

1.

You may have noticed that people differ in the schemas they tend to use when evaluating others. College professors are often concerned with whether someone is smart, sales managers with whether someone is persuasive, and those involved in the entertainment business with whether someone has charisma. As these examples illustrate, the role of the evaluator or the context in which a target person is encountered often influences which traits or schemas are used. But sometimes the schema is simply determined by habit: if a person uses a particular schema frequently, it may become chronically accessible and therefore likely to be used still more frequently in the future. A frequently activated schema functions much like a recently activated one: its heightened accessibility increases the likelihood that it will be applied to understanding a new stimulus.

2.

Not everyone comes to see the game. For some, the contest merely provides the setting and opportunities for the expression of other motives. The social contact provided by the crowd itself suggests a reason for people to attend. This very point was elaborated by William McDougall in a book published in 1908, in which he developed his case for the existence of a gregarious instinct in humans. The question he posed at the turn of the century certainly argues convincingly for the view that we are social creatures. McDougall asks his readers, "What proportion of the ten thousand witnesses of a football match would stand for an hour or more in the wind and rain, if each man were isolated from the rest of the crowd and saw only the players?" We would guess very few in 1908, fewer today.

\*gregarious 남과 어울리기 좋아하는  
\*\*tautology 유의어 반복

3

There is a widespread belief that creativity is best served through inner peace, stillness, and calmness. One of my colleagues was convinced that her own creative writing was best when she had no distractions, quietly sipping tea in a peaceful setting. However, after three months of such languid writing days, she produced nothing that she was proud of. Shortly thereafter, her first baby was born and her schedule went from long, open, peaceful, unstructured days to tightly orchestrated, minute-by-minute slots, punctuated by extreme activity. The result? She became prolifically productive. In her words, she was "wired." The way she put it to me was, "I have ninety minutes when Sam is napping, and I run to the computer and write like crazy. I'm totally focused." Turns out, my colleague is onto something. In fact, it is better to be aroused when attempting to think creatively.

\*languid 나른한 \*\*punctuate 간간이 끼어들다  
\*\*\*prolifically 다작 면에서

4

During a particularly trying time early in my sales career, a sales manager gave me a poster that read, "If it is to be, it is up to me." I realized within that moment that if any changes or improvements were going to occur in my outside world, they needed to begin within my inside world. In life, all meaningful or macrocosmic change within society begins on a microcosmic level — that's you and me. You cannot authoritatively impose effective change upon any society; rather, it must be a choice that is felt deep within the consciousness of its inhabitants. Collectively, society's individuals must band together and say with one voice, "We're mad as hell and we're not gonna take it any more." For this to occur, however, one person must be willing to take the reins of change, with all of the risk those reins entail, and with an iron resolve, lead the charge of effective change.

\*rein 통제권, 고삐

5

According to Greek mythology, the Oracle at Delphi was consulted to gauge the risk of waging a war. In modern times, the term Delphi refers to a group survey technique for combining the opinions of several people to develop a collective judgment. The technique comprises a series of structured questions and feedback reports. Each respondent is given a series of questions (e.g., what are the five most significant risks in this project?), to which he writes his opinions and reasons. The opinions of everyone surveyed are summarized in a report and returned to the respondents, who then have the opportunity to modify their opinions. Because the written responses are kept anonymous, no one feels pressured to conform to anyone else's opinion. If people change their opinions, they must explain the reasons why; if they don't, they must also explain why. The process continues until the group reaches a collective opinion. Studies have proven the technique to be an effective way of reaching consensus.

\*oracle 신탁(神託), 신의 말씀

6

What is the basic idea of sociology? It is this: *Social structure pushes people around, influences their careers, and even affects how they think.* My Tougaloo College students readily understood that social structure pushed people around. Not one of their parents was an architect, for example, because no school in the Deep South in their parents' generation both taught architecture and admitted African Americans. So my Tougaloo students knew how social structure might influence careers. Then, too, neighbors of theirs — white children — had been their friends when they were four and five years old, but by the time they were fourteen and fifteen a barrier had gone up between them. My black undergraduates could see that this racial bias was hardly innate; rather, it showed that social structure affects how people think. Hence they were open to the sociological perspective.

