Material Culture/Objects

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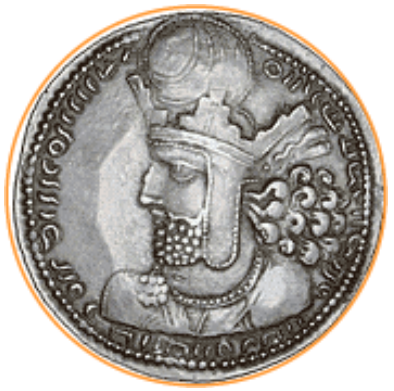
This essay explores ways to use material objects in the study of history. “Material objects” include items with physical substance. They are primarily shaped or produced by human action, though objects created by nature can also play an important role in the history of human societies. For example, a coin is the product of human action. An animal horn is not, but it takes on meaning for humans if used as a drinking cup or a decorative or ritual object. Historical sources analyzed as text or images, for example a legal charter on a piece of parchment or a religious painting, are also material objects, perhaps significant symbolically. The physical existence of a religious image in a dark cave as a “work of art” provides evidence of the piety of an artist or a sponsor. In some societies, before widespread literacy, the content of a legal document may have been less important than its existence as visible “proof” of a claim.



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Material Culture/Objects

Getting Started

Writing History from Objects

The ability to write history using material objects depends on what evidence has survived. For example, some organic material disappears in wet conditions or if not deeply buried. Thus, we may not have the flesh of animals which were consumed as food, but we may be able to determine from surviving bones which species they were. It is sometimes surprising how much evidence has survived. Past generations of archaeologists tended to look mainly for large objects and throw away the rest. Today's archaeologists record minute data. For instance, microscopic analysis of pollen can provide important information on plant life in the past.

Historians studying material objects also examine other kinds of evidence, such as writing, to understand the larger context. For example, we may learn about the function of a wooden implement excavated in the ruins of a 17th-century farmhouse only by reading a diary that describes its use. Conversely, seeing an object helps us understand a written description.

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Questions to Ask

What is It?

Historical analysis of material objects requires careful description. Look around your home or classroom. Objects are everywhere—jeans, coffee mugs, computers. You know what most of these are because they are part of your familiar environment. A person who lived a century ago, though, especially from a different part of the world, would have a difficult time understanding your material culture. Imagine visiting an archaeological excavation of a building erected 5,000 years ago in central Turkey. How easy would it be to understand the building's purpose and the function of the various objects, such as bone fragments and potsherds?

To analyze material evidence is to write an object's biography. Each object has a story to tell, a story shaped by human use. When historians analyze material objects, they begin by recording basic “facts,” starting with a verbal description and, if possible, photographs. The description might include measurements, material, and distinguishing features, such as ornamentation. This kind of information provides material for generalization about technology, economy, or social relations within a given society and how they changed over time. The material of the object (e.g., clay used to make a particular pot) may make it possible to specify where it was produced, especially if we have other evidence about centers of production.

When studying an object, start with these basic descriptions:

- Observe the object carefully, paying close attention to detail.
- Take notes on material, size, shape, and distinguishing characteristics.
- Turn the object over if possible, examining from multiple angles and perspectives.
- Note what the descriptive label (from a book, website, or museum) tells you, but do not let that description limit your questions.

These details are the first step to determining what an object is. But beware your assumptions! You are familiar with the fact that a comb has teeth, so you recognize a 5,000-year-old comb. What you may not know, however, is whether it had meaning beyond untangling hair, such as status for the wearer. A small, cylindrical piece of wood 2.5 cm. in height, slightly tapered from a base, with a diameter of 1.5 cm., might remind you of a chess piece. Such an object was found and so described in the ancient Russian city of Novgorod, but through extended study, archaeologists concluded that it was the blunt head of an arrow used to stun birds. All analysis begins with basic description.

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Questions to Ask

Where is it now and how did it get there?

