

Geo-Refer: geographical referencing resources for social scientists

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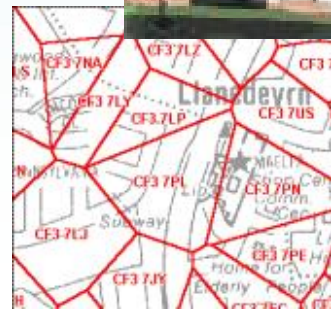


Background to project

- Geographical referencing: a key data linkage tool
- Frequently needed by non-geographers but no obvious source of methodological guidance (“phone a friend?”)
- Recent experience in creation of online learning materials

Examples

- Link survey results to census data
- Associate postcoded patient records to Indices of Deprivation
- Allocate questionnaire responses to urban/rural neighbourhood types
- Identify which service delivery locations fall within different policy areas
- Use GPS to record survey locations



Learning object example...

- (from online GIS Masters modules)
- Portability
- Independence
- Standards

Assignment: GIS Exploration of a Point Pattern - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address D:\Presentations\DialogPlus PSU Sept 05\ps2_2_7.htm

Google Search New! 0 blocked ABC Check AutoLink AutoFill Options

GIS Exploration of a Point Pattern

The purpose of this object is to consider a classic study in the history of epidemiology involving the investigation of a point-based disease dataset for which the causal mechanism was not understood at the time. Although conducted more than a century before the advent of GIS, the principles involved are of great relevance to our use of public health datasets in the GIS investigation of disease causality.

The presentation of this case is therefore a potential first step not only for medical cartographers but also for virtually all disciplines interested in the origin and diffusion of diseases (Koch and Denike, 2004)

Broad Street cholera cluster and modern replica of the water pump

In the Nineteenth Century London experienced a series of cholera epidemics. Cholera is an acute bacterial infection of the intestine caused by ingestion of food or water contaminated with the *vibrio cholerae* bacterium. Symptoms include diarrhoea and vomiting leading to severe dehydration which may be fatal (WHO, 2003). At the time, little was known of the causal mechanism of cholera and two principal rival theories were (a) miasmatic theory: that the spread of cholera was through the air, polluted by decaying bodies and vegetation, and (b) polluted water theory: that it was through drinking water that had been polluted through some previous contact with the disease. John Snow was a physician who took a particular interest in the cholera epidemics and his observations led him to be a strong proponent of the polluted water theory. He noted that transmission rates were particularly high within poor households living in crowded insanitary accommodation with communal water

Done My Computer

...typical structure

Calculating Standardized Rates

It is particularly important when working with geographical health event data that prevalence rates are standardized to appropriate population denominator counts. We shall consider the standardization of rates here in relation to mortality data, although the principles apply equally to morbidity data.

Mortality rates are one of the most frequently used health indicators and are derived from information about death registrations. Death certificates vary in detail between countries but will generally include a record of the age, sex, place of residence of the person who has died and cause of death. In many countries additional information such as employment allow social class and other analyses to be conducted on death registration records. A standard encoding system known as the International Classification of Diseases (ICD) is generally used in order to classify the cause of death recorded on the certificate for statistical purposes. Crude rates – expressed as the number of occurrences in relation to a population denominator – use denominator populations of different sizes, according to the rarity of the event. The paper by Buring and Kelly (1997) that examines geographical pattern in suicide rates uses crude rates per million population, for example, while the World Health Organization data used here are reported per 1,000 population.

The table below shows main causes of death by age-group in Scotland in 1999 (death rates per 1,000 population) from the World Health Organization Statistical Information System <http://www2.who.int/whosis>.

Death by Age Group in Scotland		
All causes (per 1000 population)	1st	2nd
Under 1	Perinatal causes (2.32)	Congenital anomalies (0.93)
0 to 4	Accidents (0.05)	Congenital anomalies (0.04)
5 to 14	Accidents (0.16)	Traffic accidents (0.03)
15 - 24	Accidents (0.95)	Stroke (0.14)

