Data Management and Practice Group Project

David Glauber

Meghan Brunelli

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Dr. Huang

University of South Florida

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Introduction/Background Information:

As a data management librarian, it is essential to explain not only the resources that the library has for scholars but also how those resources may be used by them for potential research endeavors. For that reason, it is necessary to create a data plan for resources that the library has in its in house database as well as those that may be accessed from likeminded research institutions. The University of York, in the United Kingdom, hosts an impressive archaeology database called the Archaeology Data Service. One of the many useful data sets obtained from this service focuses on Roman coins from the area of Wales, in western Britain. In "Iron Age and Roman Coins from Wales," Dr. Peter Guest of Cardiff University and his research assistant Nick Wells endeavor to establish a comprehensive catalog of the 52,813 mostly Roman coins relating to Wales that span from the first century to the fifth century A.D.

As one of the cornerstones of Western Civilization, it is important for scholars to uncover as much information as possible about life in Ancient Rome. Romans produced great art, literature, and established infrastructure, such as paved roads and bridges, which resemble those used in the present day. All of these things help to tell a story about the Roman Empire. Researching Roman coins adds a multi-dimensional element to the study of ancient history that builds on knowledge of the past. From an artistic perspective, coins depict symbols of culture that are important to a society; from an historical perspective, coins provide a record of the political leaders of that society, and from an archaeological perspective, they serve as resources that can help archaeologists in the midst of an excavation to determine the dates of artifacts found near the coins. Likewise, coins provide a story of the economic success of the Roman empire as a whole, and of the people within a particular area, such as Wales.

Data Use Scenario Analysis 1:

| Number	107083	
Name	Historical Research	
Summary	User conducts historical research utilizing documents	
Priority	5	
Preconditions	User is connected to the internet to access online search engines and databases	
Postconditions	User has cited documents within research essay, giving credit to document authors	
Primary Actor(s)	Historical researcher	
Secondary Actor(s)	Scholars Publisher	
Trigger	Researcher chose to write about Roman history	
Main Scenario	Step	Action
	1	Researcher conducts internet search for documents on Rome
	2	Search leads to discovery of Archaeological Research Service
	3	User conducts keyword search for Rome
	4	Search results yield hundreds of datasets related to Rome
	5	User clicks on article, "Iron Age and roman coins from Wales."

	6	User reviews and analyzes documents related to dataset
	7	User decides to focus their study on Roman history in Wales
	8	User takes notes on documents
	9	Researcher writes essay
	10	Author submits article for publication
	11	Readers enjoy/criticize essay
Extensions	**Step**	**Branching Action**
	2a	User decides against using database
	2b	User returns to internet search
Open Issues	6	Should the database provide citation information for users?

Data Use Scenario Analysis 1

The data compiled by Peter Guest and Nick Wells, "Iron Age and Roman Coins from Britain" can be utilized by historians in order to better understand Roman control over western Britain. Guest and Wells compiled a list of coins that have been excavated from archaeological digs in the area of Wales. By analyzing this list, it is possible to learn about the Roman leaders, its commercial operations and the extent of their economic power in western Britain. For instance, the vast majority of coins found were made from copper or a predominantly copper composition, called billon. Billon includes traces of gold and silver. This shows that copper was widely available and that the medal was held in high esteem commercially. Gold and silver coins have also been discovered, but they have been discovered in smaller numbers from this region. Perhaps that a large amount of gold and silver did not slow into the area. These results from Wales can be compared to results from other archaeological digs for a more conclusive answer to that question. Additionally, were the coins minted locally or received from a centralized location can provide hints about the power of the Roman government and its control over Wales.

The data is freely available from the Archaeological Research Service, but it requires researchers to have access to a computer with Microsoft Office and for them to agree to the terms of service for the website. The list of coins can be downloaded onto the researcher's computer with a csv file that can be read with Microsoft Excel. Searching for documents compiled by Guest and Wells requires having utilizing a web browser that points to the Archaeological Research Service's website. Researchers can search the website's catalog, retrieve and analyze data, take notes, and write an essay for potential publication.