The biography of the object includes information on owners of the object over an extended period of time and may reveal how the object was used or perceived in different settings, perhaps in ways unintended by its creator. An object produced for a practical function in daily life may acquire symbolic value at a later time. Or an object's original function may become irrelevant because society no longer has use for it or because people no longer know how the object was originally used. Most objects have passed through several historical stages and the location of discovery is rarely the site of production. How did the object reach its location of discovery? What does the context tell us about the object's environment and associations? Does the context provide information about date? Such evidence may reveal patterns of exchange and interaction.

A stone cylinder by itself may not mean much, but one found along with a flat stone and grains of wheat may suggest purpose, such as grinding grain. Museum exhibits often present information, including photographs, on an object's discovery and related objects. Exhibits may include sketches that “fill in” missing parts or illustrate how an object likely was used. The ethnographic museum in Istanbul, Turkey, shows nomads in a tent, demonstrating daily use of everyday objects such as rugs. Similarly, Istanbul's Topkapi Saray museum, housed in the sultan's palace, uses costumed mannequins to show how women in the harem lived.

To use objects for research, start by asking how and where they were found. Where are they now? How are they presented? This information can be rich and layered. For example, the inlaid metal tray you use as a coffee table may have been purchased by your grandmother from a craftsman who made it in Damascus, Syria, 60 years ago. A gold coin with an image of the Byzantine emperor Justinian I may have been found in a 6th-century Chinese tomb. Each object has a story. Your grandmother's tray may tell about her enthusiasm for travel or her taste, but little about the history of Damascus. The Byzantine coin found in China may provide vital evidence about trade or other contact between East and West and may provide new insights into Chinese burial rituals.

Many objects used to understand the past were uncovered by archaeologists. Only in the late 19th century, however, did archaeologists begin to record exact object locations--not a town or a site but the exact place within the site and in reference to other objects. The relative positions of objects often allow for the most meaningful interpretation. Archaeologists try to understand what objects are grouped together and what appears in the same chronological layer. An undatable object may be dated by its proximity to other objects whose dates are known. The layers in an archaeological site begin with the earliest at the bottom and the most recent near the surface. Yet when archaeologists remove objects, they destroy the sites, leaving only their record and the objects.

How can you begin to answer such questions about an object? Start by gathering as much information as possible. Are there identifying marks on the object--a date, a location, the creator's name, inscribed words? If there are such marks, can you tell what language they are written in? If all you have to work with is a picture, when was that picture created and by whom? You may end up with more questions than

answers, but this important first step may lead you to the answers you seek.


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Questions to Ask

What is its date?

All objects were created on a particular date, but the date of origin may not be the most important date in an object's biography. For example, I live in Seattle and use my grandmother's china that was made in Boston about 80 years ago. It came from my mother's house in New Hampshire. There are multiple dates of significance in the life of this china. Determining such dates allows us to consider change in human society over time. Some objects have dates written on them, revealing when they were made. Other objects may have names of identifiable historical figures, such as a ruler under whom a coin was minted, which allow fairly precise dating. Or perhaps a later owner added an inscription. Some objects were inventoried by owners on dated records that indicate when and how the object was acquired.

Unfortunately, many objects come without such information. These objects are more challenging, but still may be dated by surroundings or historical events. A layer of ashes in a town site may correspond with a volcanic eruption or to the town's destruction by an invader. The city of Pompeii (near Naples, Italy), in a rare example, was buried by an eruption of Mt. Vesuvius in 79 CE. Life in Pompeii stopped, and objects found under those layers of ash were there prior to 79 CE.

More commonly, archaeologists must use other techniques for dating, some of them involving sophisticated modern technology. Where significant amounts of wood have been preserved, a dating scale based on the widths between tree rings allows us to date newly discovered pieces of wood. Much less precise, with a margin of error of several centuries, is dating by measuring the decay of radioactive carbon 14 found in organic material.

Fortunately, you do not have to cut down trees or invest in high tech dating devices. Unless the object you are studying is one you yourself have found, there is likely already a history of the object that you can work from. An archaeologist or historian has probably already dated the object with some degree of certainty for you. Thus, your task is often to situate your object within a society at a particular moment and to use it, along with other objects from that society, as a way of understanding change and development over time. Start by looking at available records and try to map out various owners in different times, thinking of the possible significance for each owner.

