

**Quality through the Ages:
Forty-five Examples**

**The Quality Research Team
The GoodWork Project
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**Lynn Barendsen, Wendy Fischman, Howard Gardner, Margot Locker,
Chris Waltrous**

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Preface

In 2006, Count Anton von Faber-Castell and his son Charlie had lunch with a colleague and me near our offices in Cambridge, Massachusetts. Because my parents grew up in Nuremberg Germany, I knew about the much admired writing implements produced in nearby Stein by the Faber-Castell company. For his part, Count von Faber Castell knew something of our Harvard Project Zero research on creativity, intelligence, and quality arts education.

Our discussions that day, and in the months that followed, covered a great deal of ground on many topics. We discovered many common interests and values. Both Faber-Castell and the Harvard group place a high value on tradition; Harvard goes back to the early 17th century and I've been at the University for over half a century. Faber-Castell dates from the middle of the 18th century; it has remained within the Faber-Castell family for eight generations, and Count von Faber-Castell has headed the company for over thirty years. Count von Faber-Castell and I are age mates, and we have lived through many of the same events—wonderful as well as horrific—on both sides of the Atlantic. We and our families share a love of the arts, of travel, of a healthy physical and social environment. For fifteen years my colleagues and I have studied “good work” and “good citizenship”. We were immediately struck by the efforts of Count von Faber-Castell and his colleagues to realize good work and good citizenship in their realms.

Within a year, with the support of the Faber-Castell company, we had crafted and launched a research project. The project was designed to uncover how individuals today, living in a fast changing, highly technological environment, make judgments of quality in the various spheres of their lives. Since our research group had already been studying various kinds of ‘goods’, it was an appropriate next step to explore which objects and experiences were considered valuable, of high quality, ‘good’. For its part, the Faber-Castell company wanted to know which items were valued today, why they were valued, whether the array of products and the kinds of educational experiences that had been developed in recent years were appropriate for today’s world—and particularly in the scores of countries where Faber-Castell products and educational programs are available.

Research often produced surprises—indeed, that’s the fun of doing research. This project was no exception. We had anticipated that individuals would most highly value ‘high end’ technology—computers, smart phones, perhaps expensive sports cars or limousines. It came as a surprise to us that, in our initial samples in the United States, a large number of people whom we surveyed or

to whom we spoke in depth came up with similar answers. In effect, they told us “Nowadays, our lives are so busy and hectic that what we most value, what we most want, is ‘time well spent’ . We are frustrated when we waste time—at work, at home, on the computer. And we are elated when we feel that what we are doing—with others or alone, with objects or in our own mind—features a good, productive use of time.

The United States is quite affluent and the persons whom we surveyed were likely to be comfortable as well. So naturally we wondered whether we would uncover a different pattern of results in other parts of the world. Here’s the answer so far: “time well spent” is at a premium throughout the developed world.

Another unexpected occurrence. One productive use of time is engagement in the arts. At a social gathering, my wife Ellen Winner, who studies the psychology of art, mentioned her interest in how involvement in the arts may affect the mood of children. This conversation sparked a small research project supported by Faber-Castell. We learned that drawing in general buoys the mood of children, and that drawing by hand, rather than by computer, has an especially positive effect on mood.

In addition to carrying out in-depth interviews and large scale surveys, we became interested in the way that quality has been conceived across the ages. Almost without intending to, we began to monitor and to collect discussions of quality, writings about quality, debates about quality. We became intrigued by the many sectors in which judgments of quality are routinely made, how they are made, by whom they are made, which assessments are transitory and which endure. And before we knew it, we had collected enough material that it could be assembled in the small publication that you are now reading.

Our compilation includes specific objects, like jewelry, timepieces, and writing implements, where assessments of quality are important and routine. In addition, our collection touches on many spheres that have been crucial over the centuries to our colleagues at Faber-Castell: international trade routes that facilitate the transport of raw materials, high-grade machinery, and exquisite products; educational experiences, including the use of writing implements for learning, artistic activity, and self expression; environmental consciousness, designed to protect and sustain trees and water supply; keen attention to the social environment, ranging from attractive buildings to comfortable working conditions; and dedication to social responsibility, in the homeland and in other countries around the globe. And so, in our journey across spheres of quality, we as social scientific researchers often encounter our colleagues at Faber-Castell who

are deeply engaged in the worlds of commerce and culture, and are ever attentive to the physical and social worlds.

One of our research subjects said “I’d rather have an enjoyable evening with friends, where the food is lousy, than an excellent meal that I have to eat by myself.’ Our fateful lunch in Cambridge, half a dozen years ago, may have taken place at the best restaurant in town; but what stands out for me is the quality of conversation that we had that today and that continues to this day.

Howard Gardner

Cambridge, Massachusetts

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Introduction

For as long as we have reflected about ourselves, human beings have speculated about what is special—truly special—about our species. We have called ourselves the wise species (*homo sapiens*), the tool making species (*homo faber*), and the species that plays (*homo ludens*). Without resorting to Latin characterizations, we have thought of ourselves as the “species that walks,” “the species that laughs” and “the species that cries.”

Of course, human beings stand out in these and numerous other ways. One way, perhaps less obvious, is that we are the species that seeks constantly to excel, to do better, to compete with one another, indeed to compete with ourselves. As Steve Jobs has explained, great products consist of “trying to expose yourself to the best things humans have done and then trying to bring those things into what you are doing”.¹ Whether in the sphere of thinking (*sapiens*), the making of objects (*faber*), athletic activities (*ludens*) or other of our numerous endeavors, humans—as individuals and as a species—seek to perform at an ever higher, ever better, ever more perfect level.

We propose here another way to characterize our species: a species that searches for quality, a species that creates quality, a species that attempts to surpass the current standards of quality—Human Beings as Seekers of Quality, or, in short, the Quality Species.

We observe this “Quality quality” in all spheres of human endeavor. Humans search for the rarest, most exquisite metals and strive to create the most beautiful items of jewelry and forms of decoration. Humans decorate themselves and those for whom they care in ways that bring out their most attractive features. Humans build impressive structures in which to live, to worship, to observe the wonders of nature or the creations of their fellow men and women. Humans host feasts, exchange gifts, don clothing, perform rituals, all in an effort to show what and whom they most value. Turning to accomplishments associated with “pure” mind, humans fashion stories, poems, dramatic works, designs, songs; and in a more scholarly vein, we develop ideas, concepts, frameworks, disciplines, theories—in fact, as just proposed, new ways to characterize ourselves. And we even attempt to achieve personal “highs”, states of flow, phenomenological experiences that exceed those of days or eras past.

To be sure, there are no human traits—not even spoken language, perhaps our most distinctive feature—without some kind of antecedents or intimations in other organisms. That is the primary lesson of evolutionary theory. For the sphere that we have just mentioned, we can find some intimation among other primates, or even among other branches of the animal kingdom—for example, birds that sing or decorate their nests, dolphins that have a complex system of communication. And of course, members of species can be said to compete with one another—as, for example, when several male fish perform a courtship dance in front of a receptive female.

¹<http://www.nytimes.com/2011/08/25/technology/without-its-master-of-design-apple-will-face-challenges.html>

Considering evolution as a whole, there are also striking signs of quality. By all accounts, the human (indeed the mammalian) eye is a magnificent accomplishment, capable of incredible perceptual feats. Yet there is nothing in the least teleological about the eye—it has attained its present seemingly miraculous state through countless tiny mutations over millions of years. Nor is the eye perfect in any absolute sense: rather, it is perfectly adapted to the ecological niches in which higher organisms dwell.

The same analysis applies with respect to the displays of quality in species other than our own. The male peacock may have a stunning display of feathers, but that display is built into its species plan. As far as we know, individual peacocks do not improve the quality of their displays, and they certainly do not pass on any improvements to their progeny—as it were, each peacock must begin its display at the same place as did its ancestors. There is no peacock culture, no peacock educational system, and scarcely any cultural transmission in any primate species save our own.

And so, we feel confident in asserting that the perennial search for quality—and for ever greater quality— is a mark, a property, a defining characteristic of our species. At the same time, where people search for quality, how they achieve it, and what stimulates them to go beyond, to surpass the current standard, is as varied as the faces, physiognomies, and cultures of our planet. This is the story that we tell in the pages that follow.

The variety of examples that illustrate our species' pursuit of quality is striking. There are so many ways in which human beings have stretched to express their highest potential and our forty-five examples are by no means exhaustive.

Our Quality Examples could be organized in several ways. We've elected to present them in roughly chronological order, dating back to pre-historical times and spanning all the way to our own era. Calendars provide a relatively objective means of ordering items.

But the objectivity of the calendar can be more apparent than real. After all, when parts of the world are not in touch with one another, it does not make much sense to state that they exist in the same moment, day, year, decade, or century. To be sure, in a global era, we can say that nearly all nations on the planet are situated in the 21st century. But it is far less convincing to say that the Egypt of the 25th century before Christ exists at the same time as Mexico or Korea of 2500 B C, or even that the latter polities existed during the time when the Pharaohs reigned over their kingdoms. Nor does it make much sense to scour the rest of the world when we are thinking about Athens in the Fifth Century before Christ, or Peru in the era of Macchu Picchu, or the European Enlightenment of the 18th century. We could more confidently state that each part of the globe, or each civilization, exists in its own time frame.

Since no single format of presentation is perfect, it's useful to mention other ways in which one could present our Quality Examples. As academics, we find it natural to think via the categories of social science: the existence of different societies (Chinese, pre Colombian), of different political systems (monarchy, democracy), of different economic systems (barter, market, controlled), and so on. Complementing an organization based on Time, one could organize the taxonomy in terms of Space: Such a survey would sweep across the land masses or

the oceans of the world, noting the conceptions and creations of quality in The Americas, Asia, Africa, or, to select a smaller grain size, Northern, Southern, Eastern, and Western Europe. Indeed one could categorize in terms of size—from tiny jewels to handheld telephones to railroads, skyscrapers, cities, indeed mega-cities.

Given our conception of quality as that which brings out the best in the human condition, we've elected to place human beings at the center of our presentation. Each of our examples may be seen as bringing out a distinct aspect of human capacities and potentials. And so, we have organized our examples in terms of nine human related spheres:

The Human Body (Olympics, Medicine, Food, Covering the bodies, fashions)



The Human Mind (Psychology, Meditation)



Human Technology (tools for making objects)

Objects of technology

Materials of technology

Human Art and Artifacts and objects of beauty

Human Technology (tools for making sense)



Human Knowledge

Science, Philosophy, other disciplines and belief systems

Symbol Systems (language)

Religion, Rites, Preservation



Human Living Space (Shelter, Homes, Cities, Ecology)



Human Transportation



Human Communication



Human Governance (political systems, human rights)



Human Temporal Spans (eras)



We believe that this rough-and-ready categorical scheme covers our examples quite well, even as it suggests where additional examples (or categories) might be added. The scheme also pinpoints the ways in which human beings have realized their potential in one time and place and how they have sought to exceed performances or achievements from one time to the next. In the Table of Contents, next to each of our entries, we have placed one or more icons to indicate the way (or ways) in which we think about that entry.

Table of Contents

- #1 **The Early Use of Tools: The Beginnings of Humankind and Craftsmanship** 
- #2 **Cave Paintings in Southwest Europe: The Earliest Form of Graphic Artistry**  
- #3 **Clay: Versatile Tool and Means of Expression**  
- #4 **Gift Giving: Leveraging Power, Status, and Reciprocity**  
- #5 **Early Forms of Money: Quantifying Value and Values via Exchange**  
- #6 **Tracking Time: A Concept Synchronizing Places and Events**   
- #7 **The Invention of Writing: Enabling the Sharing of Ideas Across Time and Space**  
- #8 **Ancient Architecture: Representing Civilizations through Magnificent Buildings and Monuments**     
- #9 **Mummification: Preserving the Past**   
- #10 **The Codification of Law and Ethics: The Hammurabi Code**  
- #11 **Capturing Time: The Record Keeping of Events in Mayan Civilization**    
- #12 **Making Medicine: Healing the Human Body**  
- #13 **Excellence in the Physical Sphere: Emergence of the Olympic Games** 
- #14 **Travels on the Silk Road: The Diffusion of Cultural, Religious, and Material Knowledge**   
- #15 **Jesus Christ: The “Good” and the “Moral” Human Being** 
- #16 **Meditation: A Powerful Avenue to Spiritual, Emotional, and Medical Well Being**  
- #17 **The Islamic Golden Age: Expanding Patient Care and Launching Medical Science**  
- #18 **The Incan Empire: Setting the Standard for Engineering and Community in South America**    
- #19 **Age of Discovery: Exploring and Connecting Worlds**    
- #20 **Gutenberg and the Printing Press: The Democratization of the Written Word**  
- #21 **The Renaissance: Re-Discovering and Building on the Creations of an Earlier Era**   

- #22 Leisure Time: Its Evolution over the Centuries   
- #23 Shakespeare: The Heights of Theater Artistry   
- #24 Formalized Education: A Shift from Transmitting Information to Creating Knowledge   
- #25 Peace of Westphalia: Resolving Intergroup Conflict, Bridging Economies, and Respecting State Sovereignty 
- #26 Mass Production of Writing and Painting Implements  
- #27 Classical Music: The Height of Sound 
- #28 Cities: Expanding Possibilities and Encouraging Human Growth  
- #29 Art through Movement: Dance as Expression  
- #30 Rail Transportation: Enabling People and Goods to Travel Widely, Easily and Efficiently  
- #31 Airplanes: Realizing a Human Dream  
- #32 The Motor Car: Personalized Transportation at High Speed  
- #33 Emergence of Photography: Capturing Beauty and Creating Memories  
- #34 Modern Architecture: Form and Function  
- #35 Psychoanalysis: Opening up Treatment of the Human Psyche 
- #36 Non Violent Resistance: Mahatma Gandhi and the Creation of a Civil Disobedience Movement   
- #37 Human Rights: The Quality of Every Human Life   
- #38 Birth Control: Re-Defining Sex, Love, and Choice for Women  
- #39 Clothing and Fashion: From Necessity to Personal Statement  
- #40 Environmentalism: How We Impact the World, and How the World Impacts our Lives  
- #41 Mobile Phone: Enabling Freedom and Connection  

#42 The World Wide Web: Information at our Fingertips



#43 Food and Food Movements: What, When, and How We Eat



#44 Time Well Spent: The Value of Meaningful Experiences with Others



#45 Time Well Spent: Challenging and “Flow” Experiences



Conclusion

References

Acknowledgements

#1 The Early Use of Tools: The Beginnings of Humankind and Craftsmanship

When compared to earlier hominids, human beings stand out in terms of their use of tools. The use of stones to scrape and cut meat marked the beginnings of a distinctly human form of intelligence—using materials in one’s surroundings to solve problems or achieve desired ends. This process of continuous innovation remains a hallmark of humanity; we develop and improve tools to enhance our quality of life.