7

According to the scholars of the Indian traditions (Vedas), the origin of religion was to be sought in the impressions that natural phenomena made upon man. The mythological figures were thought to be personifications of natural objects. The impressive manifestations of nature stimulated the personifying fantasy of man. The primary stage of religion was not due to the religious nature of man, or to the 'need of the human heart', as O. Müller expressed it in his book, but to man's elementary capability of seeing personal figures in the impersonal phenomena of his surroundings. What finally led to the formation of religion was, thus, the elaboration of a nature mythology, and the veneration of the respective figures. The beginning of religion was the worship of many natural objects, with a predominance of such phenomena as the sun, the sky, thunderstorms, lightning, rain, and fire.

\*veneration 숭배

8

A well-functioning democracy requires a media system that provides diverse sources of information and encourages civic participation. The government once considered the airwaves such an integral part of our democracy that politicians decided the public should own and control them. It is time for the public to reclaim the responsibility of producing quality media from the corporate conglomerates. The first step is to break up the concentration of media power. Let's give control to a greater number of smaller companies that could legitimately compete with a broader range of information. Also, we must create and maintain a noncommercial public media system as well as independent alternative media that exist outside the control of transnational corporations and advertisers. The rise of independent political blogs, and that of alternative podcasts, radio networks and television channels are all examples of citizens rising up to take back control of our media.

\*airwaves 방송 전파 \*\*conglomerate 대기업

9

Consider the question often asked by scientists, including even those who are well disposed toward animals, as to whether the hen suffers from what she has never known. The Oxford researcher Marian Dawkins conducted experiments to determine what hens felt about their homes. Somewhat to her surprise, she found that hens who had been confined to battery cages, cages no larger than a sheet of newspaper, when given the choice between a small outside run with grass and the cages they had known all their lives, chose to stay in the cages. And fowl expert Valerie Porter points out that chickens taken from a battery cage "will be in a considerable state of what you might call cultural shock if they are deprived of the only type of environment they have ever known. In fact, they will curl up in a corner in a state of terrified agoraphobia and it will take a great deal of time and patient understanding to rehabilitate them to real life."

\*battery cage (좁좁히 이어진) 닭장  
\*\*agoraphobia 광장공포증

10

The cyclical nature of success and failure has been well established in the field of modern bridge design and engineering, in which experience spans about two centuries. Unfortunately, the lessons learned from failures are too often forgotten in the course of the renewed period of success that takes place in the context of technological advance. This masks the underlying fact that the design process now is fundamentally the same as the design process thirty, three hundred, even three thousand years ago. The creative and inherently human process of design, upon which all technological development depends, is in effect timeless. What this means, in part, is that the same cognitive mistakes that were made three thousand, three hundred, or thirty years ago can be made again today, and can be expected to be made indefinitely into the future. Failures are part of the technological condition.

\*timeless 시대를 초월하는

11

The popular press deems reshoring to be "bringing manufacturing back home..." from a current location that is not home. The term is agnostic as to whether the manufacturing being brought home occurred in a wholly owned facility in an offshore location or in the factory of an offshore supplier. GE, for example, reshored its appliance manufacturing from its production facility in China to the U.S. in its own plant to meet the U.S. demand, whereas the U.S.-based Vaniman Manufacturing decided to no longer buy sheet metal fabrication from an overseas supplier and to instead source from a local supplier to meet demand in the U.S. Both would be considered reshoring (more precisely, reshoring back to the U.S.). Reshoring is fundamentally concerned with where manufacturing activities are to be performed, independent of who is performing the manufacturing activities in question — a location decision only, as opposed to a decision regarding location and ownership.

\*agnostic 관련이 없는

12

Mark Leary and his colleagues led participants to believe that they were to perform a group task. Before the task, each participant was asked to write an essay about "what it means to be me" and "the kind of person I would most like to be." The experimenter then gave each person's essay to other participants (in another location) who were asked to indicate who they would like to work with in the group setting. The experimenter ignored the participants' actual preferences and randomly assigned some participants to a condition in which they had supposedly been passed over by the others and had to work alone, and other participants to a condition in which they were in high demand by others and worked with a group. Participants in the work-alone condition, who believed they had been excluded, reported lower levels of self-esteem than those involved by the group. Our momentary feelings of self-worth strongly depend on the extent to which others approve of us and include us.