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Questions to Ask

What was the object's function? Was it unique?

Objects may have multiple functions—some more obvious than others. The primary function of an object is that for which it was originally made and used. Additional uses, however, may have been invented. A chair made for sitting could be used to reach a high object. A chair could also have a symbolic value, such as a throne. In the chair's use as furniture, its design could have social significance in the interior decoration of a house.

When meeting a new object, we often try to establish its function based on our own experiences and often such analogies are accurate. These experiences may be misleading, though, especially when the object comes from a culture far removed in place and time from our own or was found in an environment far removed from its place of origin. The function of a coin may seem obvious--it is used in financial transactions. Coins, however, also have symbolic value connected with national identity. Coins have images of presidents or rulers, national monuments, and inscriptions such as “In God We Trust.” Historically, some coins were more important as symbols than for their monetary value, especially if the latter was so high that few circulated or were used for commerce. Cultures that do not use coins in trade may value them as symbols of social status--for example, as jewelry. Sometimes clues about such usage are found in the coins themselves, for example a hole at the top of a coin worn as a necklace.

Close observation of an object and its context can help establish function. Studying wear patterns, for example, may show if a knife was used or decorative, how it was held, and whether the user was left-handed or right-handed. Observing the context in which the object is found is also important. A complex around a hearth with bones of domesticated animals and implements related to the functions of preparing and consuming food might help identify otherwise "anonymous" objects as being connected with the same function.

It is always possible that an object is not in its “natural” environment, so looking for patterns or multiple examples of the same object can help determine normal use. Such examples may reveal subtle differences over time and space for drawing conclusions about societal change and interaction. Occasionally an object whose function seems obvious appears in a place where it makes little sense, prompting a re-evaluation. One **sample analysis** discusses the importance of numbers when understanding Byzantine coins and trade.

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Questions to Ask

Who made, owned, or used the object?

Interpretation of who produced or used an object can be controversial. For example, in the absence of written sources, it is tempting to identify as direct ancestors humans who left nameless artifacts in the territory where we now live. Thus, many Russians have identified as their Slavic ancestors "peoples of the forest" whose ancient settlements generally contain objects that reveal nothing about the ethnicity or language of those who made or used them. Many Chinese wish to demonstrate that areas now part of China were inhabited by Chinese from early times. Thus they have had difficulty accepting evidence of ancient burials in Western China of people whose ethnic characteristics (hair color, facial features) seem to be European. Even written sources may use vague or unrecognizable ways of naming people and rarely reflect ethnic or linguistic categories used today.

In some instances, archaeology has confirmed oral tradition. In other cases, there is no correlation or even outright contradiction. One of the most controversial recent examples is “Kennewick man,” a skeleton several thousand years old found in the state of Washington. Native American tradition claims him as their ancestor, but the skull type suggests a different ethnic origin.

As with the process of dating an object, begin to answer questions about who made or used an object with the information provided by scholars or curators. Remember, though, that they may have asked different questions and your questions can elicit new insights. For example, if the object is an ornate, hand-woven carpet, scholars may establish a date, the name of the original owner, the name of the carpet maker, and the name of its style. But your questions may center on its role in a family's history. Did ownership of that beautiful carpet cause family inheritance squabbles? Did the sale of that carpet and other family heirlooms provide the capital needed to start a new business? Was it a wedding gift and if so, were such carpets traditional wedding gifts in that culture?

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Sample Analysis: Ice Man

The Ice Man

Consider the “ice man,” a 5,300-year-old mummy discovered in 1991 in the Tyrolean Alps on the border of today's Austria and Italy. The evidence is not just a body, but also a collection of material objects whose study illustrates the use of complex methods to understand the past. It is a history that can only be written from the material record because it pre-dates written sources.