The first documented stone tools were created in Africa 2.5 million years ago. These primitive tools provide evidence that individuals could differentiate among stones that were suited for cutting meat, digging, or striking prey. Over the ensuing millennia, tools were adapted and refined for many uses: as weapons, as a means of extracting substances, and as decoration. During the Paleolithic Era, spanning from about 2 million years ago to 12,000 years ago new tools developed, made from new materials and becoming more specialized in their uses. The hand-axes common during the Lower Paleolithic period were made using stone hammers: while lacking a structured form they were larger and more powerful than their predecessors. The tools of the Middle Paleolithic Era were distinctive in their sharper point and side scrapers, making the tools more diverse in their capabilities, and marking the beginning of bone as a material for crafting tools. The Upper Paleolithic Era, ending around 10,000 BCE, was unique in its replacement of hand axes with more specialized tools, like the needle and thread, made using harpoons and new materials (bone, antler, ivory). Each innovation had an impact on daily life, changing the way people ate, dressed, and lived.

Six thousand years ago, bronze replaced stones as the primary material for tool-making. Bronze was easier to craft into precise weapons, such as swords, daggers, axes, and spears. The malleability of these new materials allowed for the creation of smaller instruments, including styluses, sewing needles, eating utensils and currency. As the need for such tools emerged, so did new ways of creating and efficiently producing them. These early tools are at the core of much of what we now take for granted in our systems of communication and exchange.

Humans are distinguished by the varied use of our resources. Today’s resources entail new materials, both organic and synthetic; they open up once unimaginable vistas, ranging from gigantic rocket ships to tiny surgical instruments. Yet their goal is reminiscent of the inspiration behind the earliest tools: improving our quality of life.

#2 Cave Paintings in Southwest Europe: The Earliest Form of Graphic Artistry

The outburst of cultural symbolism during the Paleolithic Era is best conveyed by the expansive cave paintings found in Southwest France. These paintings provide an important lens into human experiences 20,000-30,000 years ago. Perhaps created as a way to preserve a memory of specific or recurrent events, these paintings may have been a prayer of thanks or a request for good fortune to the gods. The cave paintings of Southwest Europe reveal the artistic brilliance possible in a stone age, and demonstrate the perennial desire of our species to express ideas and feelings.

The Lascaux Caves in France, around 20,000 years old, hold nearly 2,000 images within their many halls. A more recent discovery, the cave paintings in Grotte Chauvet, may date back 30,000 years or more. The prevalence of animal figures, especially bulls and horses, indicate their importance. Serving as food, transport, and religious totems, these creatures were highly valued. Beautiful animal figures were the focus of many paintings, shown above in motion, perhaps fleeing from the oncoming hunter. There are occasional abstract images, thought by scholars to be symbols of nature and of human figures.

Along with etching directly into the cave walls, images of animals were created using mineral pigments. The Altamira Caves feature a detailed ceiling with bold color, dimension, and texture organized into a powerful composition. To create this artwork, pigments were made from a collection of binders including water, vegetable juices, and animal fat combined with iron oxides found from their surroundings. The enduring quality and durability of the pigments is impressive. Some scholars have pointed out that the natural formations of the walls and ceilings constitute a vital element in the artwork; with dim, scattered lighting, the paintings take on a sense of movement.

These cave paintings, still considered beautiful today, provide strong evidence of high craftsmanship and artistry, achieved and valued.

#3 Clay: Versatile Tool and Means of Expression

Many materials—some ancient, some artificial—help us in our daily lives. Over time, clay has stood out as an ordinary material that is unusually versatile: it is used in artworks, building, storing and preserving, recording information, and certain forms of healing. Interestingly, clay offers another example of the first two entries in this collection: over the centuries it has been used to create both tools and works of art.

Although the formation of clay varies depending on where it is derived, the main compound in all clays is Alumina—an aluminum-based compound, which can be easily manipulated into different forms and solidified when dried by the sun or heated with fire. The malleability of wet clay makes it an ideal compound with which to build. Of importance in today's society, the production and disposal of materials made from clay is not detrimental to the environment; biodegradable, it does not require the use of harsh chemicals.

Because it is an abundant resource, clay has over the centuries been an ideal material for the construction of buildings that last. For example, terra cotta bricks made from clay date back to Sumerian civilization in 3000 BCE. Clay has also been used for millennia to create containers for water and food. Clay jugs are easy to make in a kiln and can be formed to fit varied needs, whether a small jug for drinking or a large water jug for storage. Today, different forms of clay are more commonly used to make porcelain plates, vases, or certain medicinal treatments for the skin, such as face masks. Much of clay use is pedestrian and unremarkable; but over the centuries craftsmen have created clay works that stand out because of their exquisite shape and the intricacy of their decoration—whether abstract or figurative.

Abundant and safe, the versatility and adaptability of clay make it an ideal resource. It is an ordinary material used to accomplish extraordinary things.

#4 Gift Giving: Leveraging Power, Status, and Reciprocity

The concept of gift exchange predates modern civilization. Always indicative of profound meaning in forging relationships, conveying status, and capturing powerful experience, the giving of gifts is meant to enhance connectivity between the giver and the recipient. Gifts are appropriate and successful to the extent that these goals are achieved – if ill conceived or improperly conveyed, they can constitute a source of embarrassment or even conflict.

Historically, gift giving served one of two purposes: to confirm pre-existing relationships or to forge new ones. In early civilizations, gift giving served to reaffirm religious commitments or other relationships to a higher being. The ancient Mayans made human sacrifices—the gift of a human life—as a means of showing respect to various gods. Ancient Greeks and Romans gave money, food, wine and animals as a way of conveying respect, both to the gods on Mt. Olympus and to rulers on earthly thrones. During the Viking period in Scandinavia, gifts signaled power and competition; lords amassed land and possessions which they could then exchange to create friendships and form alliances.

Some gifts are perennial, like tokens to celebrate a new birth, and others are given to mark special occasions, such as the purchase of a new home. In modern times, gift giving has taken on new contours, some quite remarkable. For instance, scientific innovations have made it possible to donate blood, bone marrow or even entire organs to those in need. This new form of gift giving often takes place without a personal relationship between the giver and the recipient. Such a gift does not presuppose reciprocity—it is, so to speak, a ‘pure’ gift.

In modern times, when so many objects of all prices and quality can be purchased, other considerations arise. A gift may be judged in terms of the amount of money spent and the label or brand that it boasts. Other relevant details include whether the gift is “homemade” or purchased, given in person or bought and delivered through the Internet; if it is personally appropriate. Because time is considered one of our most precious commodities, the special effort put into a thoughtful creation or selection of a particularly apt gift enhances its value.

#5 Early Forms of Money: Quantifying Value and Values via Exchange

Around 1200 BCE money was introduced as a way of systematizing trade. This invention signaled a dramatic change in human affairs: rather than simply trading objects or sometimes, slaves, value was instilled in coins and later, in paper money. Money eventually became the preferred means for acquiring food, shelter, or valued possessions. At first, the money was made of material that was itself valuable, but gradually any material could be used as long as all parties agreed on its worth. Over time, the use of money as a means of exchange became the norm around the globe and today, provides a convenient—though by no means infallible—means of evaluating objects, services and experiences.

For much of history, gold was the standard unit of exchange. Other metals have been used for various reasons, but because of its relatively soft properties, gold is easy to mold into a coin and imprint with a seal. Originating in western Asia Minor around 600 BCE, the practice of using gold as a currency spread to the rest of the world. Paper money, first appearing in China around 800 CE, gained popularity due to its mobility and availability. With the spread of coins and banknotes that symbolize a certain value in a specific regional economy, it became possible to tax citizens, pass on wealth to succeeding generations, and lend or borrow money, with or without interest.

Today, money is used as a primary method of standardizing exchanges of goods and services. International trade is organized around money, and currencies of the countries of the world are understood in relation to one another. Individuals are able to purchase stock in an Indian-based company while remaining in Germany, or leave Japan with yen, and with a simple exchange, purchase food in France using Euros. Trillions of dollars circulate around the globe each day. Decisions about how money is created and handled have enormous and rapid consequences worldwide—as evidenced, for example, by the economic crises during the first decade of the 21st century.

The monetary value assigned to an object is one way of signaling the quality of an item. Additionally, the value for many objects we purchase today is determined in part by the process used to create them. For example, diamonds—despite their lack of practical function in daily life—have a high monetary value because of the laborious process entailed in finding, cutting, and distributing them. In this regard, the monetary value of a diamond signals its cut, clarity, carat, and color. More generally, the monetary value of an object can indicate many things, including: whether an item is real or fake, whether supply meets, falls short, or exceeds demand, or how much time and effort went into making or procuring the object. Both literally and figuratively, money does indeed ‘make the world go around.’

#6 Tracking Time: A Concept Synchronizing Places and Events

Today, “time” is crucial in every facet of life. Families gather at “mealtime,” the professional computes “billable hours,” millions of people around the globe strive for a balanced life—time allotted between work, on the one hand, and leisure activities, on the other. As a construct, “time” denotes how far apart events lie from one another; as a finite resource, it is highly valued.

Despite its importance today, the concept of time and its systemization in the human experience have not always been a part of our existence. Advancements in the tracking of time have contributed to the way we humans understand and plan for events; its organization is key with respect to many facets of life, such as work, school, medical services, or transportation.

The earliest known attempts to monitor time date back to 5000 BCE. A primitive sundial (depicted above) was a vertical stick or pillar that was used to give a rough and ready indication of the time of day. By 3500 BCE, the Sumerians were using a sundial that was split into 12 increments with each increment representing two hours, thus establishing the twenty-four hour day. The sundial also provided information about the changing seasons, with the angles of the sun changing in accordance with each season. Accordingly, farmers were able to pinpoint the moment in the season to plant crops so they could yield a high return.

Our present conceptions of time grow most directly out of the invention of the mechanical clock. The earliest form of the mechanical clock first appeared in China around 900 C.E. Powered by water, this model allowed time to be kept more accurately, helping people structure their daily activities. In thirteenth century Europe, the first mechanical tower clocks (also depicted above) were used to signal the timing of public events. Thereafter, an increasing proportion of key life events and religious observances were organized around hours and days; for example, business and prayer occurred at predictable times. The mechanical clock called attention to the importance of time—minutes, hours, days—and transformed the ways people understood the rhythm of their lives.

In the late nineteenth century, people’s use of time as an organizing principle became synchronized on a global scale. The emergence of rapid mass transportation and an increasingly global marketplace required both greater efficiency and a uniformity of measurement across geography and sector. To facilitate this process, Sir Sanford Fleming proposed that the world be divided into 24 zones of time based on the revolution of the earth; Greenwich, England would serve as the center meridian. Once acted upon, time around the world went from being derived via local considerations to a standard definition based on the position of the sun in a given location. Pondering the riddle of how to ensure the same time at disparate train stations, Albert Einstein began to conceptualize the theory of special relativity.

Today, keeping track of time is essential for maximizing control of our lives. Some pursuits in science, manufacture, transportation, and athletic competition require exquisite timing, in seconds or even nanoseconds. The concept of “wasted time”—whether through one’s own doing or by external forces not under one’s control—can be a tremendous source of frustration. Speed also alters the nature of the workplace. In the 24/7 news cycle, the pursuit of

quality journalism is challenging, and there is a tremendous premium on getting information fast as well as getting it right. At the same time, technological and social advances that allow individuals to save time or to use their time wisely are treasured. In fact, in a recent study carried out by the authors of this collection, participants rated “time well spent” as the most important facet of life over which they have control.

#7 The Invention of Writing: Enabling the Sharing of Ideas Across Time and Space

The development of writing in the ancient world catalyzed radical changes in government, trade, education, preservation of past experiences, and the composition of the social hierarchy. The earliest writing dates back to 3,000 BC. At that time, writing systems that were developed in Egypt and Mesopotamia used pictograms to represent objects, concepts, and small numbers. Starting around 2500 BCE, Sumerian, Babylonian, Hittite and Assyrian cultures in developed at a faster rate. As a cause or consequence of this economic upsurge, scribes began using ideograms, more abstract than pictograms: a word or parts of words to efficiently record transactions. Ideograms were seen in the Sumerian cuneiform, which included wedge-shaped symbols, and were also included in Egyptian Hieroglyphics.

Once the power of a uniform writing system came to be realized, its uses expanded. Writing became an organizational aid, enabling Sumerians and Ancient Egyptians to maintain detailed records of wages given to workers and rations given to civilians. Further, writing allowed for a formal, fixed record of the laws and codes; at least in principle, these records allowed people to be aware of their rights and duties.

Around 1300 BCE, inhabitants of the Grecian islands set the foundation for the alphabet. Their sound-based, linear system linked a mark to a sound and allowed flexibility and efficiency in writing comprehension. Whereas writing initially emerged out of the need to document trade exchanges, it soon expanded into a way to spread ideas, preserve history, and—through the creation and promulgation of laws—to maintain order, power and civility in societies.

Once writing systems had been stabilized, the achievement of functional literacy became a cherished end: those who had the ability to read and write had power and could use it for ill or for good. To the ruling class, writing was as an invaluable tool for glorifying its success in waging war, creating prosperity, and achieving great deeds. And because literacy was generally restricted to the powerful and the affluent, writing tended to preserve a hierarchical social organization. In China, the establishment of a written examination system gave able and industrious individuals the opportunity to become literate and to rise in the society—so long as they succeeded in preserving relationships with those in power.

The emergence of writing made it possible to preserve powerful sagas, whether historical or invented. For example, The Epic of Gilgamesh, which had been passed down orally for years, took on heightened importance when it was recorded on clay tablets. Gilgamesh lives on today, as do the Homeric tales, thanks to the emergence of the Greek writing system. Beyond storytelling, writing allows for other ideas to be transferred from one time period to another and subsequently, to be embellished or enhanced. For example, the recording of Iranian scholar Avicenna's extensive medical text *The Cannon of Medicine* in the 11th Century was expanded upon by Europeans in the 18th and 19th centuries and became the foundation for their medical practices.

Writing has changed the way people live. In the past, civilizations writing helped to maintain order and protect citizens using codified laws, records of finances, and transparency in government. Those who were literate could read for enjoyment or master new knowledge or

enter into correspondence with other persons, both known or previously unknown to them. Writing was essential for the development of academic disciplines—from science to history—and became a central component of all formal educational systems. Today, the development of computers, emails, text messaging, and social media have changed the way people write and communicate with one another, allowing for quick, easy, and virtually universal sharing of information.