1

Movies and cartoons sometimes portray scientists as loners in white lab coats, working in isolated labs. In reality, science is an intensely social activity. Most scientists work in teams, which often include both graduate and undergraduate students. And to succeed in science, it helps to be a good communicator. Research results have no impact until shared with a community of peers through seminars, publications, and websites. And, in fact, research papers aren't published until they are vetted by colleagues in what is called the "peer review" process. Most of the examples of scientific inquiry described in science textbooks for college students, for instance, have all been published in peer-reviewed journals.

2

The immune system is the body's defense against foreign invaders such as bacteria. The immune system protects and preserves the body's integrity, and it does this by developing antibodies to attack hostile invaders. We know that the immune system begins to decline after adolescence, and the weakening of immune function is linked to age-related vulnerability. According to the autoimmune theory of aging, the system may eventually become defective and no longer distinguish the body's own tissues from foreign tissues. The body may then begin to attack itself, as suggested by the rising incidence of autoimmune diseases with advancing age.

3

When a painter is working for a patron, as Leonardo da Vinci did for the Medici, there can be emotional communication resulting from the artist's intention to produce something that the patron will appreciate and enjoy. Even Vincent van Gogh, who was isolated and sold few paintings in his life, cared about the reactions of his brother to the paintings that he produced. Some artists often take pains concerning the framing and presentation of their work for the benefit of the viewers of their art, such as when Mark Rothko was highly particular about the lighting of his paintings. So painting is a social process involving the communication of emotional judgments of the artist to the people who view it. Painters cannot expect viewers to appreciate their work with exactly the same perceptions and emotions that went into their creation, but they can hope to generate some approximation of these.

4

Salt was historically so costly and important in Europe that its consumption was linked to social status. In the medieval world, with its rigid hierarchy, the way in which people dined and the food that they ate reflected their position in society. Royalty and nobility sat at the high table, positioned on a dais, while their social inferiors ate at lower tables below them. Among the privileges granted to the elite was access to salt, placed in a container on the high table. This clear expression of social divide is reflected in the phrases "above the salt," referring to someone of high rank and "below the salt," which means someone of lower rank or less socially acceptable.

5.

If you stop to think about all of the tiny parts that make up any one thing, you could be thinking about it for quite some time. There are almost an infinite number of things that influence and impact any larger thing, right down to atoms and smaller molecules. A computer, for example, looks like a big hunk of metal and glass, but if you look closer, moving your way down from the big things to the tiniest parts that make the computer up, you start to see how a computer is really many smaller things combined to make something bigger. A computer isn't just a computer: It's metal, glass and plastic, screws, springs, wires, copper, ink, electricity, and so much more. How those small parts come together to make the bigger parts is what matters, but how often do we take time to think about that fact?

6.

Taub and his co-workers have already found strong evidence that the brain can be healed by its own plasticity. Amazingly, some people who have lost the use of an arm through a stroke have been trained to use it again by having the good arm restrained and being forced to use the apparently dead one, a technique called 'constraint-induced (CI) movement therapy'. Even though the part of the brain that controlled the arm was damaged, the CI movement therapy forced the brain to open up new areas in order to move the dead limb. Similar results have been produced with speech impairment and even dyslexia. Although this research is still in its early days, Michael Merzenich of the University of California, San Francisco, believes the brain's plasticity may really enable us to protect ourselves against age decline.

7.

When you watch a documentary on a small standard (4x3) video screen and then see it on an equally small wide-screen (16x9) receiver, you probably notice relatively little energy change. When you switch from the small screen to a large HDTV screen, however, the energy change is readily apparent. This is why some movies that emphasize landscape from actual landscapes to spaceships or battle scenes must be seen on the large screen to feel the total impact. Even if you use proper conversion methods for aspect ratios, squeezing such large images into the small video screen reduces not only image size but also, if not especially, event energy. Close-ups, inductive sequencing, and a dense audio track help generate some aesthetic energy on the small video screen, but they cannot compete with the large movie images and high-volume surround sound.

8.

Revegetation techniques are put in place with an understanding of the resultant effects on wildlife. For instance, the planting of tree lines and woodland areas within roadside landscape may naturally force birds to fly higher above roads when crossing between forest edges, as was shown in the Netherlands. Verges should be widened and landscape planting on bends or curves on a road should be set back, to improve visibility and to discourage crossings by wildlife. In contrast, along straight sections of road carriageway, vegetative cover should extend as close to the road as permitted by road construction and safety standards. Landscaping of centre medians, junctions, roundabouts or interchanges should be sensitive to wildlife. Berry-producing plants should not be selected as they may prove attractive yet fatal to wildlife due to the close proximity of traffic.