Data Use Case Scenario 1

Historical Research

CMSC 345, Version 9/07
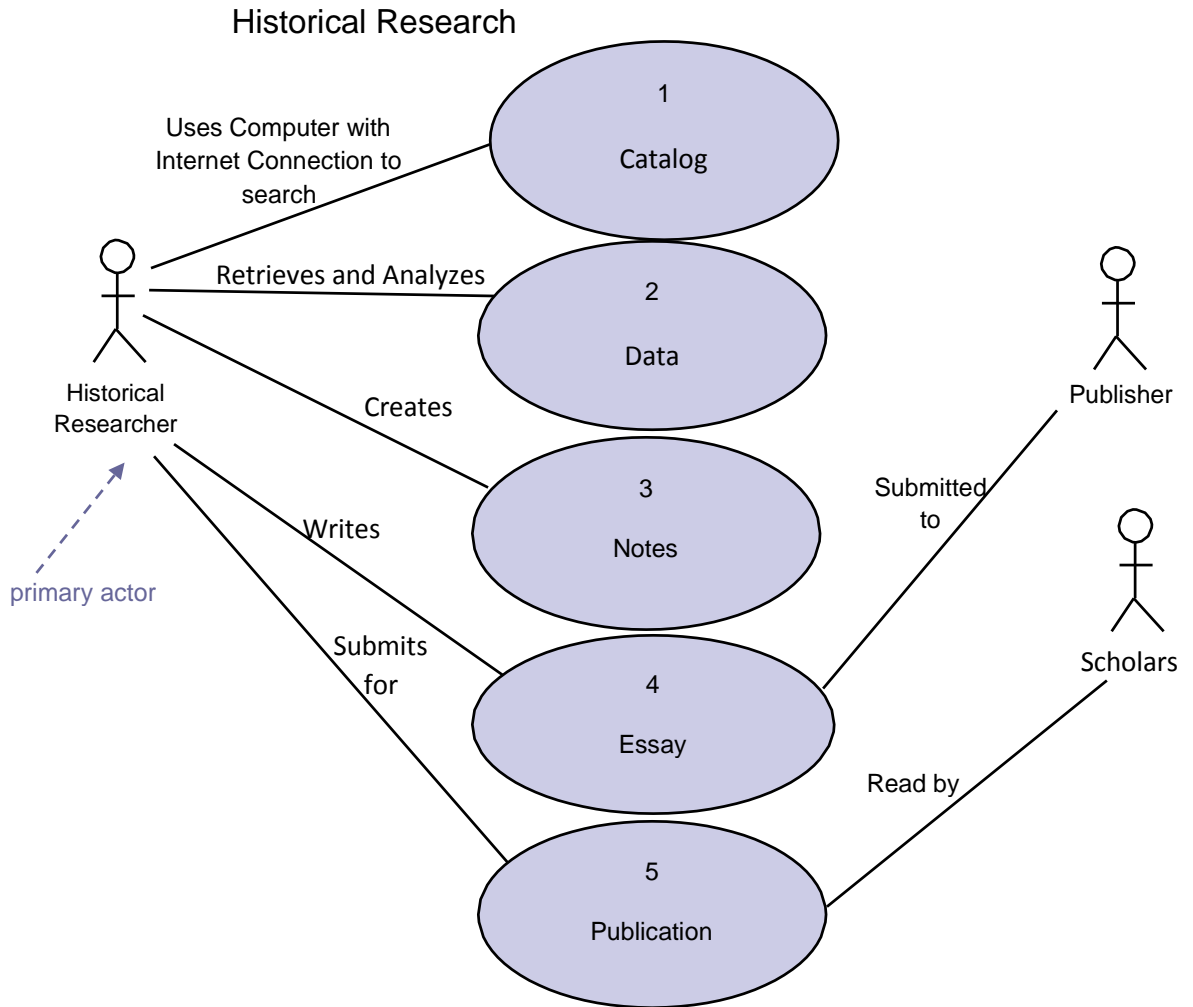
Data Management Scenario Analysis 1