#8 Ancient Architecture: Representing Civilizations through Magnificent Buildings and Monuments

Architecture proclaims what is most valued in a civilization. In ancient times, temples, statues, and government buildings paid homage to the gods and royalty. Rulers commissioned the construction of monuments as a way of keeping their legacies vivid even after death. Although scarce building materials made the process labor intensive and time consuming, inhabitants viewed buildings and temples as a measure of their civilization's strength, thus justifying the effort and cost. Large, ornate structures signaled a culture's greatness. The survival of these structures from the ancient world testifies to the extraordinary quality of their work.

Ancient Greek life was dominated by religion and spirituality. During the height of Athenian civilization, the temples and monuments to the gods were the largest and most elaborate buildings. Because of the importance of the newly forged democratic process, government buildings also received significant attention from the city's architects. Completed in 432 BC, the Parthenon was conceived as a temple honoring the goddess Athena; at the same time, it was intended to symbolize the centrality of democratic processes. The building features the classical elements of Greek architecture, including columns, a marble exterior, and an intricate frieze. The Parthenon is at once a beautiful work of architecture and a national symbol of a civilization's strength.

Other ancient civilizations provide examples. The Great Pyramids at Giza, an architectural feat, portray key characteristics of Ancient Egyptian life. Built to serve as tombs, the pyramids signified the glory of the pharaohs and the grandeur of the empire. Roman architecture also reflects a legacy, in this case, of the Roman Empire. The Romans forged gigantic amphitheatres for fighting and other public displays: the most famous is the Colosseum in Rome. Similar to the Egyptians and Greeks, the Romans also honored their gods with temples and monuments, for example, the Pantheon.

Architecture of the ancient world focused on form over function. As signs of civilizations' power and might, their public buildings were constructed to be large, ornate, and durable. More recent civilizations have frequently patterned their buildings on these classical models, proof of the influence and endurance of these models.

#9 Mummification: Preserving the Past

The process of mummification, devised by the ancient Egyptians, represents the most elaborate attempt known to preserve people and objects. In 3200 BC, an elementary form of mummification emerged: through the burial of lay people in the hot and dry sands on the edge of the desert, the decaying process was halted. In 2600 BC, during the time in which pharaohs, or “god kings,” ruled, a more advanced form of mummification started in the Old Kingdom.

This more sophisticated form of mummification was used to commemorate the dead and equip them with tools for the afterlife. The mummification process was an intensive, seventy-day preparation overseen by temple priests. The pharaohs and their extended family were placed in temples to celebrate their leadership and to host their remains in suitable style. The mummification process was not exclusive to pharaohs or their families. In fact, cats and ibises—two creatures that were held sacred in the Old Kingdom—were subject to the mummification process as well. The collecting and storing of people and objects gives us important insight into ancient Egyptian beliefs about the dead and the afterlife—which mortals shall be remembered and how important they were.

The extravagance of the burial process, and the grandiosity of the temples in which the society’s most sacred were buried, speak to a basic human desire for immortality. The collection of objects indicates as much about the priorities and values of the collectors as it does about the experiences and possessions they seek to document. From sacred texts to treasured pets to precious jewelry, the desire to transfer the meaning of these artifacts to the next generation has been a hallmark of human societies.

Throughout history, individuals have tried to preserve themselves, their loved ones and their thoughts and aspirations in a variety of material, spiritual, and artistic forms. Time capsules are efforts to tell future generations or aliens from another planet what we most value at a given time. The possibility of cloning human beings raises philosophical issues about identity as well as questions about immortality.

#10 The Codification of Law and Ethics: The Hammurabi Code

The Hammurabi Code is the first known effort to record acceptable or legal practices in a society. The code prescribed consequences for those who violated these codified laws, as well as a fair procedure for determining culpability. Accordingly it has long served as a model for an organized judicial system.

The Hammurabi code of 282 laws established a common set of standards for individual responsibility to which citizens of ancient Babylon were expected to adhere. Inscribed upon a stone tablet around 786 BCE, this roster is the earliest known written set of laws. For the most part, the laws dealt with taxation, property exchange, theft, disputes, and acts of violence. The code also set common proceedings and consequences for grievances.

Although the punishments—such as the death penalty for making certain accusations, or the removal of an ear for simple assault—are brutal by today’s standards, the Hammurabi Code nonetheless provided structure and a measure of safeguards for the accused. Legal proceedings were arbitrated by a third, presumably unbiased party. The emphases on individual responsibility to others, along with a fair decision-making process, were among the first known efforts to introduce an ethical framework into the everyday lives of citizens—as we might now put it, a government of laws, rather than of men and women.

The laws in the Hammurabi Code were designed to procure just treatment for all members of society; it provided protection for not only the wealthy, but also for the poor and for slaves. Crucial to how we as human beings understand our most basic legal rights, these codes reflect the beginnings of our current understandings of justice.

#11 Capturing Time: The Record Keeping of Events in Mayan Civilization

The invention of devices designed explicitly to record and measure time transformed how we conceptualize and appreciate the passing of events. As a tool, the calendar creates a temporal structure for when and how long people and events exist, a structure fundamental to our understanding of our experiences and our place in the larger historical context. Indeed, in the absence of some kind of calendar, it might be difficult to conceptualize ‘time’ altogether.

Historically, even before the movement of celestial bodies was understood, calendars were constructed from the revolution of the moon around the earth or the earth around the sun. Because the structure of calendars was based on solar and lunar revolutions, time became a reliable construct: the amount of sunlight per day, or the climate within a certain region, could be predicted and used as a framework for anticipating and documenting events. In the broader sphere, the capacity to mark time provides insight into how long individuals, groups, and civilizations have existed and provides markers for the occurrence of major wars, disasters, triumphs, discoveries or inventions.

Around 1200 BCE, the ancient Mayan civilization introduced two versions of a calendar to record time—one 260-day version (capturing the “sacred” year) and another 365-day version (used to measure the “vague” year). The standard month in both Mayan calendars is the equivalent of 20 solar days. The “sacred” year calendar was used to observe religious events and to name children, while the “vague” year calendar was used to assist in planting crops. The use of calendars to strategize the best time to plant enabled the Mayans to harvest crops and ration food efficiently.

The modern, 12-month, 365.25-day version of the calendar, used in many parts of the world today, was introduced by Pope Gregory XIII in 1582. This calendar allows the planning and coordination of events worldwide, accurate to the second. But other variations remain in use today: for example, the Chinese Lunisolar Calendar, in which the New Year is celebrated at the end of the winter season (as opposed to the beginning) or the Hebrew lunar calendar, which dates back to 3760 BCE, the supposed beginning of Biblical time. While each of these calendars maps the same temporal space, and each can be mapped onto one another, they embody different religious or cultural values.

In today’s world, where time is an increasingly precious commodity, calendars have become a tool with which to organize and make sense of our lives. Nonetheless, the varied histories and cultures described above are still captured in current calendar systems.

#12 Making Medicine: Healing the Human Body

The use of medicine to heal various maladies permeates recorded history, encompassing healing priests in ancient Egypt, apothecaries during the Middle Ages, doctors and pharmacists today. The materials used as medicines have changed over time, beginning with local, natural forms like plants or herbs, to more synthetic, mass-produced materials, such as pills, lotions or syrups. Medicines were retained as long as they appeared to work, but typically the reason for their effectiveness was not understood; placebo effects may well have been at work in many cases.

Progress in science and technology has enriched the quality and quantity of medicines. In the early twentieth century, the invention of antibiotics—particularly Penicillin—had a profound impact on controlling the spread of infectious disease. Through technological innovation it is possible to create various organic or synthetic compounds and to evaluate their effectiveness—to determine which illnesses they can treat and to what degree. As a result, standardized procedures now exist for treating many formerly toxic or even fatal ailments.

Additionally, certain medical procedures have contributed to our quality of life and overall longevity. Over the years, pre-emptive procedures, such as vaccinations, have come to play increasingly significant roles in preventing debilitating or life-threatening illnesses. Today, the standard vaccination schedule prescribed by the World Health Organization helps to build and sustain immunity across the lifespan to a variety of diseases, such as measles, mumps, rubella, polio, and hepatitis B. Other procedural interventions—such as dialysis for renal failure and chemotherapy for cancer—have created additional treatment options for patients with these illnesses and, in many cases, extended their lifespans.

A wide variety of medications and medical procedures are available today, including many holistic and homeopathic treatments. The commercialization of “all natural” products may be indicative of a renewed value for naturally-occurring remedies, which may in some cases be safer to the individual and more environmentally friendly as well. Also, the use of alternative treatments, such as acupuncture or massage therapy, suggest a return to valuing the human body’s natural processes for self-regulation.

Access to and delivery of quality medicine and health care in general is contingent upon health care systems. Quality medicine relies on the availability of products, as well as the pills available in a local pharmacy. The quality of medical care is also determined by cultural understandings with regard to illnesses and healing practices within one’s community. Recently, heroic efforts have been initiated to provide medicines to the tropical poor in ways that are in accord with various cultural traditions.

#13 Excellence in the Physical Sphere: Emergence of the Olympic Games

By most accounts, the ancient Olympic games began in 776 B.C. at a sanctuary called Olympia after Mt. Olympus—the highest mountain in Greece and the home of the Greek gods and goddesses. Origins of the event are disputed. Some believe that the first Olympics began as a celebration of a chariot ride in which Pelops won the hand of his bride. Others assert that the games were created by the Greek hero Hercules, following a victory in battle, as a means of honoring his father Zeus. Some contend that the Olympics symbolize one of Zeus' own victories. Though these accounts differ, the common threads of competition, excellence, fairness, celebration, pride, and politics are woven through both the ancient and modern Olympic Games.

In ancient times, the Olympics were a festival involving all kinds of individuals who came together from different parts of the Greek world, accordingly representing different beliefs, traditions, and political views. Today the Olympics represent a positive form of nationalism—an opportunity for athletes to “put their home town on the map” and to express pride in their respective countries. Though athletes aspire to individual achievement, they behold victory for the homeland as supreme. In contrast to other national and international sporting leagues and competitions, money is not the ultimate reward. Instead, the desired prize is the recognition of excellence and superiority, important values that have spanned the globe across the generations.

Initially, the Olympics were created to transcend different worldviews. In ancient times the Olympics were viewed as a “truce,” which “was, in effect, an interim of civic and military neutrality in honor of Zeus, the supreme judge and arbiter and source of wisdom, a Pan-Hellenic gathering and renewal of cultural and blood ties among the Hellenic peoples from all parts of the civilized world, a peaceful interim”²

In modern times, however, the Olympics have frequently served as a “symbolic struggle” among controversial and conflicting political views—such as socialism, democracy, and Nazism in the 1930s. One of the biggest political statements was made during the 1980 Moscow games; in the interest of calling attention to human rights, the United States and other western countries boycotted the Olympics.

Since their inception, the Olympics have represented high ideals. Athletes competed as individuals (not as teams), thus embodying the Greek ideal of excellence, or *arête*. In ancient times, athletic training was a part of a student's education. As with athletes of our times, if skill was detected at an early age, a student pursued an Olympic path, which included rigorous formal training and scrupulous attention to nutrition. Many of the early Olympian athletes maintained jobs throughout the training; if they won, these individuals quickly became career athletes, receiving money, meals, and leadership positions in the community.

Over time, one of the most important attributes of the Olympic Games has been the pureness of competition, the standard of excellence throughout, and the intolerance of cheating. In ancient times, *Hellandikai*, the judges, were renowned for fairness and were specially trained

² [http://tenaya.cs.dartmouth.edu/olympic/anecdote/#truce>}](http://tenaya.cs.dartmouth.edu/olympic/anecdote/#truce>).

to judge the competitions. Unethical behavior entailed consequences, including expulsion from the games, fines, and even whipping. Lore suggests that money paid in fines was used to make bronze statues of Zeus, which were placed on the road to the stadium. Descriptions of the offenses were inscribed on these statues as a way to remind people of the importance of skill, honesty, and fair competition.

#14 Travels on the Silk Road: The Diffusion of Cultural, Religious, and Material Knowledge

The Silk Road—emanating from heightened demand for quality goods—is considered the most important trade route in history. A series of trails and routes that span land and sea, the Silk Road connects East Asia to the Mediterranean. Along this ancient route, a wide variety of goods and services from vastly different cultures were exchanged. Trade began along the Silk Road route as early as 200 BC and continued on a significant scale until the sixteenth century. Goods traveling into China included gold and other precious metals, ivory, precious stones, and glass. China's earliest exports included furs, ceramics, jade, bronze objects, lacquer and iron. Over the centuries, many important scientific and technological innovations also migrated to the West along the Silk Road, including gunpowder, the magnetic compass, ceramic and lacquer crafts, the printing press, mathematics and—of course—silk.

Indeed, of all the precious goods crossing from East to West, silk was considered the most remarkable. The Romans obtained samples of this new material, and it quickly became very popular for its beauty and soft texture. The Romans viewed the trade route to the East chiefly as a means of securing silk. The processes of making silk had been so carefully guarded that the Chinese 'keepers of the secret' reaped both financial rewards and prestige.

This unique geographical configuration yields insights about the meaning of "high quality." We typically describe a high quality object as durable, well made, or aesthetically pleasing. Additionally, the more unusual or exotic or difficult to attain, the more prized is the object. If this understanding of "quality" did not begin with the Silk Road, it certainly became more celebrated as a result of the route's enormous influence over the ages.

The story of the Silk Road embodies the spirit of adventure—people seeking new lands, exotic items, the highest quality of material, and the greatest profits. Because of the existence and lure of this route, many cultural practices and religious beliefs transcended their borders for the first time. As individuals and cultures learned more about one another, understandings about quality goods, services and experiences evolved. The cultivation of silk catalyzed the creation of a road that connected cultures, and the connection of these cultures, in turn, expanded people's notion of what is possible.

Today, the Silk Road Project (a visionary series of artistic and cultural connections between artists and audiences) takes its name from this route, which has come to stand for cross cultural influence and relationships. Indeed, founding director cellist Yo-Yo Ma has referred to the Silk Road as the "Internet of antiquity," and this ancient vast expanse of interconnectivity anticipated the process of globalization brought about by the World Wide Web. Contemporary understandings of quality can be enriched by the global conversations that began on the Silk Road.

