Knowing Where We Are

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REFLECTION

More than normally, the summer always seems a time when maps play a bigger part in life.

I recently spent a few days in France, successfully navigating from home down through the tunnel and on to Calais, and down to the Loire. Whilst the motorway offered the attraction of speed – it was the byways that more frequently won the day, and then the maps became ever more important and ever more detailed.

Aren't they wonderful things. Rich in information and in allusions to the history and culture through which one is moving. A water-mill here, a disused cart-track there, a colonnade of ancient trees, a series of ponds over the way and a crumbling manor house in the distance. With a good map it's easy to conjure-up images of the lives that have been lived here and that have shaped the landscape.

The Ordnance Survey map series – with which we are blessed in the UK – originates (as the name suggests) from our military past. Specifically, it goes back to 1747, when Lieutenant-Colonel David Watson proposed the compilation of a map of the Scottish Highlands to facilitate the subjection of the clans following the Jacobite rising of 1745. King George II commissioned the survey of the Highlands, which produced a map (now in the British Museum) on a scale of 1 inch to 1000 yards. From this initiative, the Ordnance Survey was born, with the famous 1inch to a mile maps starting in 1801. Perhaps we shouldn't be surprised that following fast on the heels of military priorities there would come the fiscal ones… the six inch to a mile map of Ireland (1824) being created for reasons of accurate land-taxing.

But whatever the history, there is just an astonishing mass of data in these OS maps: freight sidings; narrow-gauge railways; disused tunnels; marshes and salting; towpaths and locks (directional); mean low water marks; beach designations (shingle); level crossings; ferries (foot and car); bridleways; unfenced roads; motorway service stations; churches; farms; tumuli. All this and much more, quite apart from the geographical data about rivers, valleys and hills – with all the contour lines. The power of these maps was recently illustrated to me by a lovely piece of software. Using a digital version of the OS, one could mark two points on it and 'fly' along the line that connected the two points. The visualisation graphics are entirely dependent upon the data in the maps – and it's almost like skimming the fields in a light aircraft.

So what about the very first maps? If military and fiscal imperatives inspired UK map-making – what about the very earliest maps in the world? Not surprisingly everyone was at it. The Chinese (700 BC), the Romans, the Greeks, the Middle East (Babylonia and Kirkuk 2,400 BC), and even in the Lascaux caves in southern France (16,000 BC) there appear to be wall-painted charts of the night sky. The first known 'picture map' is from Catalonia, (now Turkey) and dates from about 6000 BC.

The emerging tradition has left us with maps as flat spatial arrangements. North, south, east, west… and the distance on the map is related (on some scale) to the 'real' distance on the ground. But mapping space is only one way to do it. Since – on a journey – space is related to time, it is quite possible to envisage maps that use time (rather than distance) as their basic scale. The ancient maps used by Genghis Khan demonstrate this most effectively. The representations of the grassy plains of Mongolia are foreshortened because they could be crossed quickly by his horsemen. And the mountain trails and passes are represented as being much larger (in relation to their 'real' size) because it took so much longer to cross them. Imagine what a map of the UK would look like if based on time of travel. Cities would become far bigger … and one would need different maps for different times of day… motorways would foreshorten the north south axis … but the highlands and much of mid Wales and east Anglia would expand. It is these distortions that go a long way to explaining the apparently odd shapes of early maps – created at a time when they reflected the experience of people passing through the terrain – rather than standing above it looking down.

Which brings me – in an appropriately circuitous fashion – to the point of the story. Mapping processes require fixed datum points to make sense of them.