An historical researcher is writing an article about the Roman Empire and its expansion into the region of Wales. The dataset on "Iron Age and Roman Coins from Wales" provides information on 52,813 coins recovered during the archaeological excavations. To eliminate data that is irrelevant to the history of Rome, the downloadable comma separated value, or CSV file can be exported to Excel and then sorted to remove information about coins not known to be of Roman origin.
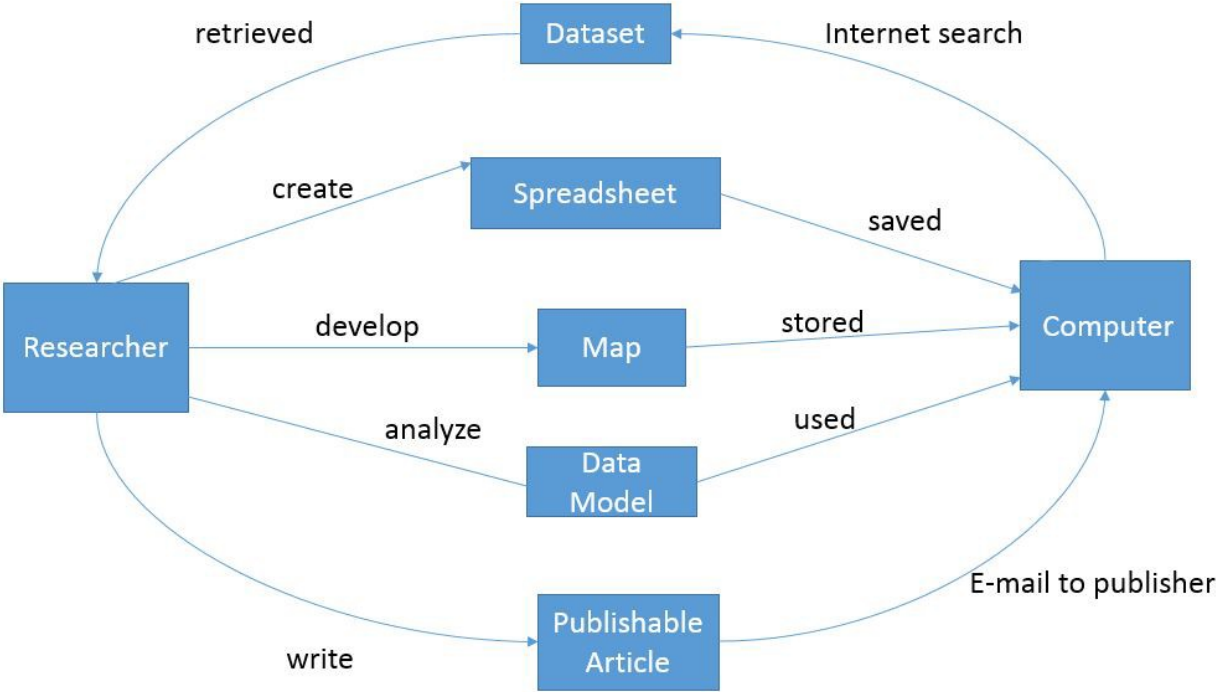
The remaining coin finds can then be sorted by date range or by issuing emperors to meet the specific needs of the researcher. Each coin presented in the data sheet has been assigned a "Coin Identification Number." The coin numbers are assigned based on the location of the find and in which order the coins were recorded at the find site. Each location has also been assigned a "Find Number." The researcher can download a second CSV file, which is the dataset containing the information specific to each find location. By cross-referencing the assigned "Find Numbers" from the relevant coin details in their dataset, the researcher can then review the details of the actual coin finding event. This information includes the date of the find, the geographical location of the find including the Cartesian coordinates, and whether it was as a single coin find, an excavation or a hoard. When available, the dataset includes detailed information about the actual find event which can guide the research to mapping the discovery locations and the specific coins.

From an historical perspective, the researcher is able to establish the expanse of Rome's presence in modern-day western Britain during certain eras based on the specific coins that have been excavated there as well as the exact locations at which they were found. Since the downloaded dataset can be converted to Excel format, the researcher can easily store them on a

computer or an independent flash drive. This makes the data permanently available to the

researcher for duplication or further micro-manipulation as well as for future review. The

researcher can even create multiple tabs on the Excel sheet and segregate the coin details and

find location information into separate tabs based on era or geographical region.