#15 Jesus Christ: The “Good” and the “Moral” Human Being

Over the course of history, a select number of people have dramatically altered the way in which we live in the world and how we think about human agency: a short list would include Cleopatra, Alexander the Great, Julius Caesar, Confucius, Mohammad, Joan of Arc, Martin Luther, Catherine the Great, Napoleon and Mahatma Gandhi. Even in this company, no one stands out more than Jesus Christ—considered the son of God by over a billion persons. Jesus of Nazareth is said to have lived sometime between 4 BCE and 35 CE, under the rule of the Roman Empire. Rejecting the law of the land as the ultimate authority, Jesus obeyed a higher code of conduct.

Jesus Christ offers an example of what it means to be a good—indeed exemplary—member of society. The teachings of Jesus have shaped the way in which many individuals and many denominations behave, and expect others to act. The teachings of Christ inspire empathy for others and a transcendence of concerns that goes beyond one’s immediate circle. Christ’s sayings and sermons are integral in framing individual actions within the context of the enveloping society.

Jesus’ parable of the Good Samaritan catalyzes thinking beyond one’s own clan and acting on behalf of the larger human family. According to the story, Jesus is asked to define what it is to be someone’s neighbor. In response, he tells the story of a Samaritan who was despised at the time. Nonetheless, this apparently unworthy person came to the aid of an injured person while a priest and a Levite did not. This parable helped followers to think of responsibilities even to those with whom they had no personal bond.

The life of Jesus is understood by many as symbolic of a life lived in accordance to a stringent moral code. To Christians, his death represents the ultimate act of selflessness—for Christ is said to have died for the sins of man. The principles Christ followed left a mark on the world for the succeeding millennia; and the Church created in his name has been a crucial participant in much of Western history. The influence of Jesus Christ’s teachings may be seen in today’s philanthropic activities, ranging from a community clothing drive run through a local shelter, to the operation of schools and missions in many impoverished regions across the globe.

#16 Meditation: A Powerful Avenue to Spiritual, Emotional, and Medical Well Being

Meditation has been in existence since prehistoric times, adapted around the world as part of diverse cultural traditions. An apparently simple act, requiring neither money nor material tools, meditation can nonetheless be extremely powerful.

The word “meditate” stems from the Latin root “meditatum,” to ponder. Initially, individuals reportedly meditated to appease the Gods. Early evidence of meditation also exists in many religions, including Buddhism, Christianity, Hinduism, Judaism, and Taoism. Through meditation individuals bring their mind to a deeper place, beyond reflexive (or reactive) thinking, to a transcendent state. Though the daily practices vary, individuals most often identify meditation through vocalizing repetitive statements, silence and focus, and exercise (commonly known as “yoga”).

In recent times, scientists and ordinary citizens (especially young people in Europe and North America) began to study Buddhism and its focus on meditation. With the rapid speed of technology development and the expectation for a quicker pace of work, individuals feel pushed to work faster and longer hours. For many individuals, these trends may provide an incentive to find ways to take a mental break—to let the mind travel to a different sphere. A scholar of meditation suggests that the interest in meditation “is caused by the scarcity of the personal experience of...transcendental states—the living spirit at the common core of all religions.”³ Many individuals turn inwards to reflect, find inner balance, and bracket the demanding responsibilities of life.

In contemporary society, meditation has become a popular method to help people focus, relax, and release stress. Meditation practices are thought to help reduce pain, decrease depression and anxiety, increase creativity and enhance happiness. In the United States and Europe, meditation is used as a strategy to for individuals to “maintain sanity” in the classroom and workplace. Moreover, in addition to the spiritual and emotional benefits, medical practitioners also believe that meditation can aid the body by improving metabolism, lowering blood pressure, and modulating brain activity. A lead researcher in the field of the neurological benefits of meditation asserts, “the changes that are induced by meditation practice are not just in the mind and the brain but they also affect [the] bodily systems ... intimately connected ... to these neural systems.”⁴ Observers may debate the special powers of meditation, but many concur that time away from daily worries and tasks, combined a focus on the inner self, can elevate the human spirit.

³<http://www.shrinkrapradio.com/231.pdf>

⁴<http://www.fasebj.org/content/20/10/1581.full>

#17 The Islamic Golden Age: Expanding Patient Care and Launching Medical Science

The period dubbed the Islamic Golden Age—from the middle of the 8th century CE to the middle of the 13th century CE—both preserved valuable knowledge from the past and laid the groundwork for future discoveries. The Ottoman Empire, site of this Golden Age, was a melting pot of different religions, cultures, ethnicities and sources of knowledge; it is regarded as the civilization that preserved key texts and practices from the classical era, thereby ensuring that earlier wisdom would be accessible to future generations. Notably, the Islamic Golden Age is valuable for its contributions to the study and practice of modern medicine because it augmented the creation of a wellness-centered atmosphere in hospitals and practice-centered approach to medical ethics. The Islamic Golden age also set the precedent for treating patients only after attempting to understand their illness in a systematic way.

In civilizations past, the physically and mentally ill were confined to healing temples, sleep temples, hospices or leper houses as a means of containing the sick and separating them from the rest of society. In medieval Islam, the concept of the “Bimaristans” emerged: establishments to which the sick came to be treated and to have the chance to heal. Rather than ensuring isolation from society, the focus of the Bimaristans was on patient care and recovery. The Bimaristans were located in major cities rather than secluded locations and staffed by qualified physicians and aides. They focused on physician training and medical research that could be applied across different layers of society. As a result of the Crusades, the concept of the Bimaristans (today’s hospitals) spread throughout Europe.

The Islamic Golden Age is also known for advancements in treatment methods. Practitioners employed knowledge of human anatomy and bodily processes to treat different illnesses in appropriate ways. Members of the medical guild communicated with one another about their findings.

Iranian scholar Avicenna’s *The Canon of Medicine*, composed in the tenth century, is a five volume medical text. It was the first book of its style, detailing diseases, experimental medicine, and clinical trials that further assisted in the communicating of information. The Canon was used throughout Europe and the Middle East well into the eighteenth century and provided the foundation for much subsequent medical treatment and research. Avicenna’s detailed observation of medical trials that tested the effectiveness of treatments on varying cases was one of the earliest recorded instances of using evidence from trials, research, and patient cases to develop treatments. The formalization of evidence-based practice in our current era expanded on Avicenna and his predecessors’ work, taking the guessing out of medicine, ensuring higher quality patient care, treatment protocol, and information sharing.

Although the Hippocratic Oath predates the Islamic Age, physicians in the Ottoman Empire during the Middle Ages were seen as the “guardians of souls and bodies”;⁵ they built a culture of respect in the treatment of patients regardless of income, religion or social status.

⁵ <http://www.sandstead.com/essays/david.html>

#18 The Incan Empire: Setting the Standard for Engineering and Community in South America

Prior to the arrival of the Spanish, the Incan Empire was perhaps the largest empire in the Americas. At its peak, the Incas controlled 300,000 square miles and had a population of 10 to 12 million people. Emerging in the early 1400s, the Incas expanded rapidly into a powerful civilization. This quick and impressive rise to power seems to have been unprecedented among indigenous peoples of the Americas. Incan military expertise, diplomacy and commanding leadership contributed to the dramatic growth and lasting strength of the Empire. Leaders brought about major improvements for the people, enriching the culture, with art, architecture, music, and religion.

Prior to the Incan era, many individuals in the region lived in elevated terrains, far from agriculture and resources. When the Incas resettled the population, a large portion of the people left their former, high-elevation homes and moved into settlements with fertile, accessible land. This change allowed individuals to produce crops with ease and in large quantity. The infant mortality rate declined, as mothers had the proper nutrition and were no longer living in cold, inhospitable locations. Further, the uniting of the disparate villages into one empire reduced the incidence of local warfare, allowing for greater stability and greater safety in the daily lives of the people.

Under the Incan aegis, a central authority regulated daily activities in the village.. Inhabitants adopted a communal way of living, with a sharing of resources and food. While the taxes were high, increased revenues allowed the Incas to undertake ambitious feats of engineering. The design, technology, and stylistic intricacies of structures were far superior to the work of their contemporaries; indeed they continue to represent a mark of quality in architecture and urban planning. The Incas constructed huge forts with stone slabs cut so precisely that they would fit together without any binding material.

Discovered a century ago, the site of Machu Picchu serves as a lasting symbol of the Inca's engineering brilliance, diplomatic expertise, and foresight in urban development. This site was divided into three areas: an agricultural center, an area of homes and businesses, and a section for churches and temples. Within these areas, the buildings and temples were placed so that their function was synchronized with the topography of the surroundings. For instance, the agricultural terracing and aqueducts were built into the slopes of the mountains. The lower regions housed structures for farmers and teachers, enabling ready access to crops and for students. The religious buildings were located at the peak of the hill, bringing to the inhabitants a sense of closeness to the gods. The precise arrangement of the buildings of Machu Picchu fostered heightened interactions and promoted political stability for the Incan people. Moreover, this site left an enduring impression on future generations as a model of quality development. Tens of thousands of international travelers visit the site each year to explore and celebrate the contributions of the Incan people.

#19 Age of Discovery: Exploring and Connecting Worlds

Prior to the fifteenth century, the civilizations of Europe were isolated from much of the far East, including India and China. Determined to find an alternate route to obtain spices in India, both Spain and Portugal took to the seas, with Portuguese explorers travelling around Africa, and Spanish explorers sailing west in pursuit of another trade route to India. By accident, Spanish explorers came upon the Americas, with populations and settings radically different from cultures they had seen before. Moreover, Aztecs in Mexico, Arawaks in the Caribbean, and Incas in Peru were strikingly different from one another. Encounters with this “New World” expanded the purview of Europeans and fueled curiosity to embark on further explorations, as a means of discovering new natural and man-made treasures, and encountering new populations.

The Age of Discovery embodied human curiosity about the extent of the world, if not the universe. The travels of Magellan from Spain into the Pacific Ocean epitomized this new quest to understand the different contexts in which individuals were able to live. As new territories were uncovered—the Americas in the late fifteenth century, Australia in the early seventeenth century and many of the Pacific Islands in the eighteenth century—there was a steady increase in knowledge about flora and fauna, weather patterns, geographic settings, and ways of living. As a result, we have a much wider inventory today of different cultures, weather patterns, animals, plants and foods—as well as pests, diseases, and human disasters. And of course, we also learn about the ways in which humans cooperate and conflict, make war and make peace, create art and worship gods.

In our time, motivation of the sort that propelled world explorers during the Age of Discovery can be seen in those who travel and explore outer space. Since landing the first person on the moon in 1969, astronauts have established an International Space Station and are hoping to learn more about Mars, in particular whether it can sustain life forms. And while the opportunity to encounter exotic populations and unknown lands may have waned, scholars and laypersons are as curious as ever about the inner spaces of the human mind and spirit.

#20 Gutenberg and the Printing Press: The Democratization of the Written Word

In the thirteenth century, paper printing and block printing, a process by which characters were carved into wood blocks and transferred on to paper, made its way to the West from China. While this process was more efficient than hand-written manuscripts, it was still not ideal for speedy, mass production of texts. In 1450, a German inventor Johannes Gutenberg combined Chinese block printing, moveable metal type and (his creation) an alloy of lead and tin, and produced the printing press. This machine revolutionized printing capabilities and the process of communication.

The invention of the printing press in the fifteenth century ushered in a revolution. Prior to its invention, books were scarce and literacy rates low. Having essentially no access to written information, most individuals relied instead on oral traditions. The wealthy found power not only in their worldly possessions, but also in their exclusive grasp on knowledge. The reproduction of texts was an expensive, time-consuming process, typically unavailable to the masses.

Gutenberg's printing press enabled books to be produced quickly, easily, and relatively cheaply. While books did not immediately replace hand-written manuscripts, they spread rapidly, as did printing press itself. Throughout Europe, the spread of books helped to increase literacy rates and speed the dispersal of ideas to people of all social and economic classes. The printing press proved to be far more than a simple machine—indeed it was a tool for transmitting established knowledge and works of art and catalyzing new ones.

Empowered with the ability to read, men and women sought books for entertainment, learning, and pleasure. Moreover, those with the ability to read typically experienced more freedom in their daily lives and greater opportunities to pursue schooling and careers. Those who could read had a greater understanding of current events and innovations, which facilitated their meaningful participation in society. Those who remained illiterate were increasingly marginalized.

Capable of holding larger amounts of texts, libraries grew in size and popularity. Individuals of means could buy texts on a broad range of topics. Further, the printing press served as a catalyst for the standardization of knowledge. Such standardization became particularly important as the Renaissance in Europe spawned innovations in science, technology, and philosophy.

The desire to spread the written word and to make information widely accessible continues unabated. The invention of the Internet and the subsequent digitization of books and hand-held reading devices (Nook, Kindle) have the same purpose as the early printing press: to spread information widely, foster a love of and value for reading, and provide information in large quantities, and at high speed, to the public.

#21 The Renaissance: Re-Discovering and Building on the Creations of an Earlier Era

Around the middle of the fifteenth century, European countries emerged from the economic stagnation and population decline that characterized much of the Middle (or Dark) Ages. And so began the period known as the Renaissance. Literally a “rebirth,” the Renaissance signaled renewed interest in and knowledge about classical times, particularly Ancient Greek and Roman art, science, music, literature and philosophy. A middle class emerged with the means to buy goods and utilize the services of bankers and merchants. Increasingly, these individuals sought beauty in their daily lives, and this desire spurred the creation of innovative building, sculpture, graphic arts, literature and drama.

The discovery of ancient science texts—some preserved by Islamic scholars-- ignited the minds of many thinkers. In 1509 Hans Janssen used ideas of positioning glass in front of objects to enlarge them, thereby developing the first compound microscope. Early models of the microscope provided 20-30 times greater magnification of objects, allowing for advances in medicine and a deeper understanding of human anatomy. Leonardo da Vinci studied classic texts on anatomy and architecture as a spur for his own investigations depicted above that we would classify today as art and science.

The revisiting of classical concepts, including a focus on linear perspective and the depiction of nature (as opposed to religious figures) ushered in new artistic standards. Renaissance painters told stories with their work and explored diverse and often extreme manifestations of the human condition. Michelangelo’s monumental sculpture, *David*, portrays the biblical hero before his battle with Goliath. David’s calm expression denotes his thoughtful reflections prior to springing to action. Michelangelo’s decision to portray David in this style emphasizes the Renaissance focus on exploration of the human condition, including psychological and motivational states. The artist looked to the standards set by ancient artists of the Greek and Roman times and attempted both to replicate their ideals but to reach beyond them.