In 1991, two hikers discovered the **remains of a man** who was beginning to melt out of the ice at the edge of an Alpine glacier. At first the significance of the find was not clear—the assumption was that the body was relatively “new.” Therefore, the excavation of the remains and what was around them was somewhat haphazard. Some of the objects with the man were badly damaged or destroyed; the body itself was damaged.

The sensational nature of the discovery became apparent quickly though, when radioactive carbon dating techniques determined the body was some 5,300 years old. Here, then, was one of the oldest, almost completely preserved, bodies ever found--not just a skeleton, but a body with hair, skin, and internal organs. Of short stature, 5' 2", the man lay on a rock slab in a position suggesting (probably misleadingly) that he had stopped to rest, set down objects he was carrying, and never woke up. Nearly ten years later, X-rays revealed an arrowhead lodged near his spine, probably indicating a fatal wound.

He carried and wore a variety of objects that can be viewed on the website of the **South Tyrol Museum** where the iceman and his possessions are displayed. His basic clothing was sewn together from animal skins and furs; his cape made from bundles of alpine grass. The cape was in fragments and badly damaged during excavation, so its significance of the bundled grass was not initially clear. The man was well equipped--he had a fire kit, pieces of fungus that may have had medicinal properties, and several tools.

Also striking is the only fully preserved prehistoric copper-headed axe. This axe offers a good example of the importance of examining an object in several ways. Because of its shape, scholars initially identified it as bronze and thus from a significantly later era. Subsequent chemical analysis demonstrated that the axe was copper and was created by casting, a relatively sophisticated technique of metalworking.

In another experiment, a sample from his intestines was studied. He ate unleavened wheat bread and meat shortly before his death. The intestines also revealed traces of pollen. Microscopic analysis indicated that the iceman climbed into the mountains shortly before his death from a valley on the Italian side of the Alps where the tree producing that pollen grows. Furthermore, the pollen helped establish the time of year he died because the tree appears for only a few months every spring. Analysis of grains and moss found clinging to his garments also helped to identify the specific area in which he lived.

Here then we have a case of material culture expanding all previous knowledge of daily life from Copper Age Europe some 5,000 years ago. Other Copper Age excavations have produced tools, bones, and evidence of habitation, but nothing this specific. The study of the iceman's remains has made possible a fairly convincing reconstruction of his actual appearance. Previous reconstructions were based on skeletal remains. We now know not only where he lived, but can say more about settled agriculture in the region. Organic material such as clothing does not survive from other Copper Age sites. Here we have the iceman's clothes (including his underwear!) made of animal skins that demonstrate how carefully the garments were stitched and even repaired. For the first time, we can see how alpine grasses were used as protection against the weather. His weapons and tools reveal techniques of woodcarving to shape a bow and simultaneous use of sharp-edged stone tools and sophisticated metal casting. Despite these answers, why he was murdered 5,300 years ago remains a mystery.


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Sample Analysis: Coins

Evidence from a Chinese tomb

The tomb of an important individual, Tian Hong (d. 575 CE), located in Ningxia in northwest China, contains five gold coins issued by the rulers of the East Roman (Byzantine) Empire from their capital at Constantinople (Istanbul in modern Turkey). The images and inscriptions on the coins date them—the earliest from Emperor Leo I (457-474) and the latest from the reign of Emperor Justinian I (537-542), when Byzantium reached its height of power and wealth. Identifying and dating these coins is relatively easy because the numismatic history of Byzantium is well known. Analyzing them historically is a more complex task.

One of these **gold coins** was issued by Justin I and Justinian I as co-emperors in the only year when they shared the throne, 527 CE. The front (obverse) shows the two emperors seated on a throne, each holding symbols of power--an orb for the world they rule and a scepter. Above them is a cross, and the Christian basis of their state is further emphasized by the image of a standing angel on the reverse holding a cross in one hand and an orb with a cross in the other. The inscriptions in Latin give the emperors' names and an invocation to victory. Words also indicate that the coin was minted in Constantinople. The coin is less than standard weight because it has been clipped around the edges (an illegal, yet lucrative, practice). Of particular interest are the four holes drilled in the coin at some point after production.