Data Management Scenario 1

Data Use Scenario Analysis 2:

| Number	107083	
Name	Economic Research	
Summary	User conducts economic research utilizing documents	
Priority	5	
Preconditions	User is connected to the internet to access online search engines and databases	
Postconditions	User has cited documents within research essay, giving credit to document authors	
Primary Actor(s)	Economic researcher	
Secondary Actor(s)	Scholars Publisher	
Trigger	Researcher wanted to compare Rome's economy to the American economy	
Main Scenario	Step	Action
	1	Researcher conducts internet for documents on Rome
	2	Search leads to discovery of Archaeological Research Service
	3	User conducts keyword search for Rome
	4	Search results yield hundreds of datasets related to Rome
	5	User clicks on article, "Iron Age and roman coins from Wales."

	6	User reviews and analyzes documents related to dataset
	7	User decides to focus their study on Roman history in Wales
	8	User takes notes on documents
	9	Researcher writes essay
	10	Author submits article for publication
	11	Readers enjoy/criticize essay
Extensions	**Step**	**Branching Action**
	2a	User decides against using database
	2b	User returns to internet search
Open Issues	6	Should the database provide citation information for users?

Data Use Scenario Analysis 2

The United States and the Roman Empire are often compared with one another as great world superpowers in their respective time periods. How do their economies compare? Economists can utilize coinage data compiled by Peter Guest and Nick Wells in "Iron Age and Roman Coins from Britain" in order to better understand the Roman economy. Was the Roman economy centralized? How much control was retained locally? By analyzing mint marks on the coins recovered from archaeological digs in Wales, economists can learn more about Rome's commercial sector. Additionally, how were Roman coins minted in comparison to today's coins? The vast majority of coins found at sites in Wales were made from copper or a predominantly copper composition, called billon. Billon includes traces of gold and silver. This shows that copper was widely available and that the medal was held in high esteem commercially. Gold and silver coins have also been discovered, but they have been discovered in smaller numbers from this region. Perhaps that a large amount of gold and silver did not slow into the area. These results from Wales can be compared to results from other archaeological digs for a more conclusive answer to that question.

The data is freely available from the Archaeological Research Service, but it requires researchers to have access to a computer with Microsoft Office and for them to agree to the terms of service for the website. The list of coins can be downloaded onto the researcher's computer with a csv file that can be read with Microsoft Excel. Searching for documents compiled by Guest and Wells requires having utilizing a web browser that points to the Archaeological Research Service's website. Researchers can search the website's catalog, retrieve and analyze data, take notes, and write an essay for potential publication.