As an historical period the Renaissance ended by the seventeenth century but its influence is still felt today. Just as the Renaissance entailed the rediscovery and re-evaluation of classical art and knowledge, much of our current thought and art work builds upon the achievements of this remarkable period of human history.

#22 Leisure Time: Its Evolution over the Centuries

Philosopher Bertrand Russell wrote, “To be able to fill leisure intelligently is the last product of civilization.”⁶ Over time and due to technological innovations and more ample resources, inhabitants across the globe have spent less time on the essential tasks of daily life (making clothes, building shelters, gathering food, and traveling for work) and more time on “leisure” activities.

Leisure activities reflect the economics, religion, and availability of resources during the given period. Ancient cultures enjoyed watching live entertainment and competing in physical challenges. The Greek people built amphitheaters throughout their cities where they spent time watching plays and listening to music. In their Colosseum, the Romans viewed chariot races and gladiator fights. In other traditional societies, people danced, sang, and participated in religious ceremonies. During the darkest of the Middle Ages, poor economic and health conditions dictated a focus on work, with little time for leisure activities. However, when time permitted, some enjoyed early forms of chess and checkers, while some attended jousting and hunting tournaments. Sixteenth century England saw the development of Elizabethan theaters, allowing the public to enjoy live performances, an experience that expanded the reach of the performing arts. In the 18th century Europeans often played classical music for entertainment during social gatherings.

The Industrial Revolution of the 19th century changed how individuals conceptualized time. Common standards for the social work week demarcated certain hours and days for leisure activities. Divisions between the classes and how they spent their leisure time became marked. For example, the creation of cycling clubs in France in the 1800’s attracted primarily the wealthy as they were the only individuals able to afford bicycles.

In modern times, all types of leisure activities are at our fingertips; individuals can freely choose how to spend uncommitted hours. For instance, an athletically inclined urbanite may partake in running during leisure time, while one living in a suburban or rural location may enjoy gardening or farming. Some people make choices that involve technology (gaming, social media), others pursue options that deliberately reject our increasingly wired world (camping, hiking), and still others pursue the arts (theater) or crafts (woodworking). In a world where time has become a highly valued commodity, the decisions we make about what we do with our leisure hours become increasingly important and increasingly revealing.

⁶ Koshar, R. (2002). *Histories of Leisure*. Oxford; New York: Berg Publishers.

#23 Shakespeare: The Heights of Theater Artistry

William Shakespeare's influence on theater and literature created a new standard of artistry. Shakespeare's works revealed the human experience through arresting verse, memorable characters, and epic dramatic struggles. Thanks to Shakespeare's dramatic skills and his accessibility, the range of workers across social classes and national boundaries came to enjoy dramatic performance. Centuries later, his work is widely studied in schools around the world, both as a reflection of Elizabethan society and because of its unique place in the canon of dramatic literature.

During the 16th century, England was marked by sharp class divisions. The emergence of Shakespeare—an “under-educated” genius who wrote great works of comedy, tragedy, and history—was inspiring to many. The life of Shakespeare embodied both the privilege and the inequities of the Elizabethan era. Much of Shakespearean drama chronicled the actions of heroic figures, drawn from classical myths or history or from English or European nobility. But the content of his work raised consciousness about societal injustice, provided a means of protest against class differences, and played a role in democratizing opinions.

Elizabethan theaters were unique in their participatory nature. In earlier periods dramatic performances had been restricted to the courtyards and homes of the wealthy and noble, excluding the common man from the experience. But people coming to watch Shakespeare were considered part of the performance, with the actors interacting with the audience regularly, seeking their reactions and interpretations of the story being enacted. The Globe Theatre in London, shaped in a round, inclusive style, was structured in a manner to encourage this participation.

Live performances of Shakespeare's work has always been popular, and remain so to this day. When we have so many options about how to fill our leisure time, it is significant that many choose this particular artistic pursuit. Shakespeare's legacy as a masterful dramatist and a genius in the use of language continues to be influential in contemporary theatre, film, and literature.

#24 Formalized Education: A Shift from Transmitting Information to Creating Knowledge

Throughout history, education has transmitted the accumulated knowledge and the values of a society. Learning in formal settings has allowed the spread of ideas, increased access to opportunities, and fostered advancements in technology, culture, and governance. The evolution of education further enables individuals to grow personally and expand their perspectives on what is possible.

The structure of education has evolved and transformed with the times. In ancient, pre-literate civilizations, observation and oral traditions provided education for individuals. The invention of writing around 3000 BCE soon spurred an education system geared towards increasing literacy skills, primarily for the elite. In classical times, academies in the spirit of Socrates and Plato were established, with philosophical dialogues used to train the mind. The Early Middle Ages saw the emergence of more formalized systems of education, including the delineation of the *trivium* (referring to the study of grammar, logic, and rhetoric) and the *quadrivium* (referring to the study of math, science, music, and astronomy). The Catholic church took an active role in education, setting up centers of literacy and learning throughout Europe. At the same time, the Ottoman Empire became host to a range of education hubs, including centers of medicine and mathematics. The Aztecs in Mexico mandated education for all children, regardless of gender or social class.

The increased focus on higher education in the Late Middle Ages inspired institutions to shift from a focus of communicating knowledge (chiefly from the Biblical and Classical eras) to the discovery of new information and the creation of new knowledge. This focus on new learning has allowed the spread of ideas, increased access to opportunities, and fostered advancements in technology, culture, and understanding of the world. The evolution of education has enabled individuals to grow personally and expand their perspectives on what is possible and in turn, enable them to assess the quality of new theories and new practices.

Oxford University, the oldest university in the English-speaking world, set a standard for subsequent research institutions. Oxford's expansive curriculum fostered critical thinking and called for students to think about the quality of the information they were encountering. In Italy, the University of Bologna attracted scholars of rhetoric, grammar, and logic while in Paris, the Sorbonne saw the emergence of humanities and arts. In Germany, Heidelberg University, created in 1385, focused initially on theology, jurisprudence and philosophy. By the sixteenth century, Heidelberg had expanded its curriculum significantly. At a time when church-driven doctrines dominated education, Heidelberg's secular curriculum attracted professors and students from all over Europe.

Across the globe, education has had different accents. In the wake of Czech educator John Amos Comenius' efforts with young learners, the idea of universal education took hold in many countries. In Asia, formalized education systems for all ages became more widespread in the 1800s; India placed schools in most regions and taught subjects ranging from philosophy to metaphysics. In North America, reforms in education saw the birth of universal primary education, standardized textbooks, curriculums, and an explosion of universities, helping individuals gain the knowledge and critical thinking skills relevant to their careers.

Today, education stands at the forefront of the political agenda of many countries. In a post agrarian, post industrial world, the knowledge society has become a universal goal. Questions about the purpose and goals of education and the most effective teaching and learning models are widely debated by reformers, policy makers, teachers, students, parents, and ordinary citizens. Oxford and Heidelberg Universities set a high standard, and their impact on educational ideals continues to be felt worldwide.

#25 Peace of Westphalia: Resolving Intergroup Conflict, Bridging Economies, and Respecting State Sovereignty

During the early 1600s, Europe was wrought with conflict. There were wars between Spain and the Dutch Republic, and among Spain, France, the states of Germany, the Holy Roman Empire, and the Habsburg Empire. The primary issues fomenting armed conflict were religious intolerance and disputes over governance. The Peace of Westphalia—consisting of the Treaties of Münster and Osnabruck that ended both the Thirty Years' War and the Eighty Years' War—helped quell this fighting. Specifically, the Peace of Westphalia created mutual respect for minority faiths, clearly designated boundaries in Europe, and facilitated economic cooperation among the European territories. As a result, the ensuing peace from Westphalia helped to consolidate the concept of state sovereignty and set a precedent for mutual respect and cooperation among different cultures and faiths.

The peace agreements of Westphalia were developed by many individuals, including the Holy Roman Emperor Ferdinand III, other German princes, and representatives from Spain, France, Sweden, and the Dutch republic. The Treaty called for an end to fighting among all nations (with the exception of France and Spain); outlined rights of Catholic, Lutheran and Calvinist minorities to practice in the German states; and recognized the independence of the Netherlands and Portugal. It gave assurance that nations in Europe would not interfere in the affairs of one another's states. The re-defining of national boundaries and the promise of state sovereignty created the conditions for building national identities and the establishment of the modern nation-state. The treaty set the tone for reconciliation among feuding countries, protection for minority groups, and growth for the individual economies.

Aside from the specific content of the treaties, ratified by all parties involved, the Peace of Westphalia set the groundwork for investing in public works and joint economic ventures that had the potential to benefit all of central Europe. The treaty specifically outlined the need for each party to work towards the benefit of other European nations. This economic strategy would influence the thoughts and actions of many influential leaders within and outside of Europe, from the 18th century to the contemporary era. The countries of Europe worked together, opening up trade routes, helping one another's economies, and setting the foundation for the today's European Union.

The concept of Westphalia sovereignty is heralded by international relations theorists. It still serves as a model for resolving land disputes. As an example, the most comprehensive agreements pertinent to the Israel-Palestine conflict call for the recognition of both as states with a joint economy centered on a shared Jerusalem.

#26 Mass Production of Writing and Painting Implements

The creation and subsequent mass production of writing implements dramatically changed work and school environments, and facilitated daily activities around the clock. While the inventions of the pencil, the ball point pen and the metal paint tube were significant in their own right, their full impact would not be felt until they could be produced rapidly and efficiently. The system of mass production allowed for standardized production of goods using well designed, interchangeable parts and ensured the spread of these significant inventions to a wide audience around the world.

The earliest pencil was made from sticks cut from graphite in Cumberland, England in 1560. The first mass produced pencil was later created in Nuremburg, Germany in 1662, and, encouraged by companies such as Faber-Castell (established in 1761), the place of writing and drawing in our culture proved transformative. Previously, writers used sharp stones, stylus, quills and ink to express their thoughts and convey their feelings. Because of their expense and scarcity, these writing instruments found popularity only with a minority of the population. The newly produced, wood-encased pencils provided advantages in both their practicality and simplicity. Lightweight and portable, these pencils made drawing, writing, even puzzling readily available as both work and leisure pursuits.

The creation and spread of paints gave artists tools that facilitated and enhanced their creative process. As an example, American artist John Rand's creation of the collapsible metal paint tube in 1841 had an important effect on painters of the time. Prior to this invention, painters who desired to work outdoors had to pack paints in fragile glass vials or leaky cylinders. The newfound portability of paints allowed artists to leave the confines of the studio and take their work outdoors. Artists could now capture nature and life as they observed them, using quick strokes to reflect light and movement. In the beginning of the twentieth century, colored pencils were produced in a variety similar to a typical assortment of watercolors. Henceforth even the casual artist could easily sketch in vivid colors.

Today, advances in technology are helping to improve the quality and widespread appeal of various writing and painting implements, while at the same time complexifying the picture of how we express ourselves. People from all walks of life continue to use pencils, pens, and paint to articulate their ideas in written and pictorial forms. Because we have so many options about how we communicate (via phone, email, Skype), the choice to do so by hand may be indicative of a particular type of expression, one that is more personal or more passionate.

#27 Classical Music: The Height of Sound

Music has the power to stimulate the senses, evoke a range of emotions, and convey a variety of patterns and forms of differing degrees of complexity. Few forms of music have had deeper roots or a more global reach than the genre that we term “classical music”—the music associated with the names of Bach, Beethoven, Brahms and Bartok. The mental and physical skills required to compose, perform, and interpret classical scores are unique.

The earliest form of classical music dates back to the twelfth century, when music was primarily based in religious ceremonies. Gregorian chants, with their simple, one-line melodies, laid the foundations for classical expression. The Renaissance and Baroque eras introduced new complexities into classical music. Composition emerged as a separate livelihood, and composers began to incorporate harmony, counterpoint, and a variety of rhythmic patterns into their art. Music expanded across sectors of society, becoming an anticipated ornament at dinner parties and public events. Royal courts used the music as a background in functions, while singers and dancers began utilizing classical scores to ground their stories and set the mood for their performances. Ballet choreographers and opera composers found great value in the richness provided by scores. Free standing concerts were programmed, often with newly orchestrated pieces, and citizens with means and interest flocked to these performances.

Despite classical music’s richness and variety, its appreciation is not instantaneous for many; an understanding of the history, structure, and story line behind the music is helpful. Those who find joy in the classical form may also find deep meaning in the music, as they are often educated in the language of the music, understanding the structure and progression of melodic and harmonic lines. Experience in performing—for example, some facility with a string or keyboard instrument—is often helpful. More so than other artistic forms, classical music has caught on across the globe, suggesting that its appeal transcends particular cultural norms.

Today, music of all varieties may be listened to, anywhere at any time, in the privacy of our homes or on our iPods. These advances have changed the experience of music for many, allowing a wider range of people to enjoy the art without having to spend money on a concert ticket or even purchase a CD or tape. For music lovers, however, the unadulterated sound quality and chance to see the performer at a live concert remain the pinnacle of the musical experience; as a result, the cost becomes a worthwhile investment.

#28 Cities: Expanding Possibilities and Encouraging Human Growth

Throughout recorded history, the city has been a primary axis of culture, education, and governance in society. Dating back to ancient times, cities have expanded possibilities, enabling multiple forms of personal interactions, institutional building, and the sharing of practices, experiences, and ideas.

Cities were originally formed because of their proximity to an essential natural resource or geographical asset. The Egyptians formed large settlements on the Nile River; this source fertilized the lands surrounding it, allowing abundant crops to grow. Individuals gravitated towards these resources for easier access to life-sustaining goods, giving rise in turn to ever-expanding populations. The larger population then catalyzed or fostered the creation of governmental institutions, skilled labor, schools, culture and social movements. The city catalyzed the growth of people's knowledge, skills, and tolerance.

Cities depended on stable leadership to ensure sustainability. Leaders of urban communities needed to maintain peace and provide citizens with opportunities to improve their social and economic situations. During the Middle Ages, due to their tolerance of diversity and expression, cities such as Istanbul and Seville became centers of knowledge and achievement. With the advent of the industrial revolution, individuals flocked to the cities, where they found employment but often lived under trying circumstances. By the nineteenth century, the major capitals of Europe had become the principal platforms for the exchange of ideas, the melding of perspectives, and, at times, the seedbed for political revolution.

Modern cities have more flexibility in their location—resources have become transportable, and the need for proximity to a water or energy source is reduced. This diversity of locations enabled the migration to cities by an even larger population of people—giving rise to metropolises and 'mega' or 'global' cities. Visionary city planners such as Le Corbusier, Kevin Lynch, and Rem Koolhaas focused on how individuals perceive and navigate the urban environment. Efforts were undertaken to maximize the economic potential and social experience of each neighborhood. Advancements in transportation, dining and leisure options, an abundance of cultural institutions, and public and health services heightened the quality of life of many urbanites. Recent studies suggest that cities are in fact the healthiest, most environmentally sound, and culturally rich geographic locations.