The second coin was issued by Emperor Justinian I. Its **obverse** shows a half figure of him holding a cross and the reverse has an angel similar to the one described above. This one has been clipped, but not pierced.

The interesting historical questions about these coins relate to how they reached China, why, and how they were used. Four of the five coins in the tomb have been pierced, suggesting decorative use, perhaps jewelry. One of the coins was found in the mouth of the skeleton, reflecting a common belief in Eurasia that payment ensured transport for a dead soul.

We can reconstruct possibilities as to how the coins might have come to China from Western Asia. We know from Byzantine sources that in the time of Emperor Justinian I, the Byzantines exchanged emissaries with the Turks who ruled Central Asia. Yet Byzantine coins in China are very rare. If western coins were used for exchange, they were probably Sassanian ones from Iran. These were found in large numbers, but only in the western part of what is today China.

These Byzantine coins provide one kind of evidence about China's contacts with the West. We learn from the coins that foreign objects may have been considered "exotic" and may have had decorative or religious functions. Additional proof of their decorative value can be seen in imitations made in Central Asia. Stamped out of thin sheets of gold, these copies did not have the weight or monetary value of a real coin. Yet some were found in 6th-century Chinese tombs, implying that even an imitation held value.

Byzantine Coins and Their Arab Imitations

The Byzantine gold *solidus* was the "dollar" of its day in western Eurasia. From its creation in the 4th century, the weight and purity remained constant, guaranteeing its value for commercial transactions. With the rise of Islam in the 7th century, new Arab rulers wished to distinguish themselves from the Byzantines, whom they had conquered. Coins provided one way of doing so. Evidence from Caliph Abd al-Malik (685-705), who ruled in Damascus, offers interesting insight into this issue.

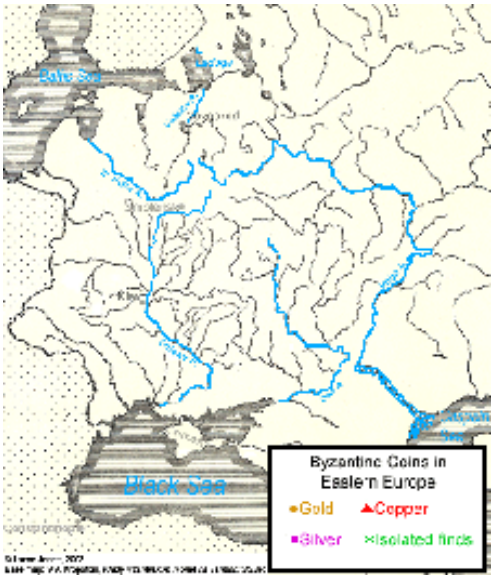
The **obverse** of one example from the rule of Abd al-Malik, shows a ruler dressed in traditional Arab headdress and robes, standing with a sword. The reverse has a stepped platform with a pole or pillar. The inscriptions, in Arabic, include the Muslim declaration of faith and the date in the Muslim calendar AH 76. A **second coin** of Abd al-Malik the following year is strikingly different. Images have been replaced by Arabic inscriptions and the weighs less than the Byzantine standard.

Human images on early Arab coins are remarkable because Islam prohibits human representations. In this period, however, the restrictions were still being formed and these coins imitate contemporary Byzantine ones with a picture of the ruler. The platform and pillar are also revealing. Byzantine coins have a platform with a cross; in these coins, the crossbar has been removed, changing a religious Christian symbol into a pillar.

This example shows how images on coins are important expressions of beliefs and symbols of power. Muslim caliphs wanted coinage with their own distinctive symbols, distinct from the former Byzantine rulers. Arabic inscriptions asserted Islamic faith, further distinguishing the new rule. The coins offer striking evidence of important issues involved in the formation of a distinct Arab Muslim identity.

Byzantine Coins and Trade in Eastern Europe

In the example from China, we considered the symbolic value of Byzantine coins. Yet we often think of coins as money with an economic function. Coins can also provide evidence about the role of money, trade routes, and change over time. However, the economic evidence of coins must be analyzed carefully. An isolated example of a coin may reflect chance. Datable coins found in large numbers in well-defined regions are a different matter and may document patterns of distribution. Coins minted in one location and found in another may reveal patterns of production and trade.