1

A diverse garden will become a habitat for a variety of bird species. But if all the birds were to sing at the same time, each one's melody would be drowned out in the cacophony of voices. In order for each singer to be adequately appreciated by his rivals or his sweetheart, each species focuses on a specific time in the morning. Or rather, not a time, but a certain position of the sun. These are relative to sunrise, a precisely definable event. Unfortunately, it changes constantly, as throughout spring, the sunrise takes place a little earlier each day, until the summer solstice on June 21, when it starts getting later again. So, bird song is perhaps not ideal as a genuine replacement for your watch, although each species tends to observe its relative time slot, day by day, with astonishing accuracy.

2

With reference to the variable of intensity, it is almost stating the obvious to say that bright lights or loud sounds can attract our attention. We have all been exposed to countless examples of commercial advertisements that seem to be based solely upon this premise. One unusual example of the use of intensity in advertising contexts is the practice of time-compressed speech in radio commercials. The experiment conducted by LaBarbera and MacLachlan exposed people to five radio commercials that were either normal or time-compressed on the order of 130%. These time-compressed commercials were not "sped up" by making the tape run faster; that would also increase the frequency of the auditory signal, and make the announcer sound like a high-pitched Mickey Mouse. Rather, the time-compression technique involves the shortening of pauses between words, and the reduction of the length of vowel sounds. This results in a message that runs more quickly, without changing the pitch of the announcer's voice. These researchers found that the time-compressed advertisements elicited more interest and better recall than the normal ads.

3

Recycling means recovery and reprocessing of waste materials for use in new products. Recycled waste can be substituted for raw materials, reducing the quantities of wastes for disposal as well as potential pollution of air, water and land resulting from mineral extraction and waste disposal. However, recycling has certain limitations when applied to radioactive materials. Due to their inherent radiation, radionuclides are much more difficult to recover from contaminated materials. Recovery usually presumes concentration of species into a smaller volume even though this may result in more dangerous materials. Waste radionuclides recovered from contaminated materials are difficult to recycle in new devices or compounds. Hence, even materials that contain large amounts of radioactive constituents (e.g. sealed radioactive sources as used in industry, medicine and research) often are immobilized (conditioned) and safely stored and disposed of rather than recycled.

4

Glass affords transparency. At the same time, its physical structure blocks the passage of most physical objects. As a result, glass affords seeing through, but not the passage of air or most physical objects (atomic particles can pass through glass). The blockage of passage can be considered an anti-affordance — the prevention of interaction. To be effective, affordances and anti-affordances have to be discoverable — perceivable. This poses a difficulty with glass. The reason we like glass is its relative invisibility, but this aspect, so useful in the normal window, also hides its anti-affordance property of blocking passage. As a result, birds often try to fly through windows. And every year, numerous people injure themselves when they walk (or run) through closed glass doors or large picture windows. If an affordance or anti-affordance cannot be perceived, some means of signaling its presence is required.

5

In cultural contexts that require polite formulas rather than honest words, language may lose almost all its communicative function, and here food often takes over the role. In formal dinners around the world, it is not usually appropriate to send the important social messages verbally. Words are bland and carefully chosen. More information about the actual social transactions going on at the dinner is transmitted by food choice and distribution. The most valued guest often gets the choicest portion, and so on down. Other aspects of the ritual may communicate even more. Everyone carefully observes who sits next to the host, who sits at the host's table, who is the first one to be greeted, who is served first, who gets the best piece of meat, or who is urged to have seconds.

6

Ritualistic behaviour designed to influence future events is not, it seems, limited to humans. B. F. Skinner's classic research into 'superstition in the pigeon', conducted at Indiana University in 1948, supports this hypothesis. Skinner described an experiment in which pigeons were placed inside a box and were presented with a small piece of food once every fifteen seconds, regardless of their behaviour. After a few minutes the birds developed various little unusual rituals, such as walking round in circles, moving their heads up and down and so on. The pigeons appeared to have concluded that their little routines were causing the release of the food even though in reality there was no relationship whatsoever. Skinner's explanation for this phenomenon was that the accidental pairing of the release of food early on in the process with whatever the bird happened to be doing was enough to reinforce that particular type of activity.