For the first time in history, today more than 50% of the world's population lives in cities. Economists project that by 2050, that percentage will increase to upwards of 70%. Cities have become the center for most lives, where we live, work and play. Throughout history, cities have enabled people to enhance their standard of living while being at the center of a dynamic world, having the opportunity to explore their potential and pursue many avenues of growth.

#29 Art through Movement: Dance as Expression

An important—indeed, indispensable—art form, dance has served as a way of communicating stories, expressing feelings for a loved one, celebrating key events, entertaining an audience, and providing exercise, elation, and catharsis.

There are many forms of dance, varied in technique, tone and style. Each style of dance offers a different experience to the dancer and audience, some providing a high art form, others offering theatrics, yet others featuring inclusive participation.

The most rigorous dance characterizes traditional and modern ballet. Ballet started in the Renaissance as a form of entertainment in the royal court. While the form has evolved in recent centuries, ballet remains one of the most technically challenging and physically demanding forms of dance. It is unique in its appeal as a beautiful display of the body in motion and its potential for dramatic story-telling. Ballet requires a high level of commitment and study; dancers have a chance to demonstrate physical excellence and viewers to view stunning feats.

In recent times, other varieties of dance have achieved population. So-called “modern dance,” while also appealing to sophisticated audience, foregrounds a freer mode of bodily expression and disdains personality and plot in favor of suggesting ideas and emotional states. Hip hop dancing, which emerged in the 1970s, highlights audience participation and often conveys political messages and stances. The appeal of hip hop is widespread, with professional dancers finding meaning in its challenging steps and fast tempo, and others in its playful nature.

Dance is a cherished art form, allowing movement and joy to the beat of multiple musical genres. Dance can be done by anyone in virtually any location. Today, thousands of dance styles exist, and the reach of dance—as an art form, cultural artifact, and a means of expression—continues to expand. Indeed, given the ease of mixing media and genres, dance has become integrated with other art forms, in both live and digital formats.

#30 Rail Transportation: Enabling People and Goods to Travel Widely, Easily and Efficiently

In 1830, news spread to distant locales about the launch of a train route in England, running between Liverpool and Manchester. Reporters, engineers, and dignitaries from around the world came to bear witness to this 31-mile railway that anticipated the design of many train systems to come. The Liverpool-Manchester line stood out because it was powered solely by steam, it was double tracked, and it connected two major industrial centers. The steam engine allowed efficient transport of coal and other minerals and accelerated the movement of goods at the epicenter of the Industrial Revolution.

Trains stood out as a form of transportation in a number of ways: as a form of leisurely travel, a provider of access to goods, and an early type of “globalization”; people across the socio-economic spectrum now had the ability to visit places about which they could only have previously dreamed. Through the late 1800s and into the 20th century, trains spread quickly across Europe, Asia, and North America. People realized the power of trains for transporting amenities, but also as a means of rapid transport within increasingly clogged urban areas. Large cities such as London and Paris constructed underground train systems, or subways. The development of diesel and electric run trains made subway and street car systems possible, allowing people to move within cities with greater ease and efficiency. Diesel and electric trains were cleaner than steam, requiring less maintenance and travelling further distances without the need to stop and refuel. In the late nineteenth century, the expansion of the train system in India was instrumental in abating famine in under-resourced regions of the country. In less developed rural regions today, rail transportation also creates opportunities for industrial development and job creation.

Trains remain one of the premier methods for transporting goods and individuals across long distances. Today’s railway systems also reduce the time spent in transit. To this end, train schedules closely reflect the common times in which people travel to work—with more trains operating during peak hours—so that commuters can spend less time in transit between home to work. Additionally, the speed at which trains travel today differs markedly from the past. In the late nineteenth century, “express” trains that averaged at least 29 miles per hour were considered to be high quality trains because they were the fastest means of travel. During that time, France was considered to have the “best set of expresses on the Continent,” with train speeds averaging up to 43 miles per hour. Today, high-speed trains far exceed the “expresses” of the past, making travel quicker and more accessible to a wide variety of people. In 2007, the latest French line, Est, was developed with a line speed of 200 miles per hour. It is now possible to travel most of the length of France—the 487 miles between Paris and Marseille—in three hours, which makes this the longest nonstop railway in the world. Railways such as these expand the possibilities about how we spend our time.

#31 Airplanes: Realizing a Human Dream

The invention of the airplane in the early 20th century greatly expanded opportunities for travel and trade. The simple flying machine, contrived by the Wright brothers in 1903, has developed into an unprecedented complex worldwide transportation system that impacts the lives of virtually all human beings. Several innovations in technology allowed humans to travel faster and farther than ever imagined, shattering the limits of what was once thought or even dreamed of as possible. The commercialization of airplanes has made available to ordinary citizens the quickest form of transportation yet devised.

The airplane allowed humans to defy the laws of gravity. The Wright brothers' invention spearheaded the creation of a long line of machines that enabled travel by air. Soon thereafter, the first helicopter was launched. Designed by Spanish engineer Juan de la Cierva, it could lift directly from the ground and land directly down, avoiding a long take off and touchdown procedure. Subsequent decades saw advancements in airplane technology, as planes transformed from hard-to-fuel, wood paneled machines to modernized, high powered vehicles. The speed and power of planes allowed for pioneers such as Amelia Earhart (first female to fly across the Atlantic Ocean) and Charles Lindbergh (who set a record time in the first solo flight across the Atlantic ocean) to make flying a sport and a passion. The creation of the supersonic jet challenged expectations about how fast man can travel. It was believed that no person could travel at the speed of sound, but in 1947, the first manned jet travelled at supersonic speed. Now, Concorde-style jets accommodate passengers at speeds faster than the speed of sound. The first space launch by the Soviets in 1957 and the successful landing of a person on the moon in 1969, expanded our understandings of the potential of travel to outer space.

In centuries past, transoceanic travel was accomplished by ships, which would take days—if not weeks—to traverse the ocean. With the advent of commercial airplanes, passengers can hop from one continent to the next within hours, not days or weeks. Comfort in commercial airplanes has also evolved. Most airlines now have luxury seating and different forms of entertainment; moreover, one can resume typical daily activities—for example, use a laptop computer for work or pleasure or place a phone call—while thousands of feet above the ground.

Airplanes also quicken the pace of international trade, transporting needed or wanted goods quickly and on demand. Individuals in the most remote places on Earth can be rescued or given aid in the form of food, water or medicine. People of all ages can travel to learn, to enjoy, to sightsee, to immerse themselves in diverse cultures. What was barely imaginable a century ago is now an essential part of the lives of millions of people.

#32 The Motor Car: Personalized Transportation at High Speed

The automobile has changed forever the way people work, live, and interact. Unlike other innovations in transportation, the invention of the car has allowed individuals to assume personal control of their travel. Giving people mobility and freedom, the car has ushered in many new opportunities.

Commercial production of automobiles began in Europe in the 1890s and in America in the following decade. While cars were initially purchased only by the wealthy, Henry Ford's Model T (created by the Ford Company) provided a more affordable option, allowing accessibility to a wider consumer base. Henry Ford's business strategy was innovative: he lowered car prices, paid employees higher than average wages so they too could purchase cars, and thus boosted the value of the company's stock along with the visibility of its products. This strategy fostered the rapid spread of the car. By 1920, Ford had sold over one million cars.

Prior to the car's invention, carriages and horses were limited to 10 to 15 miles a day. The car shattered these distances, allowing people to live in one place and work in another, and eventually contributing to the emergence of suburbs and the creation of a commuting culture. New roads were built, helping farmers to transport goods from farms to market. Without geography as a barrier, people could consider various career options, visit distant relatives, plan individual vacations across the land. And with the advent of car ferries, they could even travel from one land mass to another. Around the globe, the automobile parts industries developed rapidly to meet the growing demands for transportation. While Henry Ford favored one basic model, rivals like General Motors offered a differentiated choice of vehicles. And as diverse models became available, cars became a symbol of status and wealth to some, and for others, an idiosyncratic form of expression. Individuals signaled their own priorities in terms of the vehicle's safety, durability, and design. The acquisition of a driver's license has become a treasured rite of passage with young people, providing a newfound sense of independence.

With over one billion cars produced in the last century, this mode of transportation has become the norm in the developed world. In recent decades, cars that use less gas and emit less fumes, such as hybrid and electric cars, have become popular among the environmentally conscious. Carpooling saves money and reduces traffic congestion. The automobile continues to evolve, with today's market offering a variety of speed, comfort, energy consumption, and aesthetic features. And while some governments would prefer to reduce the number of vehicles, the pressure for ownership of a car—an embodiment of mobility, freedom, and status—remains as strong as ever.

#33 Emergence of Photography: Capturing Beauty and Creating Memories

Photography at once allowed people to document history, created an art form, and forged new connections among the regions of the world. With this technology, efficient, high-quality documentation of places, events, and people was possible, and their preservation over time was ensured. Photography not only recorded the world of visual experience; it also came to influence how people viewed the world.

The first permanent image was captured in 1826 by French inventor Joseph Nicéphore Niépce. He used a camera obscura to burn an image of the French countryside onto a chemical-coated pewter plate. This procedure, called heliography, entailed an eight hour process to develop the image. Building on this technique, in 1839, Louis Daguerre invented the daguerreotype, with which the first photographic images of humans were captured. More advanced in structure, the daguerreotype's long exposure time made it impossible to capture moving images. Indeed, photography was initially used to document unfamiliar foreign sites.

As camera technology improved, so did the power and reach of the photograph in people's daily lives. The first color photography, invented in 1861 by Scottish physicist James Clerk Maxwell, called for super-imposing black and white images through a color filter. His invention (and later advancements on color photography) produced more life-like images, and allowed for the capturing of a moment or scene in all of its vivid colors. The development of a camera that could capture moving images by Eadweard Muybridge in 1878 revealed the potential of photography to study movement in detail. Photographic images became a tool for scientific exploration as well as a partner in commercial venture. Further inventions of the Polaroid camera and smaller, quick exposure models made the technology open to the public, serving as a hobby, passion, and even a career. Individuals could preserve important moments in history, special days, valued family and friends, indeed any and all images that they deemed important.

The newfound mobility of cameras permitted the capture of a wider range of images, helping photography find a place in the print world of magazines and newspapers. Advertising agencies, magazine and journal publications, and marketing firms appreciated that a real life image could portray a product vividly and attractively, enhancing their message, and persuading consumers to buy. Magazines and newspapers had the power to display images of wars, celebrations, and heroic accounts. The photograph accomplished with simplicity what previous art forms had sought: the capture of color, detail, and texture with startling fidelity to the original.

Cameras have progressed from the large, cumbersome daguerreotype to today's tiny, multi-capable digital cameras, enabling unprecedented portability and convenience. Computers, smart phones, and other hand held devices all have the capacity to capture a fleeting moment, preserve and imprint milestones, and portray a beautiful scene. Photography is part of a new level of immediacy with tools such as texting, YouTube, and Facebook, facilitating a myriad of

connections and the instant recoding and sharing of images not only with one's own circle but also with others around the world.

#34 Modern Architecture: Form and Function

Modern architecture—the buildings of the last century—has changed the way individuals experience the places in which they live, work, and play. Given innovations in technology, design and materials, architects could showcase engineering accomplishment while also serving the needs of individuals who inhabit the spaces. A heightened concern for the human experience emerged in thinking about design. Clients, particularly businesses and municipalities, wanted spaces that people would enjoy being in, and architects combined this attention to lived experience with the creation of iconic buildings that attracted visitors from around the world. Modern architecture helped inhabitants and observers to attend anew to the spaces in which we live.

Moving away from the classical notions of “bigger-is-better” and the predilection for heavily adorned cathedrals and monuments, modern architects foregrounded the perspective of the person inhabiting the space. This idea allowed a focus on how a building, home, or space could enhance an individual’s experience. Le Corbusier, one of the fathers of modern architecture, sought to provide superior living conditions for residents of highly populated cities. His statement, “The house is a machine for living in,”⁷ summarizes his idea that that architecture needed to serve human ends.

Other architects were influenced by Le Corbusier’s ideas. Frank Lloyd Wright, one of the pioneers of modern architecture, focused his designs on their potential to foster interactions between people. His homes featured a hearth in the center, and a floor plan that allowed for openness between rooms; their result was a more free-flowing home where the household was connected and open, rather than segmented into discreet units. The Robie House, designed by Wright between 1908 and 1909, modeled his concept of openness in living; it featured a split-level design and rooms flowing into one another.

Frank Gehry’s Guggenheim in Bilbao, Spain (pictured above, right) changed the landscape of a small city. His museum reinvigorated the city of Bilbao while providing visitors with a once-in-a-lifetime experience. Gehry’s attention to lines, light, nature, and space paid homage to the traditions of the city, even as it exemplified the standards for international architecture set by the modern movement. The museum’s structure provides a comfortable venue for the exhibits, with small display rooms that show a single piece powerfully, to stadium-sized halls for massive sculptures and other grand works of art.

The unprecedented response to the Guggenheim in Bilbao has inspired other architects to create iconic buildings in sites that hitherto had few attractive landmarks. Even in much-visited locales, there is pressure to create museums, apartment houses, government buildings, and banking facilities that are breathtaking.

⁷ <http://www.time.com/time/time100/artists/profile/lecorbusier.html>

#35 Psychoanalysis: Opening up Treatment of the Human Psyche

Pioneered by Viennese physician Sigmund Freud during the late 19th and early 20th century, psychoanalysis stands out as both a theory and a practice. A theory of the self, of child and adolescent development and of emotional and behavioral disorders, it is also a highly individualized process in which a mental health practitioner guides a patient in an exploration of the complex operation of his or her unconscious. While full psychoanalytic treatment is no longer as common as it once was, it opened the door for a range of therapies, used with many types of patients all over the world.

Psychoanalysis originally developed as a result of Freud's experience with patients suffering from hysteria. In 1880, "Anna O." went to a medical doctor with a variety of symptoms, including an inability to eat, paralysis, a nervous cough and an inexplicable change in how she interacted with others. At the time, there was no medical explanation for her condition, which was typically dismissed as 'hysteria'. However, as a consequence of the then emerging process of the "talking cure," in which recall of the past revealed the hitherto repressed experiences that gave rise to her symptomology, the patient's health and quality of life gradually improved. Freud and his associate Josef Breuer encountered several patients of this sort; through verbal free association and the interpretation of dreams, the presenting symptoms were gradually alleviated. By the turn of the century, the broad outline of psychoanalytic theory and practice had emerged.