[Click picture for interactive map]

There is strong evidence about the distribution patterns of Byzantine coins in Eastern Europe from the 6th to the 13th centuries. For the 6th and 7th centuries, a few gold coins have been found in tombs of the nomads who roamed the steppes north of the Black Sea. Such coins seem to have served functions similar to those found in the Chinese tomb. Some are pierced and probably were used for ornaments. In the 8th and 9th centuries, coin discoveries extend a little farther north. However, beginning in the 10th century, gold Byzantine coins reached the middle Dnieper River, and by the 11th century, silver and copper coins, but not gold. Byzantine coins are found far north in the Baltic Sea region. The quantities are small compared with Arab and West European coins in this territory, but by the end of the 10th century, Arab coins begin to disappear. By the 12th century, Byzantine coins also decline.

What does this evidence tell us? Much has been written on connections between early Russia and the Byzantine Empire. Standard histories date the beginning of the trade route from the Varangians (Scandinavian Vikings) to the Greeks (the Byzantine Empire) through European Russia to the 9th century. This view, however, is based primarily on a chronicle written several centuries later and is unreliable for information on the 9th century. The Byzantine coin finds in Russia instead suggest that a trade route up the Dnieper River past Kiev and on to the Baltic Sea began closer to the end of the 10th century and then flourished for more than a century. Coins provide a good starting point for learning about that trade. A broader understanding comes from looking at a wide range of material, including objects that formed part of the trade.

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Annotated Bibliography

General

Fagan, Brian M. *Archaeology: A Brief Introduction.* 8th ed. Upper Saddle River, N. J.: Prentice-Hall, 2003.
A standard introductory text. Note the discussion of the Ice Man, pp. 266-268.

Fagan, Brian M. ed. *Eyewitness to Discovery: First-Person Accounts of More than Fifty of the World's Greatest Archaeological Discoveries*. Oxford: Oxford University Press, 1966.
A well-selected anthology illustrating vividly the excitement of archaeological discovery and the significant changes in its methods and interpretations.
Gosden, Chris and Marshal, Yvonne. "The Cultural Biography of Objects." *World Archaeology*, 31/2 1999: 169-178. Develops an excellent example of the writing of such a biography.

Graves-Brown, Paul et al. *Cultural Identity and Archaeology: The Construction of European Communities.* London and New York: Routledge, 1996.
Several essays provide quite accessible discussions of problems of how often politicized interpretations color the interpretation of material culture evidence.

Hodder, Ian. *The Archaeological Process: An Introduction.* Oxford: Blackwell, 1999.
A stimulating although not always easy text by one of the advocates of newer interpretive methods in archaeology. The author has done innovative work in Africa, using anthropological observations to help interpret the function of objects of material culture. Also he is currently one of the main figures in the excavation of an important Neolithic settlement at Çatalhöyük in central Turkey (see website information below).

Pearson, Michael Parker."Tombs and Territories: Material Culture and Multiple Interpretation." *Interpreting Archaeology: Finding Meaning in the Past*. Ed.s Ian Hodder et al. London and New York: Routledge, 1995. 204-209.
A very accessible reinterpretation of the famous 7th-century Sutton Hoo "Viking" ship burial in England. The origins of the objects found in the burial form an important part of the discussion, which, however, reminds us that we may never know enough to provide a single convincing interpretation of such evidence.

Preston, Beth."The Function of Things: A Philosophic Perspective on Material Culture." *Matter, Materiality and Modern Culture.* Ed. P. M. Graves-Brown. London and New York: Routledge, 2000. 22-49.
This is a very helpful guide to conceptualizing the issue of what an object's function may be. The other essays in this collection provide a range of rather too specific perspectives and examples regarding the study of material culture.