Data Use Case Scenario 2

Economic Research
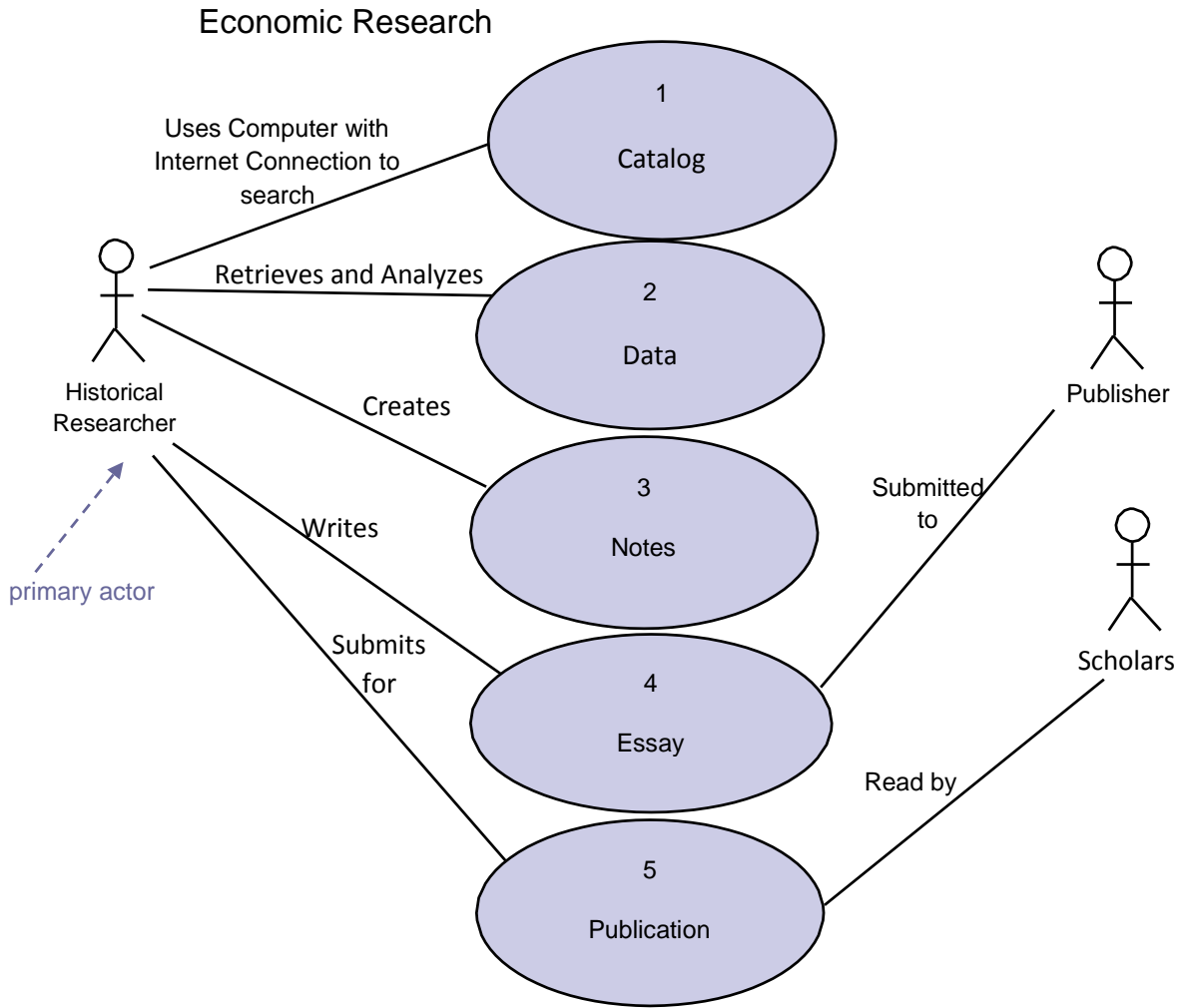
Data Management Scenario Analysis 2

The economic legacy of a nation can be studied as much by the impact it has left on the rest of the globe as by focusing on the financial history as it occurred within the borders of that specific nation. While searching the Internet for information about the economy of Rome, an economic researcher discovers the "Iron Age and Roman Coins from Wales" dataset housed by the Archaeological Research Service. The researcher is able to download the dataset as a CSV file and export it to Excel. The dataset provides information on 52,813 coins that have been discovered during archaeological excavations in Wales.

Once it is converted to spreadsheet format, the researcher has the ability to refine the results by sorting the data and eliminating all coins that did not originate in Rome. The remaining coin finds can then be sorted by date range or by issuing emperors to meet the specific needs of the economic researcher. Each coin presented in the data sheet has been assigned a "Coin Identification Number." The coin numbers are assigned based on the location of the find and in which order the coins were recorded at the find site. Each location has also been assigned a "Find Number." The researcher can download a second CSV file, which is the dataset containing the information specific to each find location. By cross-referencing the assigned "Find Numbers" from the relevant coin details in their dataset, the researcher can then review the details of the actual coin finding event. This information includes the date of the find, the geographical location of the find including the Cartesian coordinates, and whether it was as a single coin find, an excavation or a hoard. When available, the dataset includes detailed information about the actual find event which can guide the research to mapping the discovery locations and the specific coins.

Roman coins would have been used for commercial transactions or trades as well as to pay for military operations. From an economic perspective, the researcher would be able to establish the expanse of Rome's presence in modern-day western Britain during certain eras based on the specific coins that have been excavated there as well as the exact locations at which they were found. An understanding of Rome's ruling emperors, military history and trade methods would be beneficial to the researcher to apply significance as to why the coins may have travelled to Wales during the era they were minted.

Since the downloaded dataset can be converted to Excel format, the researcher can easily store them on a computer or an independent flash drive. This makes the data permanently available to the researcher for duplication or further micro-manipulation, as well as for future review. The researcher can even create multiple tabs on the Excel sheet and segregate the coin details and find location information into separate tabs based on era or geographical region.