Today, the mental health field retains many of the core principles of the practice of psychoanalysis. Psychoanalytic techniques, or techniques inspired by psychoanalytic theory and practice, are used in a variety of different settings with children, families, and other kinds of groups. Psychoanalytic theory's impact on the study of healthy human development also paved the way for measures to reduce the occurrence of mental illness, such as community based organizations offering a wide variety of education.

Over time, psychoanalysis contributed to the understanding of mental life across the lifespan. Although some of the tenets which form the basis of psychoanalysis are in question today, this treatment's impact on the health community remains strong. Laypeople invoke psychoanalytic concepts—such as the functioning of the unconscious, the meaning of dreams, the importance of early experiences—even if they have never heard of Freud's work. And as people live longer, and the stresses of life continue to mount, the search continues for effective therapies, both personal and pharmacological.

#36 Non-Violent Resistance: Mahatma Gandhi and the Creation of a Civil Disobedience Movement

“An eye for an eye makes the whole world blind.”⁸

Mohandas (Mahatma) Karamchand Gandhi is widely known for his political beliefs and actions, religious practices, compassion and care, and moderate life style. Perhaps his most important accomplishment was his insistence on a decent quality of life for all human beings, independent of nationality, class, or caste.

Though most people view Gandhi as the icon for civil disobedience, he was not the first to write about or practice it. Thinkers and writers before him, ranging from the American philosopher Henry David Thoreau to the Russian novelist Leo Tolstoy, inspired Gandhi's meditations about human conflict and mediation. But Gandhi was the first person in modern times to create a large-scale civic disobedience movement as a means to gain desired political ends. Specifically, Gandhi worked for fair and equal treatment of Indians in South Africa and in Southeast Asia and ultimately, for Indian independence from British imperial rule.

Born and raised in India, and later living in England and South Africa, Gandhi observed first hand how Indians faced social injustices based on the darkness of their skin. In addition to being exploited at work and restricted to poor living conditions, Indians were forbidden from riding in certain sections of trains, asked to take off their turbans in public places, and prevented from staying in hotels. Throughout the British Empire, injustice was the norm as the Indian population was deemed less worthy than others.

In the 1920s and 1930s, Gandhi became India's main political and ideological leader. The Mahatma, as he came to be called, modeled through his courageous example. He encouraged others to follow him—to state a position without anger, aggression, or weapons, not to resist arrest, and to surrender personal property when asked. Gandhi initiated a practice of “*satyagraha*,” (devotion of truth), which includes nonviolent protest, or defying laws through nonaggressive behavior. The steps leading gradually from an initial defiance to a willingness to starve oneself to death were carefully worked out. An important part of the protest also included suffering the consequences for civil disobedience, which could include jailing sentences, beatings and even death.

In fighting against social injustice, Gandhi and his followers often endured harsh treatment. Even though his followers did not use violent means in their “fight,” they were prepared to defy laws that they felt were unjust in order to gain better treatment and, ultimately, political freedom. Their massive civil disobedience was telegraphed around the world, and the resulting pressures not only kept Gandhi alive but created supporters in many lands.

Gandhi has been and remains a model for individuals who want to fight inequality with weapons of love and compassion. In the United States, in insisting on the rights of African-

⁸ <http://www.mkgandhi.org/>

Americans, Martin Luther King Jr. adopted Gandhi's method as his own. Following in Gandhi's footsteps, King organized boycotts, sit-ins, and other peaceful demonstrations. In a Gandhian spirit, King wrote: "The nonviolent approach does not immediately change the heart of the oppressor. It first does something to the hearts and souls of those committed to it. It gives them self respect; it calls up resources of strength and courage that they did not think they had. Finally, it reaches the opponent and so stirs his conscience that reconciliation becomes a reality."⁹

Gandhi's influence endures. In addition to affecting the American civil rights movement, he has been an important figure in the establishment of a democratic South Africa, under the leadership of Nelson Mandela, and has also inspired courageous citizens in China, Egypt, Iran and other authoritarian regimes.



⁹ <http://www.quietspaces.com/kingquotes.html>

#37 Human Rights: The Quality of Every Human Life

The struggle for human rights is not unique to one group, race, religion, or country. Throughout history, there have been countless instances of abuse of human rights, ranging from a denial of the opportunity to live peacefully to explicit discrimination, violence, and even genocide. The spectrum of human rights—a safe home, reasonable nutrition, freedom of expression and religion—allow individuals to pursue their goals, and strive for a standard of quality in their work and personal lives. Abuse of these rights leaves populations depressed and powerless. It takes strength and will to pursue the goals of fair treatment and of a measure of quality in life.

Historically, to the extent that they were recognized at all, individual rights were defined by the group, religion, or race to which one belonged. Ancient cultures produced written and oral texts, including Hammurabi's Code, the Confucian analects, and the Bible, which defined laws, treatment of people, and codes by which to live. However, these rights were not always enforced for members of the group, unless they had power; they were rarely if ever extended across borders.

Within the European and American contexts, there were attempts to delineate the rights of citizens, including The English Magna Carta (1215), the French Declaration on the Rights of Man and Citizen (1789), and the United States Constitution and Bill of Rights (1791). While the sentiments of these documents were designed to be universal, the definition of a citizen was usually restricted to white males, and often only to those who owned land. Without equality, women, minorities, and those without land or wealth were left vulnerable. Even in countries with admirable aspirations, these gaps were evident. The colonization of Africa, slavery in the Americas, the denial of civil rights to African-Americans and women, Apartheid in South Africa, the internment of Japanese-Americans during World War II, were among the many flagrant abuses of human rights.

World War II marked a new low in the treatment of human beings. The Nazi's systematic and calculated extermination of Jews, gypsies, homosexuals, and disabled persons was an egregious abuse, one that ultimately moved the international community to action. The Holocaust of the Nazis (and the disregard of life by other fascistic and totalitarian regimes) helped to trigger the formation of the United Nations, the joining of governments to foster peace and try to ensure a decent life for all human beings. Finally, on December 10, 1948, the Universal Declaration Human Rights was signed by 56 member nations of the UN. This declaration redefined the concept of equality that nations are obligated to provide their citizens. Containing 30 articles, the document mandated that all people are born with the right to pursue life, liberty, and freedom and shall not be subjected to slavery or torture in any form.

Despite the stirring declaration, violations of these rights have occurred many times over the past 60 years. Trade, economic, and international sanctions placed on abusive governments have been enforced in some cases. In dealing with the most flagrant abuses, including the genocides in Yugoslavia, Rwanda, and Sudan, International Courts and Tribunals in the Hague and elsewhere have been set up to determine punishments of offenders. The struggle to ensure universal human rights will continue to be fought nationally and internationally.

#38 Birth Control: Re-Defining Sex, Love, and Choice for Women

Throughout history, the questions of what causes pregnancy and how to prevent unwanted pregnancies have been persistent and vexing. Without the means to prevent pregnancies, women were at the mercy of chance. The quality of their lives was directly connected to how many times they became pregnant, the conditions surrounding pregnancy and delivery, how many children they had, and how many survived.

Ancient Egyptians, Greek, and Roman cultures used various means of birth control. The ancient Egyptians made a paste out of various natural ingredients; Aristotle created his own spermicide out of cedar oil. It was said that Cassanova used half a lemon as form of protection. The mid-1700s saw the creation of the first modern version of a condom, made out of sheep intestines. But even these protections did little to help women regain control over their bodies. Many religions have deemed all sex not aimed at conception as immoral. In the United States, the Comstock Laws of 1873 criminalized birth control, making it impossible for women to obtain legally the power to make decisions over their lives and livelihoods.

Despite the efforts of some women to obtain birth control, the available means were hard to find, expensive, and often physically treacherous. Women in China drank mercury or lead to prevent pregnancies, a procedure that often resulted in sterility or death. Without proper funding and research, the quality of the medicine was subpar. Unwanted pregnancies (in women without financial means or in otherwise difficult circumstances) resulted in illegal abortions that were unsafe, dangerous, and sometimes even fatal.

These conditions often forced women to view marriage, love, and sex as fearful obligations. Jobs were hard to come by and challenging to keep, as pregnancies were impossible to predict. Employees were reluctant to give jobs to women who might have to leave at any moment. For most women, education, travel, and pursuit of strictly personal goals were not an option. Unless they were fortunate in their partners, or chose a life of chastity, women lived lives driven by pregnancy.

Changes were finally instituted as a result of birth control pioneers and the sexual revolution that followed. In 1915, author Marie Stopes published *Married Love*, which argued that women had the right to enjoy sex in marriage; in 1921, Stopes later opened one of the first family planning clinics. Margaret Sanger, a nurse from upstate New York, set out on a crusade to find a “magic pill,” one that would free women from control by their bodies and give them the power to make their own contraceptive decisions. Sanger’s goal was to achieve the widespread and convenient distribution of the birth control pill.

Although such a pill was produced in 1951, its unsettled legal and moral status interfered for years with its dissemination. Ultimately, the pill inspired a revolution in social relations and in family planning: it changed how women viewed their bodies and their opportunities. The sexual revolution of the 1960s, often attributed to the proliferations of the pill, conferred newfound power on millions of women. Sex and love were viewed in new ways; the pursuit of

pleasure took a priority in the lives of many women. Beyond changes in sexual behavior, with their newfound autonomy, women began viewing their opportunities more broadly. Title IX, signed into law in 1972, ended discrimination in education, opening admissions to colleges, law and medical schools to women.

While the positive benefits of the pill were unparalleled, new issues emerged as a result of its production. Religious advocates blamed the pill for promiscuity and a decline in marriage rates on the pill. Minority populations felt that birth control might be used as a means for population control rather than as providing life options. Controversies continue to this day. Still, the benefits of the pill are patent: birth control placed women on an equal playing field with men.

#39 Clothing and Fashion: From Necessity to Personal Statement

Clothing has always played an important role in human life. From the earliest times, people have found it important to cover themselves with plant, animal, or mineral elements. When subsistence is the priority, the nature and design of clothing is not important; but once individuals have attained a level of prosperity, the choices that they make in terms of dress matter to themselves and to others. Initially a necessity for most, clothing evolved into a passion, a personal statement, the declaration of solidarity with a group, or even a form of artistic display.

Clothing depends on the availability of materials. In Ancient Rome and Greece, clothing was primarily made out of linen for comfort and convenience. Clothing signified power or the lack thereof; to announce their status, senators in Ancient Rome wore togas decorated with purple stripes. Further, those with the means often wore garments of silk, both to separate themselves socially from others and because it was more comfortable. The impoverished economic environment of the Middle Ages saw people wearing simple tunics. Those not afflicted with poverty and illness wore slightly more elaborate articles of clothing, but garments were subtle and understated for the most part. When so much time was spent grappling with illness and poverty, focus on fashion was minimal except among the nobility and the higher clergy.

With the greater affluence of the sixteenth and seventeenth centuries, clothing gained importance as a symbol of status as well as a form of expression. Ruffled sleeves, hats, furs, and dyed fabrics in vibrant colors became popular. Choice in clothing became significant, as women and men saw fashion as way to express their personalities. Further, comfort became a factor for many, as practical undergarments were developed for men and women, and a variety of softer fabrics, such as cottons, were incorporated into clothing design. As the variety of clothing options increased, so did the importance of fashion. In the nineteenth and twentieth centuries, women used fashion to break down gender roles, wearing pants, vests, and comfortable shoes; they abandoned confining corsets and undergarments in favor of comfort and freedom. Men and women donned certain styles to declare their solidarity with political or religious groups, or simply to express their feelings.

Today, fashion is a multi-billion dollar industry, spanning the Internet, stores, magazines, airline terminals and airplane aisles. Brands are identifiable, and their names are sometimes an explicit signature of the garment. Clothing gives people pleasure while allowing them to fulfill a basic need. Fashion can signify a certain job or occasion; for instance, a suit conveys power and formality, uniforms express a particular line of work or educational institution, and jeans relay a relaxed, informal look. Fashion provides careers and lifestyles for designers, models, stores, and textile workers, impacting what is sold and worn by the public. Clothing serves as a sign of what is important to a person, be it comfort, durability, high fashion, or group solidarity.

#40 Environmentalism: How We Impact the World, and How the World Impacts our Lives

Awareness of the natural environment and our role in its preservation is not new. Historians record many examples of individuals, groups and governments working to preserve and sustain their surroundings. Indeed concern about the environment may date back to prehistoric and biblical times: individuals needed to count on crops each year and as a result employed techniques such as crop rotation and irrigation. What was once local and optional has now become an obligation if the planet as we know it is to survive; our individual decisions about consumption and waste disposal impact the quality of everyone's life in the period ahead..

Of course, awareness about the environment has never existed within a vacuum. At the same time that individuals espoused values to preserve nature, life in all its messiness continued: political unrest, religious upheaval, social movements and scientific innovation, each ushered in unexpected as well as hoped for consequences. The industrial revolution of the mid 19th century brought tremendous technological innovation, but also engendered overcrowding in cities, typhoid and cholera epidemics, and smog. As a result, interest emerged in efforts—including the passage of legislation—to combat water and air pollution and to preserve wilderness areas. In this context in 1854, Henry David Thoreau published *Walden, or A Life in the Woods*. An essential text in the transcendentalist movement, this essay praises self-reliance and a comfortable acceptance of the natural world.

By the 1960s and 1970s, worries about the environment begin to occupy a more central role on the world's political stage. Rachel Carson's *Silent Spring* was a cardinal text, bringing threats to the environment to the attention of a worldwide audience. Concerned about quality of the world that their children will inherit, groups initiated concerted efforts of preservation and conservation. Spurring this movement were incidents offering evidence of pollution and carelessness: a toxic river in Ohio catches fire, nuclear power safety comes to the forefront with a major nuclear power plant accident (Three Mile Island, in the US), 750 people die in London's smog, a horrible chemical explosion in Italy kills hundreds of children.

At about the same time, human beings began to explore outer space. For the first time, humans could see the earth from beyond its borders, and this perspective inexorably affected our thinking. When environmentalists point out that we have “just one earth,” and remind us of our duty to protect it, an actual image embodies this ideal. Former Vice President Al Gore's prize-winning documentary, *An Inconvenient Truth*, though not without controversy, legitimized a concern about global warming; for his efforts on behalf of climate protection, Gore received the Nobel Peace Prize. Air quality, water quality, sustainability, environmental impact: these terms are now common parlance and part of how we understand ourselves in the physical, natural and social worlds.