The harsh reality of this imperative has become brutally apparent to me over the last few months. I have been renovating an old boat – and building a cabin and wheel-house into it. I was always pretty good at Technical Drawing (A level no less) … and my assumption was that I would draw the details of proposed additions and then – using the resulting measurements – just build them in. But the hull curves in every conceivable direction. The cross section is curved … as is the longitudinal section … and the horizontal section. And the combined result is that the cross section constantly changes as you move down the length of the hull; the longitudinal section changes as you move across the beam; and the horizontal section changes as you move vertically up from the keel. So despite my supposed prowess with Technical Drawing I could not find or create sufficiently effective datum points to make my drawings meaningful for measurement and manufacturing purposes. In the end I found that cutting

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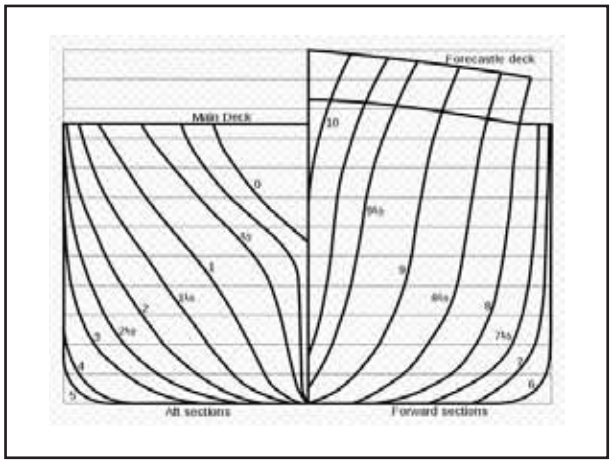

out templates with large sheets of cardboard proved a much more useful approach. During this process, my admiration for naval architects – who created and worked from these kinds of drawings – rose significantly.

As I was writing this ... I realised that my colleague Kay Stables would undoubtedly remind me that the same issues face fashion designers. There is nothing regular about the human body, and I disturbed her holiday to ask her about how garment designers deal with it. Not surprisingly they create datum lines – though they don't call them that. Shoulder line, bust line, waist line and hip line are effectively horizontal sections through the body; and nape-to-waist, and inside-leg are effectively longitudinal datum references. Of course, whist these might be agreed fixed points of reference, the real numbers are differently distributed in every individual and as mass-market designs assume mass-norms, they rarely fit anyone really well.

The point of this story however – which I really am coming to – is that complex phenomena can only be mapped if there are some agreed datum points from which to start measuring. Even the weather can be mapped, using agreed measurement scales for barometric pressure (indexed to mm of mercury on a scale) and temperature (indexed to the freezing point of water). But what if the phenomenon we are seeking to map is not only complex – but not even physical? What if it's conceptual? Like the performance of our children in schools. What datum points are there to use?

Should our datum be the mean performance of the whole cohort of students (like mean high-water mark)? This would be an absolute form of norm referencing. Should our datum be the percentage of A* grades for 16 yr olds (or level 5 SAT scores for 11 yr olds) compared to last year? This is fraught with all the problems of measuring performance trends over time – a notoriously dodgy pastime. Should our datum be the percentage of learners who choose to go on to higher education? This is subject to variabilities of supply as well as demand, so would be very difficult to interpret. Or should the exercise not be attempted at all – on the grounds that performance is such a personal construct that all we should be concerned about is the individual and his/her progress?

Each of these four options reflects a different ethical position about the nature of education and the relationship between individuals and the state, and they demonstrate that it is very hard to agree datum points with which to discuss educational progress. Alarmingly, the most commonly used datum point is enshrined in school league tables: 5 GCSE passes at grade C; but calculated as school averages.

The idea originated in the belief that we should create a 'market' in schools – getting them competing with each other. Competition is (apparently) good … even when all the socio-economic cards are stacked in favour of some and against others … and even when it creates questionable policies; about admissions; about who is entered for exams; about selective coaching; and the rest. The notion of league tables is so patently unfair – and damaging to the broad culture of education – that one could be forgiven for being astonished that it has become an agreed datum point. Maybe it has just been foisted on a sceptical public by a (dominantly) conservative press. But then I recall a conversation with Vic Kelly – a great professor of Education at Goldsmiths. He commented (over a beer in the Goldsmiths Tavern) that if you want to exert a really conservative force on schools – unleash the power of parents.

I wonder what an OS contour map of league table performance would look like. The legend-box in the corner could be really interesting. It could have all kinds of icons, e.g. 'former Grammar school' … 'slough of despond' [30% unemployment] … 'Chelsea tractor turning point' … 'beyond here be serpents'….

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