Data Management Scenario 2
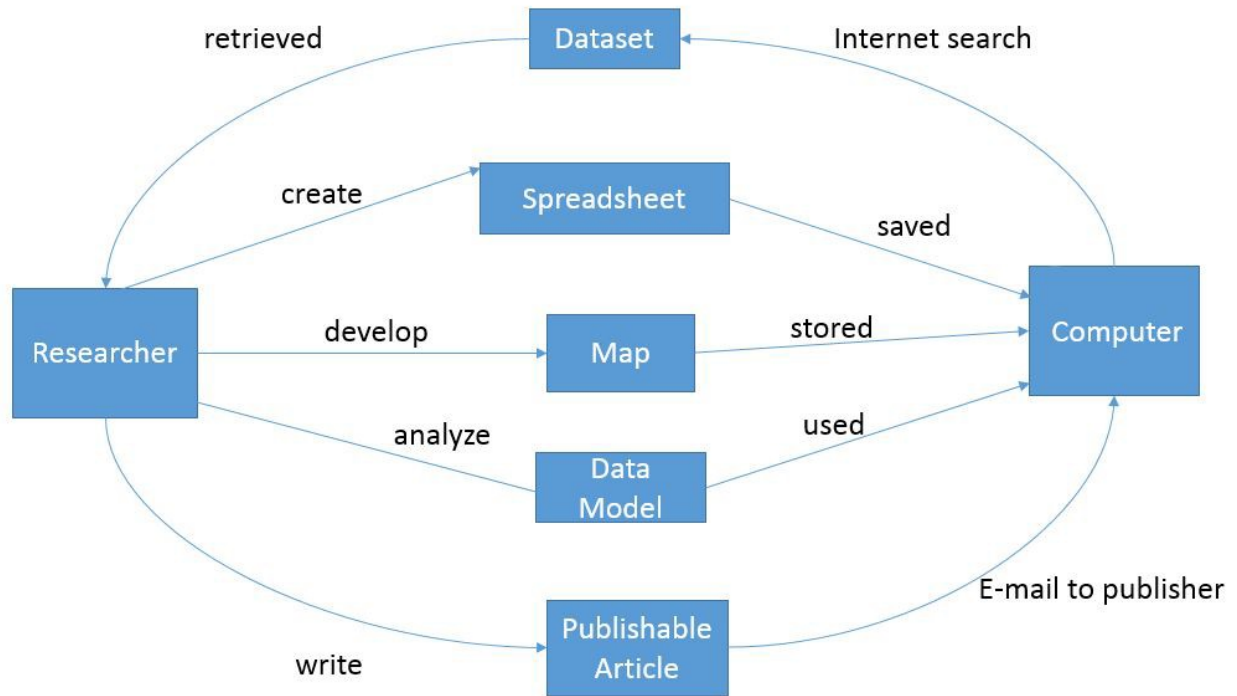
Design of a Data Repository's Metadata Schema:

Table 2. Grouping information categories			
Information category	**Information identified**	**Entity**	**Dublin Core elements**
Name of the dataset	Iron Age and Roman Coins from Wales	Dataset	title
URL of the dataset	http://archaeologydataservice .ac.uk/archives/view/iarcw_b cs_2007/index.cfm doi:10.5284/1000263	Dataset	identifier
Author(s) of the dataset	Peter Guest and Nick Wells	Dataset	creator
Email of data set creator	guestp@cardiff.ac.uk	Dataset	creator
Dataset publication date	May 3, 2007	Dataset	date
Category of Dataset	Historical data, economic data, archaeological data, numismatic data	Dataset	subject
Time scale of dataset	Iron Age, Roman	Dataset	coverage
Related information	Guest, P & Wells, N. (2007). Iron Age and Roman coins from Wales. Wetteren: Collection Moneta, 66.	Dataset	relation
File formats of data	jpg, txt, and csv	Dataset	format
Size of downloadable data	9.061 mb	Dataset	format

References

Archaeology Data Service (2016, February). Retrieved from http://archaeologydataservice.ac.uk/

Dublin Core Metadata Initiative (2012, June). Dublin Core Metadata Element Set, Version 1.1.

Dublin Core Metadata Initiative. Retrieved from http://dublincore.org/documents/dces/

Guest, P. & Wells, N. (2007).Iron Age and Roman coins from Wales. *Archaeology Data Service*.

Retrieved from http://archaeologydataservice.ac.uk/archives/view/iarcw_bcs_2007/

index.cfm