7

Within the domain of concrete entities, objects and substances have very different properties. Objects are individuated, whereas substances are nonindividuated. Thus, the two kinds of entities have fundamentally different criteria for the notion of identity or sameness. When we say that two objects are identical or the same, we are referring to two objects in their entirety and not to two distinctive parts of a single object. In contrast, when we say that two substances are identical or the same, there is no notion of wholeness. Substances are of scattered existence, and there is no such thing as whole sand, whole water, or whole clay. This portion of sand is identical to that portion of sand, as long as the two portions consist of the same physical constituents. This difference in identity or sameness between objects and substances leads to fundamentally different extension principles for determining category membership across the two ontological kinds.

8

Although the efforts to revive dying languages are admirable, the challenges facing those who would reverse the extinction process are intimidating. Not all of the extinctions are the direct result of hostility and repression from a dominant government, as was the case with American Indians throughout most of U.S. history. But where brutal repression failed to make indigenous languages and culture extinct, intense globalization since the 1980s has been more successful. The recent revolution in communications technology has provided powerful tools (through the airwaves and cyberspace) for the spread of mainstream Western culture and language. Yet, for some endangered languages, the tide is changing through the digital revolution. As Rosenberg points out, digital technology, discussion groups, software companies, and apps are lifelines for language preservation for minority and endangered language communication needs. At one time technology forced some language speakers to adopt the dominant language of their community or nation. Now, new tools create the possibility for revitalizing languages and retaining language speakers of endangered languages.

1

Several studies have shown that individuals who are ostracized, excluded, or rejected by others behave in ways that will increase their chances of eventually becoming accepted. These behaviors range from working harder in group settings, to conforming to group perceptions, or being more sensitive to information about others. For example, Williams and Sommer found that women responded to ostracism by increasing their efforts on a subsequent group task. Similarly, Williams, Cheung, and Choi observed that ostracized individuals were more likely than others to conform to the opinions of other people. Thus, these studies show that in response to social rejection, people seek to reconnect themselves with their social worlds. In addition, Gardner, Pickett, and Brewer found that individuals who experience social rejection are more likely to remember socially relevant information. Thus, belongingness needs appear to guide the processing and retention that is consistent with one's motive.

2

David Rock, author of *Your Brain at Work*, has described in fascinating detail the intricate mechanics of the brain on creativity and stress. We know, for example, that self-described happy people have more new ideas. We now know that stress decreases our cognitive resources, whereas mindfulness induces what is called a toward state in the brain, an openness to possibilities. In this condition, we feel curious, open-minded, and interested in what we are doing — all excellent qualities for thriving on the job. Neuroscience tells us that creativity and engagement are essential to making people happier. But the technological onslaught of today's world can also become highly stressful. Long hours, hard work, and high pressure are made worse by our being permanently plugged in. Though the introduction of laptop computers, high-speed Internet, mobile technology, and social media have wonderful advantages in how we connect, they also reinforce behaviors that shut down the toward state and set us on autopilot.

3

For sea squirts, a two-part life cycle provides a quite obvious advantage. Adult sea squirts live very nicely, attached to the sea bottom. All the food they need comes drifting to them in the ocean currents, and they never have to move. They have even solved the problem of getting together to mate by shooting their sperms and eggs out into the water. But then, if the young sea squirts immediately settled down to the bottom, the sea squirt colony would soon be so crowded that they would have to grow on top of each other. There would not be enough food to feed the huge crowds of sea squirts, all jammed into a small area. So instead, the tadpole-like swimming larvae of the sea squirts do not settle down immediately. They swim and drift with the ocean currents. By the time they are ready to change to adults and take up a place on the ocean bottom, they have been scattered over a wide area.

4

The halo effect causes one trait about a person to color your attitude and perceptions of all her other traits. Even stranger, the more noticeable the aspect is when you form your first impression, the more difficult it becomes to change your attitude about that aspect. So, for example, if you are bowled over by the warmth and kindness of a coworker in your first week at a new job, you'll let him get away with a host of obnoxious behaviors later on, maybe even for years. If the first year of a relationship is deeply fulfilling and life-altering, it can take a long time to notice if things turn sour later. If you like specific aspects of an individual, the halo effect causes the positive appraisal to spread to other measurements and to resist attack. Beautiful people seem more intelligent, strong people seem nobler, friendly people seem more trustworthy, and so on. When they fall short, you forgive and defend them, sometimes unconsciously.