#41 Mobile Phone: Enabling Freedom and Connection

One of the most monumental inventions of recent decades is the personal wireless communication device, known as the “mobile phone.” Fashioned in 1973 by Martin Cooper, this device has evolved through many iterations of shrinking size, less weight, and increasingly sleek, and often fanciful design. Most handheld phones now weigh less than 3 ounces and have many more functions than just voice access. “Smart Phones” or handheld personal devices include access to the Internet, games, calendars, music, videos, and many other “applications”. In 2009, Apple reported that 500 million “apps” had been downloaded from the Internet, from various handheld devices, such as the iPhone, Droid, or Blackberry.

Cooper’s original intent for a mobile phone was freedom—allowing individuals to be at any location in the world and still be connected to others. Rather than being “tied down” to a car (even though it is mobile), an office, or a home, individuals can walk anywhere and while remaining in touch with others. In fact, today, there are more mobile phone users than wireline phone subscribers in the world. Even in Kenya, a developing country of Africa, the number of mobile phones has grown from one million to 6.5 million in the last five years (the number of landlines is approximately 300,000).

The mobile phone has influenced quality of life—specifically the social, political, and economic climate of many countries in which people live. Mobile phone applications enable people to leave a message, send money, take a picture and text (especially if prepaid time for talking has been exhausted). Perhaps unanticipated, these devices have the power to connect political activists and to impact the consciousness and even the activism of disadvantaged populations. In 2007, in the town of Kibera “Africa’s biggest slum with about 800,000 people living in streets that are effectively composed of sewage and old shoes,”¹⁰ such activism crystallized; individuals banded together to fight evictions by sitting in front of the bulldozers about to take over their land. Mobile phones are considered to have had significant roles in a number of political revolutions—successful and thwarted—in the Middle East and in the former Soviet Union. A community organizer commented on the effect of mobile phones, “Now that we have information we don’t have to be dependent on patronage of the politicians—we can question them and be more independent.”¹¹

Though Martin Cooper still believes they are in their “infancy” nearly four decades years after their development, the mobile phone already had remarkable impact on the ways in which people around the planet lead their daily lives.

¹⁰ <http://news.bbc.co.uk/2/hi/technology/6242305.stm>

¹¹ <http://news.bbc.co.uk/2/hi/technology/6242305.stm>

#42 The World Wide Web: Information at our Fingertips

Nowadays individuals turn to the World Wide Web as a resource for almost everything—information about current events, informal research about products, events, and experiences, and connections with other individuals, known or unknown, near or far. The World Wide Web (“the web”) was launched in 1991, as a public service on the Internet. Sir Tim Berners-Lee, credited with creating the web, explains the purpose of the invention, “Well, I found it frustrating that...there was different information on different computers, but you had to log on to different computers to get at it. Also, sometimes you had to learn a different program on each computer. So finding out how things worked was really difficult. Often it was just easier to go and ask people when they were having coffee.”¹²

Originally founded as a system of linked documents (or “pages”) containing texts, videos, and images, the web is as much an experience as it is a resource for information. Over the past twenty years, the web has increased in size and scope, and is now one of the most visited venues on the planet. Courtesy of the web, such once routine daily activities like traveling to the library or the bookstore, picking up the telephone and talking with someone, or writing a note by hand to send through the postal service, seem antiquated methods of gathering information or networking with others. In December 2009, the web consisted of an estimated 234 million different sites, and in that year alone, 47 million sites had been added. Moreover, venues to connect with others globally—social networking sites such as Facebook, Twitter, My Space, and Google Chat—have grown in recent years. In North America, for example, approximately 56% of the population is currently on Facebook (which is nearly three quarters of the population who use the Internet). Through these sites, individuals meet and connect on the web for the first time, socialize with friends and new acquaintances, and even mourn the loss of family and friends through the use of online “guest books.”

Important questions have arisen with respect to the web and the amount of time people spend on it: is the time well-spent or frittered away in “surfing” without a purpose; what is the reliability of information posted; what is the nature, depth, and durability of relationships formed through cyberspace? Pundits ponder whether too much time on the web actually harms brain development and changes creative minds into something less. Interestingly, in a recent survey in the United States of one thousand individuals, most individuals report a preference for more traditional ways of getting things done—they choose to read tangible books and write personal notes with a pen and paper. Over time, as more sites and applications develop on the web, we will continue to monitor how the web gets used and to what extent its resources contribute to meaningful experiences. Still, whatever its possible problems, almost no one hankers for a pre-web era.

¹² <http://www.w3.org/People/Berners-Lee/Kids.html>

#43 Food and Food Movements: What, When, and How We Eat

Food is necessary for life. The earliest humans centered their lives around the search for food; rituals highlighted prayer for fertile soil and fruitful hunting expeditions. For much of history, individuals spent most of their working hours hunting, fishing, gathering, planting or harvesting crops; when they could produce more food than they needed personally, they bartered food for other necessities, or, if they were fortunate, for luxuries. Today, food has also developed into a means of self-expression. Food is a passion, a hobby, and, for many, a profession. Today, our approach to food reflects our lifestyles and values, including a concern on the part of many with the ethics of what we consume.

Food movements arise for many reasons, including a concern with the environment and sustainability, health issues, or the desire for new or better tastes. Many movements focus on the quality of ingredients and the care with which they are prepared in order to produce a pleasurable eating experience. Today, busy schedules, demanding work hours, and a subsequent lack of time interfere with regular family meals. In 1986, in response to fast food chains, like McDonald's or Burger King, the "slow food movement" started in Italy. This movement, which has since spread to over 100 countries, signifies heightened appreciation for the steps involved in preparing, eating, and savoring food thoroughly and thoughtfully. The debate over a fast food culture has also played out in a renewed focus on eating together and the significance of the family meal. Attention is now being given to the importance of meal time in terms of eating quality food, fostering civility in children, and engendering closeness within family.

Through the years, science has also played a part in food production as farmers strive to find the most efficient and productive ways to grow crops. The quest for aesthetically configured fruits and vegetables has inspired techniques such as genetic engineering and hormone treatments. In response to—and in suspicion of—genetic enhancements in food and animals, movements such as organic food, local food, vegetarianism and veganism have become popular. These movements reflect concern for animal rights, the impact on our health of consuming animal productions, and the possible hazards of consuming hormones and other introduced chemicals.

For many in the world, food shortage is also a pressing issue. Global initiatives focusing on sustainable farming and proper nutrition are essential if we are to feed the hungry properly. Surprisingly often, the problem is not the production of sufficient food per se, but rather the political will and means to bring the food to those in need. Once adequate quantities of food are available, a focus on the quality of the food, as well as the culinary experience, will become an option for all human beings.

#44 Time Well Spent: The Value of Meaningful Experiences with Others

Throughout history, time spent with family and friends has been highly valued. Worldwide, people find joy and pleasure in being with loved ones and engaging in a range of experiences together. Time with family and friends is meaningful in itself, enabling gossip, bonding, and events ranging from celebration to mourning; indeed, the specific activity is often secondary to the company kept. Today, perhaps more than ever, busy schedules, dispersed residencies, and hectic lives make this type of experience even more precious.

All family and friendship groups have their own traditions and preferred activities. The experiences may vary depending on culture, location, season, and available technology. While shopping may be a pleasurable experience for one family, cooking an elaborate meal is equally enjoyable for another. Playing games, dancing, walking or hiking can be very meaningful experiences, as they combine physical release with the joy of being together. Spending time with elderly relatives and young children is another cherished activity, allowing for closeness across generations. Traveling together, going to artistic or sporting events, or simply spending time with relatives are experiences that people worldwide highly value.

Along with sharing experiences with family and friends, the act of giving back through volunteer work and philanthropy can also provide a sense of fulfillment. People of all ages and backgrounds find meaning in providing community services. Volunteer efforts such as helping out at a homeless shelter, cleaning a city park, or offering assistance in a local school bring people together in meaningful service.

There is no single standard for judging the quality of the time we spend with one another. Unlike many endeavors, time with friends and family can be defined in multiple ways and may be considered successful simply because we are in one another's company. Concepts of quality time together have changed with advances in technology. Computers, iPads, and video games provide enjoyable experiences for people and offer a myriad of options for what we do with our time together. Perhaps surprisingly, many individuals feel connected even when they are simply seated next to one another, manipulating their own digital devices. Innovations such as Skype, face-to-face time on cell phones, and video chatting have made it possible to spend time together from the far reaches of a continent or even across an ocean.

#45 Time Well Spent: Challenging and “Flow” Experiences

Becoming absorbed in work or in a hobby can be an enjoyable experience. As proposed by psychologist Mihaly Csikszentmihalyi, an experience of ‘flow’, occurs when one becomes so deeply immersed in a pursuit that one loses track of time, space, and the ambient surrounding. The combination of challenge and skill required to perform certain intricate tasks or accomplish difficult feats become rewarding to individuals. The positive benefits of flow, including heightened motivation, sustained engagement, clear-headedness, and increased capability, make such experiences valuable and sought after in both professional and personal endeavors.

Most of us spend much of our time engaged in work. While not all persons experience flow at their job, most of us hope to find a career where we can be both challenged and engaged by the work being done. Those fortunate enough to enjoy their jobs reap the benefits, feeling motivated and fulfilled. Once one becomes more than superficially engaged in an activity, there is motivation to do the activity well and to challenge oneself continually such motivation can be enthralling. By contrast, many tasks during the day are often necessary, but frequently not enjoyable, as they offer little challenge and yield few skills. These are not occasions for flow.

Outside of work, people find value in personal experiences in which they can find a physical or mental challenge, such as running a marathon or playing chess. These activities provide participants with the opportunity to perform at their best and work towards personal goals. Rock climbing, for instance, can become engrossing: it offers a climber the physical challenge of climbing and the mental focus on technique and precision in form, keeping the climber focused on the present with a clear goal in mind. Strategic games also offer high levels of engagement, as they often produce a full immersion in the moment, with a focus on tactics and moves needed to win. Chess players can sit for hours pondering an evenly matched pair of positions, oblivious to anything but the game. The physical and mental prowess required to perform well at such activities allow participants to fill their time purposefully and enjoyably..

One of the hallmarks about such “peak experiences” is that they are ever evolving; one’s skill is enhanced, the challenge is heightened, learning occurs, and the cycle can continue indefinitely, indeed, over the course of a lifetime. The motivated learner can continue to find new meaning and fulfillment from the activity; and the expert may also be able to share learning and pleasure with less experienced individuals, inviting them to institute their own cycle of developing skills and meeting challenges. A special blessing of such ‘time well spent’ is that it is not exclusive in any sense; all who are willing to apply themselves have the opportunity to pursue experiences of flow.

Conclusion

The selections that we have gathered here are just that. Without question, we could add to our general categories (for example, Manmade Environments, Purebred Species, Modern Art) or alter specific examples within each category (other modes of transportation, forms of communication, physical or artistic activities). Our goal has been to be illustrative, not exhaustive—suggestive, not comprehensive. We wanted to put forth compelling examples of human potential across a number of spheres. We hope that readers—be they scholars, students, or citizens—will be motivated to think of additional categories or of equally compelling instances within the categories. And we hope that readers will discuss and debate the particular items described and illustrated here.

In putting forth these instances of quality, we have deliberately accentuated the positive. That is, we have described how various inventions, tools, discoveries; potentials can be perfected and put to positive uses. It is therefore important to indicate that quality can, and often is, a two-edged sort. For example, many efforts to enhance quality have had as their goals victory in warfare, or other forms of domination or destruction. Indeed, nearly every example of quality can be distorted, perverted, put to destructive ends. A knife can be used to whittle a beautiful soap sculpture but it can also be employed to stab a stranger. A magnificent building can be constructed to display fine art or to protect a tyrant. Drugs can cure disease but also create addicts. Automobiles accord freedom of movement to millions of people but can also pollute the atmosphere and, if not driven with caution, can maim or kill others. Cities provide opportunities for employment and a wealth of cultural activities but they can also be alienating environments and can breed crime or despair. Large scale bureaucracies can provide services for millions of persons but they can also legitimate prejudice or dull the work ethic. Even products of the mind—artistic objects, works of philosophy—can uplift the spirit or engender violence, hatred, mayhem.

The relation between quality and quantity also merits mention. Often and appropriately, quality is contrasted to quantity. The emphasis falls on the care taken by skilled artisans to produce wondrous works, and not on the speed with which objects are rendered or the number of objects produced in an hour or by the end of the month. Yet in our contemporary, democratically oriented world, quantity is important as well. Books may not be as well illuminated or long lasting as they were hundreds of years ago, but they are available to millions of people in paperback or digitally. Transport by airplane may not be the magnificent adventure that it was fifty years ago but millions of individuals can now traverse their country or the world at relatively low cost. We value quality and properly so, but we should not do so at the expense of millions of people who can benefit from objects or experiences that may be less magnificent but far more accessible.

Another aspect of the contemporary world merits mention. In earlier eras, most of the concern with respect to quality has focused on objects that are rare—be they beautiful golden earrings or magnificent Gothic cathedrals. In our fast-paced, highly demanding world, there is increasing attention to the way in which each hour, indeed each minute, is spent. Our own studies call attention to the premium placed on 'time well spent'—always treasured but perhaps never as much as in the opening years of the 21st century.

Some judgments of quality prove evanescent; others stand the test of time. The English Romantic poets wrestled with this conundrum. In Oxymandias, Percy Bysshe Shelley described a traveler who encounters the crumpled remains of a once massive sculptural tribute to a narcissistic leader:

And on the pedestal these words appear:
"My name is Oxymandias, king of kings:
Look at my works, ye Mighty, and despair!"
Nothing beside remains. Round the decay
Of that colossal wreck, boundless and bare
The long and level sands stretch far away.

His friend and sometimes poetic rival John Keats celebrated the lasting value of certain works in his Ode on a Grecian Urn:

When old age shall this generation waste,
Thou shalt remain, in midst of other woe
Than ours, a friend to man, to whom thou say'st
"Beauty is truth, truth beauty:" — that is all
Ye know on earth, and all ye need to know.

In the end, quality per se is not enough. We must be ever mindful of the human purposes, the human values, the human goals that lead to productions of quality and we must be equally cognizant of the ends to which quality entities are put. To coin a phrase, we need to seek and to cherish "Quality toward Good Ends." The examples collected here represent instances of quality toward good ends, but such good ends are not reached by accident. They are reached because human beings want them to be reached, work to achieve them, and are willing to correct course as often as needed. They strive to be good workers, to carry out good work, and to achieve good ends.

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