online activity

Flash movie

html/xml

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images

GIS zip

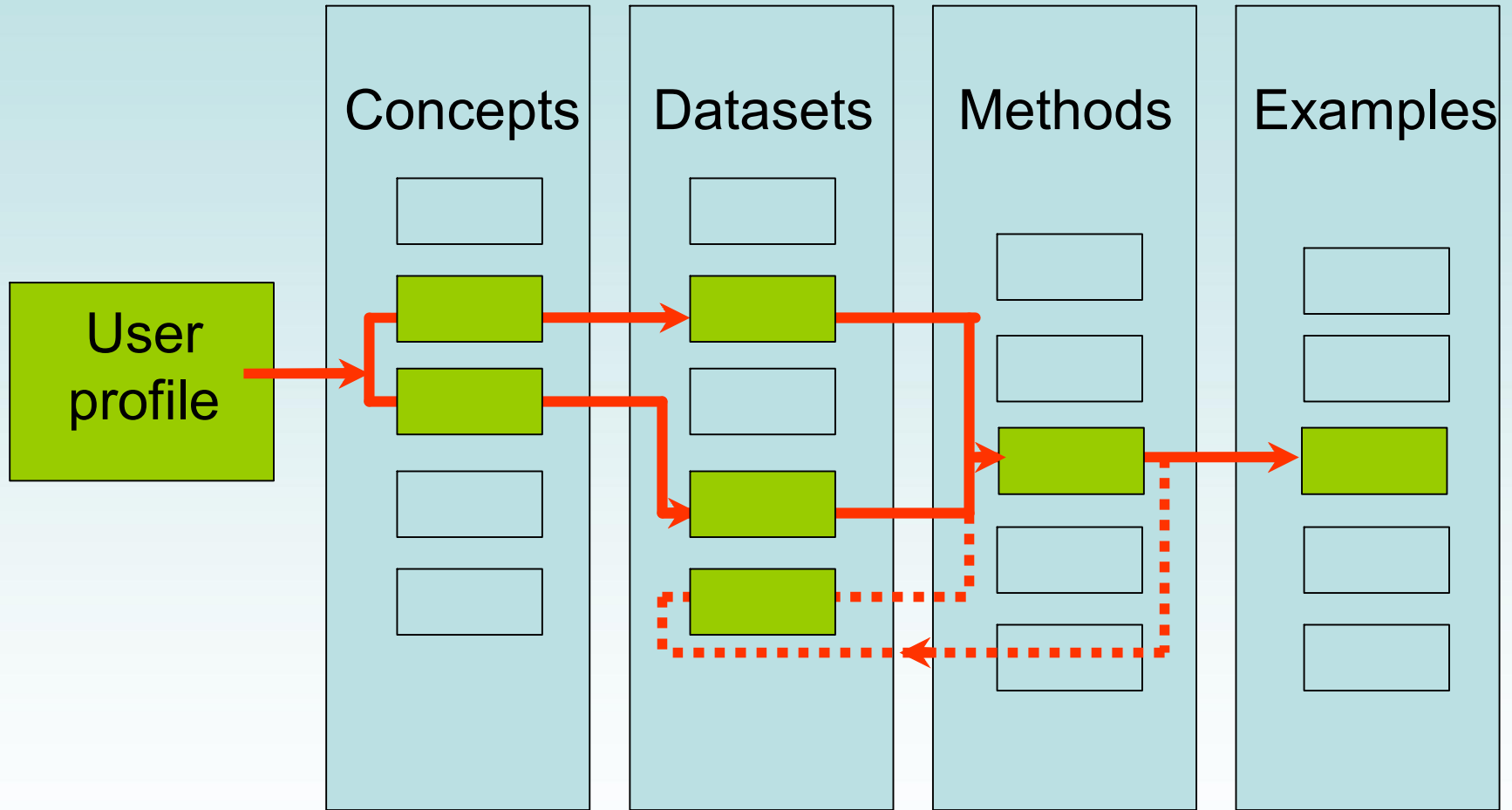
data

PDF

Mode of working

- Recruit exemplar projects
- Author principles, techniques and datasets learning objects
- Run workshops with interested users
- Assemble exemplar learning objects
- Object library - repository
- User-profiled tutorial delivery interface

Online resource overview



Deliverables

- Online learning resources
 - Suitable for re-use
 - Integration with NCRM, census portal, etc.
- Intelligent presentation environment
- Face-to-face workshops
- Assistance to exemplar projects



The screenshot displays two web browser windows. The left window, titled 'ESRC Census programme - About the programme - Tiscali 10.0', shows the '2001 Census of Population Programme' page. It features a navigation menu on the left with links for 'Home', 'About the census', 'About the programme', 'Data support units', 'Registration', 'ESRC subjects', 'Training', 'Research', 'Useful resources', 'News', and 'Go to data'. The main content area provides information about the programme's funding from the ESRC and the Joint Information Systems (JIS) of the Social Research Council and the Joint Information Systems of the ESRC, detailing data access for the 1991, 2001, and 2011 censuses. The right window, titled 'ESRC National Centre for Research methods - Tiscali 10.0', shows the NCRM website. It includes a navigation menu with links for 'Home', 'Events', 'Training', 'Resources', 'Publications', 'News', 'Newsletters', 'Register', and 'Links'. The main content area features a welcome message, a list of resources, and a 'Latest news' section with several announcements, including a job vacancy for a Research Associate and a call for proposals for writing successful research proposals.