, curvy Madrid Metro map

Photo: InMadrid

by Henry Beck, and showed proposed extensions. "I thought the extensions didn't make it look very nice, and that Henry Beck wouldn't have liked it either. I suddenly decided to have a go myself".

Nothing divides opinion quite so much as changing something with which everyone is familiar, and sure enough reaction was mixed. Dr Roberts' experimental curvy map was loved for its playfulness, but hated for its lack of geometry. While neither is correct in correlating with reality above ground, the curvy is in fact the more accurate geographically. Decide for yourself by checking out the curvy version at <http://london-underground.blogspot.com/2007/06/curvy-tube-map.html>.

## Round trip

But if London was the starter, Madrid served up a main course. The team in charge of the latest design for the Madrid metro map in 2007 were inspired by Dr Roberts' ideas. The lead designer was Rafa Sañudo, of Raro design, and the company created both straight and curvy examples, which can be seen at [www.raro.net](http://www.raro.net). The curvy version wasn't chosen in the end, but Dr Roberts thought it had too many wiggles anyway. He felt it could be rounded even further to make the map more aesthetically pleasing and easier to read.

He therefore re-designed it himself, improving its fluidity, and the end result can be seen above. What's immediately noticeable is the circular and centralising effect of Line 6. On the current official map, this line is rectangular and perhaps the most indistinct, though its grey colour doesn't help. To give an indication of what has been ironed out, Lines 1, 3 and 5 on the current metro map all have 12 right angles. But of course the key question is which map serves the traveller best. Dr Roberts decided to put the "straight" and "curvy" to the test.

## Getting on

With the help of university student Chrysavgi Doukanari, 20 people were tested with the official Madrid map, and 20 with the curvy one. None of the participants were familiar with the city nor its metro, and they were asked to plan their best route for five journeys, each of which included at least two changes of train. They were then asked to complete a ratings ques-

tionnaire, which revealed some remarkable results.

Using the official map, the average time taken to plan a journey was 44.5 seconds. The average for the curvy map was 22.6 seconds, almost twice as fast. "This is an enormous difference," confirms Dr Roberts. "One of the largest between a pair of maps I have ever seen." Basing an estimate of two minutes per station, and ten minutes per interchange, the people using the curvy map also figured out quicker journeys—an average of 60.9 minutes, compared with 70.1 minutes for the official map. "It is rare to get such a large difference in estimated journey duration too," he adds. He believes the current map fails to focus people's attention, so that their gazes flounder when attempting to identify detail.

Finally, the overall score from the questionnaire put the icing on the cake. With the maximum result being 77, meaning the user loved the map, and an indifferent score being 44, the curvy map hit a rating of 63.4, while the official map struggled with a rather disappointing 34.8. In terms of the 40 participants, 31, or more than 75 per cent, preferred the curvy option.

## Next stop?

So is the design of the metro map likely to change? Dr Roberts is realistic. "In any country, large bureaucratic bodies like state transport undertakings hate the thought of outsiders doing a better job than they do, so I have not even tried to contact the officials in Madrid. On the other hand, the city guidebooks market is huge, and most of these like to include a metro map, so I am sure that in the future some of my designs will surface in some form or another."

It's been a long and fascinating ten-year journey for him. There is now a travelling map exhibition (see [www.essex.ac.uk/~mjr/umu.pdf](http://www.essex.ac.uk/~mjr/umu.pdf)), which started last February in the UK, and has been a success. It includes maps that break all the rules, that teach us about good design, that challenge our preconceptions, and even maps that are purely decorative. But there's been no real map for his path. In fact, perhaps uniquely, the journey has actually been the map itself.

**What do you think of Dr Roberts' alternative Madrid metro map? Email your opinions to [editor@in-madrid.com](mailto:editor@in-madrid.com)**