

PRODUCING MAPS FOR RECREATION – A GUIDANCE NOTE

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This note summarises a scoping study into mapping for countryside recreation, however, much of it is also applicable to urban and indoor environments. The full study can be downloaded from <http://www.bowlesgreen.co.uk/work/interpretation/>

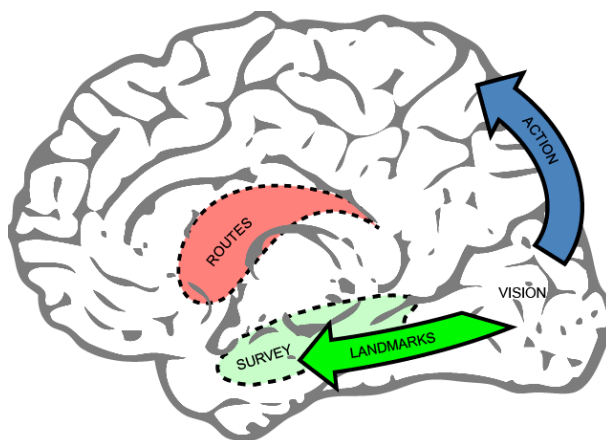
Brain Work

First, a little science! The brain uses multiple systems to understand mapped information and these take place in different parts of the brain. The three systems it uses are:

- *Landmark knowledge* – recognising and remembering landmarks, especially at route decision points
- *Route knowledge* – linking landmarks together to form a route
- *Survey knowledge* – understanding the spatial relationships between landmarks to enable alternative routes to be calculated

Important areas of the brain are:

- *The hippocampus* – analogous to a GPS and to a compass
- *The Caudate nucleus* – analogous to an autopilot
- *The parietal cortex* – analogous to a radar



- Ventral Stream (landmarks, scene recognition)
- Dorsal Stream (objects relative to body, translating vision to action; "radar")
- Caudate Nucleus (route knowledge; "autopilot")
- Hippocampal formation (survey knowledge; "map", "GPS", "compass")

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“The brain uses multiple systems to understand mapped information”

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Brain scan research shows that different people – especially men and women, but also people of different ages and with different levels of experience (of the specific site and of the countryside in general) rely more or less on each of these knowledge systems. So, people at different points of three ‘continuums – sex, age and experience - need different kinds of information to help them find their way easily.

Comparing Practitioners Experience with the Science

Interviews with countryside managers who have experience of producing maps for direction-finding, interpretation, etc. showed that there is scientific evidence to support many of the assumptions used by countryside managers when producing mapped information.

Table 1: Comparison of Practitioner Assumptions and Scientific Research

Practitioner Assumptions	Scientific Research
Males are better than females at reading OS type maps	Males more commonly use survey knowledge and females more commonly use landmark knowledge
Children have difficulty understanding OS style maps	Children have difficulty understanding a perspective other than their own
Women, less fit people and older people appear more anxious about getting lost	Anxiety about getting lost is higher amongst females than males
Experienced walkers don't use panels, special site maps and waymarks, rather they rely on OS maps	Experience is an important factor in being able to read a map It takes time and training to become a competent map reader
Flat maps are more effective for navigation	Gap in the knowledge
Three dimensional maps or illustrations are better for orientation and interpretation	Gap in the knowledge
Use of colour, symbols and labels should be consistent, distinct and simple	Omitting superfluous information makes a map more effective for its chosen purpose Adding relief information can make the whole map confusing
Keep mapping simple	Contours and other portrayals of relief can confuse the user Understanding of topography can be critical to understanding landscape. Unresolved.
People seem to like routes that are clearly waymarked	Some users, especially (but not exclusively) women rely more on landmark knowledge
Less confident people appear reassured by infrastructure	Experience is an important factor in being able to use survey knowledge – less experienced map readers will rely more on landmark knowledge
Mountain bikers need little by way of way finding information	Gap in the knowledge
People with learning difficulties seem to relate well to three dimensional maps	A congenitally blind 4-year-old was able to 'read' a tactile map and use information gained in an appropriate way

The over-riding message from the research is that people use a variety of strategies for reading/interpreting mapped information and, though there are differences in

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the way different types of people understand mapped information, these are not definitive. For example although males in general understand and can use O/S-style maps better than females, some females understand them better than some males. The same appears to be so for the other two continuums identified – age and experience.

Therefore it is good practice to supply information in a variety of forms – maps, waymarks and written route descriptions, so that the widest possible audience will be able to understand it. However, if you are able to define your audience by one or more of the sex, age or experience continuums, the following tables show the characteristics of different groups and what information they (in general) prefer.

Table 2: Characteristics of Different Map Users

Male		Female	
<ul style="list-style-type: none"> Use survey knowledge Good at using maps for navigation 		<ul style="list-style-type: none"> Use landmark knowledge Experience high levels of anxiety over getting lost 	
Younger	Mid-aged	Older	
<ul style="list-style-type: none"> Struggle to understand the environment other than from their own perspective 	<ul style="list-style-type: none"> Better at reading maps 	<ul style="list-style-type: none"> Lose the capacity to understand mapped information 	
Experienced		Inexperienced	
<ul style="list-style-type: none"> Good at reading mapped information Can understand mapped relief 		<ul style="list-style-type: none"> Mapped relief confuses the inexperienced Experience high levels of anxiety over getting lost 	

Table 3: Information for Different Map Users

Male		Female	
O/S style maps		<ul style="list-style-type: none"> Waymarks linked to simple maps 	
Younger	Mid-aged	Older	
<ul style="list-style-type: none"> Waymarks linked to simple maps 	<ul style="list-style-type: none"> O/S style maps 	<ul style="list-style-type: none"> Waymarks linked to simple maps Written route description 	
Experienced		Inexperienced	
<ul style="list-style-type: none"> O/S style maps 		<ul style="list-style-type: none"> Waymarks linked to simple maps Written route description 	

Further aspects of good practice identified in the study are as follows:

- Promotional leaflet maps should show site in relation to major roads, settlements and significant features or landmarks. They should include a grid reference and a postcode (this can be used by satellite navigation devices)

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- Use 3-D illustrated maps for promotion, orientation, interpretation and landscape appreciation
- Use flat maps preferably linked to features and waymarks for navigation
- Use colour in a simple and consistent way, as follows:
 - Brown – with lighter to darker shading to denote height
 - Green for woodland
 - Blue for water features
- Only use contours if you shade the space between as suggested above
- Using dotted lines for routes enables the viewer to see what the route is crossing over/through
- Produce downloadable maps at A4 size, ensure they load quickly and keep them simple so that they reproduce on poor quality printers, but beware copyright issues also the 'currency' of the map data
- Make sure that maps on panels are aligned to the perspective of the viewer
- Where possible, also ensure that maps on leaflets are also aligned from the perspective of the viewer – i.e. from the main arrival point, though this is more difficult when there are multiple arrival points of equal importance

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