5

Divers working at high pressures underwater usually breathe "air" that is a mixture of oxygen and helium. Helium is substituted for nitrogen in this mixture because it is less soluble than nitrogen and therefore less likely to dissolve in the bloodstream. This offers better protection against one of the major hazards of diving, called the "bends." If a diver returns to the surface too quickly after a dive, the relatively lower pressure at the surface than deep underwater causes dissolved gases to bubble out of solution in the blood. The effect is similar to the frothing in a bottle of soda water when the cap is removed. In human bodies, the gas bubbles released in this way often get trapped in the joints, causing extreme pain for the diver. This pain often makes it impossible for the diver to straighten up, which is why this condition is aptly named the bends.

6

In England in the early 1900s property owners whose land was being eroded by wave action clamored for the Government to take preventive action. Their island was disappearing beneath the sea! They argued so loudly that a Royal Commission was appointed to study the matter. After making a careful survey, the commission reported that over a period of thirty-five years England and Wales lost 4,692 acres and gained 35,444 acres, giving a net gain of nearly nine hundred acres a year. This finding seemed to prove that people whose land disappeared complained more loudly than those whose land was increasing. It must be admitted, however, that the land lost probably was good cliffland on the open coast which disappeared in a spectacular way, whereas the land gained was low, sandy and not particularly valuable. Non-geologists are usually not aware that the very existence of a cliff is warning that erosional processes are at work, even though the changes seem to be very slow.

7

Solid objects cohere as wholes. While their shapes can be distorted to some degree to the extent that they are elastic, in the main they accelerate or tend to move as wholes in the direction of an applied force. Bodies of liquid differ in this respect. They freely adapt their shape to a containing vessel or an immersed solid and will simply give way to a solid object moving slowly through them. If a liquid body is subject to a force it will not tend to move as a whole in the direction of that force. Rather, the applied force is converted by the liquid into an isotropic one that will urge the liquid to move in any direction open to it, unconstrained by any tendency for the liquid body to cohere. Water will tend to leak from a pipe with equal facility in any direction and not just in the direction of the weight of the head of water bearing down on it.

8

Subjectivity is an integral part of all art, and sometimes, even where it seems the least likely, one finds a comprehensive communication between the artist and the audience very difficult. For example, not just in abstract painting, but in the most straightforward painting. Just take one of the best-known paintings, the Mona Lisa, painted by Leonardo da Vinci. No one mistakes that this painting is the portrait of a woman; that much we know. However, the intriguing smile in this painting is interpreted in so many different ways, in terms of what state of the mind this smile depicts. Therefore, an audience can never be sure exactly what the artist had in mind. This holds true on all levels, and thus, perfect communication cannot occur between most artists and their audiences through their art alone.

1

Recent research has shown that trees are not as passive as we long supposed. To investigate this further, European scientists simulated attacks on small beeches and maples. Whenever a roe deer takes a bite out of the top growth of a young tree, it leaves a little saliva behind in the wound, and it soon became clear that wounded trees can clearly detect the presence of this saliva. To simulate browsing by roe deer, the researchers cut off buds or leaves and dripped roe deer saliva onto the damaged areas. What they noticed was that in response the little trees produced salicylic acid, which in turn led to an increased production of bad-tasting defensive compounds, which discouraged the roe deer from eating them. However, when the scientists simply broke off new growth without applying any saliva, all the beeches and maples produced were hormones to heal the damage as quickly as possible.

2

Historical linguists study the languages spoken today, and from them make estimates about the ancestral languages from which they descended. Where possible, linguists also work from written records on languages in earlier times. For linguistics as for genetics, we assume that present data give us the remnants of earlier communities. But the definition of "earlier community" is different in each case. For language, it is assumed that each language has one parent. In genetics a person has more and more ancestors as one goes to earlier generations, while a language has a single ancestor at each stage. The "tree model" of languages presents the range of languages descended from an ancestor, and indicates relationships with other languages descended from the same ancestor. Because of the single-ancestor characteristics of the linguistic "tree model", language gives more evidence on path of early human migration than does genetics, because it allows for fewer possibilities.