Richards, Colin."Knowing About the Past." *Interpreting Archaeology: Finding Meaning in the Past*. Ed.s Ian Hodder et al. London and New York: Routledge, 1995. 217-219.
A concise summary emphasizing the importance of interpretation taking place simultaneously with archaeological excavation.

General Archaeology Websites

Archaeologica. Valuable for current news items on archaeological finds and for

web links to other sites.

Archaeology Magazine. Includes web versions of recent articles, news items, and a very valuable set of links. Note especially the page for "Online Excavations," which has links to some interesting interactive sites.

Archaeology on the Net. Extensive set of links organized by cultures, periods, regions, etc.

ArchNet (WWW Virtual Library—Archaeology). A wide range of links, the ones to regions of the world accessible via an interactive map. Other categories include subjects and museums.

Dig: The Archaeology Magazine for Kids. Fun and games for the younger grades.

Ice Man

Cullen, Bob."Testimony from the Iceman." *Smithsonian* Feb. 2003: 42-50.
A nicely illustrated overview of his history, including information on the latest we know about how he died.

Dickson, James Holms. **"Plants and the Iceman: Otzi's Last Journey"**.
Analysis of plant remains (not including the contents of the ice man's intestines).

Fowler, Brenda. **"The Iceman's Last Meal,"** Nova Online.
This is part of the larger "Ice Mummies" Nova site, with much other material on the frozen Inca mummies found in Peru. The site has a helpful set of pages called "Reading the Remains," focusing on one South American burial and the kinds of questions one might try to answer.

Fowler, Brenda. *Iceman: Uncovering the Life and Times of a Prehistoric Man Found in an Alpine Glacier.* Chicago and London: University of Chicago Press, 2001.
A well informed popularization, which shows clearly the important role played by highly sophisticated scientific analysis and how interpretations may evolve substantially with the analysis of new data. A major part of this story is the distressing saga of mistakes made during the excavation of the body and how academic and international politics interfered with the study of the results.

Roberts, David. "The Ice Man: Lone Voyager from the Copper Age." *National Geographic* June 1993: 36-67.
Illustrated with the usual NG elegance, the article provides a good overview of the discovery and the initial analysis and places it all in the broader context of the European copper age.

The South Tyrol Museum of Archaeology (Bolzano, Italy).
Nicely illustrated web pages with pictures and drawings and brief descriptive text.

Byzantine Coins and Their Imitations

Alram, Michael. "Coins and the Silk Road." *Monks and Merchants: Silk Road Treasures from Northwest China. Gansu and Ningxia, 4th-7th Century* Ed.s Annette L. Juliano and Judith A. Lerner. New York: Abrams and the Asia Society, 2001. 270-289. A sampling of the material from this exhibit is also to be found on the **Asia Society's website.**

"Byzantine *solidus* and its Islamic Imitation" Byzantine, AD 610-13, from Carthage, Imitation: struck before AH 85 / AD 704, Department of Coins and Medals, The British Museum

"Gold *dinar* with a Standing Caliph" Umayyad dynasty, AH 76 / AD 695-6,

Probably from Syria, Department of Coins and Medals, The British Museum

"Gold Dinar of *caliph* Abd al-Malik" Umayyad dynasty, AH 77 / AD 696-7, Probably from Syria, Department of Coins and Medals, The British Museum

"Gold Imitation of a Byzantine Coin Found in China" From the Astana cemetery, near Turfan, north-west, China, 6th century AD. Department of Coins and Medals, The British Museum


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About the Author

Professor Daniel Waugh received his Ph.D. from Harvard and teaches in three departments at the University of Washington (Seattle): History, International Studies, and Slavic and East European Languages and Literature. Much of his research deals with Medieval and Early Modern Russia, although his teaching of late increasingly focuses on Central Asia. In both subject areas, the study of objects is of particular relevance. He is project director for **Silk Road Seattle** and has a strong interest in the creation of digital resources for learners of all ages. His course on the Silk Road, the cultural and economic exchange across Eurasia for some two millennia, is offered both in the classroom and, for the first time in Spring 2003, as an online course for the non-profit Silkroad Foundation.

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