3

The more things change, the more they stay the same. One thing that has remained the same over the centuries is parental disdain for the new kind of world they see around them. This world is only new to us, and it's the only one our children know. They haven't lived long enough to see the kind of social change that has taken place in the last twenty or thirty years. For them, what they see around them is "normal," and they have nothing to compare it with until they start to learn about history. It has always been this way. Parents feel the changes in the world; kids don't. Parents often react defensively, and children do not understand what all the fuss is about. Negative parental reactions often originate in hostility toward change. Most adults tend to see their own formative years as normal and what comes afterward as a decline. The only constant is change, and parents and their children experience this in fundamentally different ways.

4

Because scientific research is so often conducted in the interests of national defense or under the sponsorship of private firms that hope to profit from applications of the findings, the norms of common ownership and publication are often suspended. Such situations have led to innumerable conflicts in scientific circles. An outstanding example is the race to publish the complete map and inventory of the human genome — all the sequences of human DNA that constitute our genes. In 2001, two rival groups raced to be the first to complete the research, one in the private sector, the Celera Genomics Corporation, led by J. Craig Venter, and the other a government-funded laboratory headed by Francis Collins. An argument raged over whether the private corporation was trying to establish patents on human genetic sequences, a violation of the norm of openness. The public laboratory had, or claimed to have, no such business interest. Eventually the competing teams compromised and issued a joint publication of the map, but the controversy and legal battles over issuing patents for genetic material have continued.

1-2

Looking for patterns works because our memories are organized in terms of what psychologists call 'schema'. A schema is a familiar pattern of relationships stored in your memory. That way they form memories so strongly linked that they are recalled more or less as a single unit. This is so powerful that it doesn't just influence your way of remembering lists, it actually affects your entire way of thinking. In one experiment, chess grandmasters and masters were tested against ordinary chess players to see how accurately they could remember the position of 20 to 25 chess pieces placed randomly on a board after glancing at the board for 5 to 10 seconds. The masters and ordinary players were pretty similar in being able to remember the places of only 6 pieces. Yet if the pieces were arranged in the form of a game(unknown to anyone), the grandmasters and masters could suddenly remember all the positions, while the ordinary players could still manage only 6. It was clear that this was not simply a memory feat — it was due to the grandmasters' and masters' ability to see the positions as a single chunk or schema. It is clear that the more you develop schema, or patterns, the better you'll remember things. And if you can reduce complex inputs to simple chunks, you'll find you can think about them much more clearly and effectively. In a general rule, if you ever find yourself forgetting anything, it is not because your brain is declining or your memory is receding. It's simply because you are not using the correct memory technique to help you store and retrieve the information.

3-4

Novelty compels both humans and animals to engage with the unfamiliar. Indeed, our strong desire for novelty has evolutionary roots, improving our survival odds by keeping us alert to both friends and threats in our environment. As new parents quickly learn, when given a choice, babies consistently look at, listen to, and play with unfamiliar things. One of my favorite moments from early parenthood was when I watched my infant son notice his hands for the first time. His discovery stands out as a metaphor for learning: His interest in what those strange, wonderful appendages could do was his first step toward controlling them. The preference for novelty is an efficient way for immature cognitive systems to process information, helping babies cope with changes to their environment before releasing their inner explorer. Interestingly, in human genetics, a preference for novelty has been linked to the migration of early humans to the far reaches of the earth. Recent studies have shown that human groups that migrated the farthest from Africa had more of the genes linked to novelty seeking. That is, the people who traveled the farthest from home may have had some biological propensity to experience mysterious new places. And yet, while we are born with a strong drive to seek novelty, this drive fades over time. As we grow older, other desires take over, like wanting more predictability. The organizations we build and join reflect this reality: paychecks at the same time each week or month, evaluations according to established processes, jobs that involve a known set of activities.

5-6

You've no doubt heard the old saying: "when the going gets tough, the tough go shopping!" That is precisely what bacteria do when they find themselves in deep trouble. They go shopping for useful genes that can help to get them out of the mess. There comes a time in the life of any organism or organization, when it has to try something completely different. In a sporting team, it has been called *throwing away the game plan*, and this is exactly what hypermutation involves. When a bacterial colony is in a critical situation — when survival is on the line — something very strange happens — the bacteria suddenly start mutating at an extraordinarily rapid rate. In so doing, they are consulting the microbial lending library, hoping that they can come up with a mutation that might get them out of their crisis. Starving *E. coli* colonies (hyper-)mutate at a rate one thousand times greater than that which would normally be the case in a well-fed colony. You can even find certain hypermutators within a normal or well-fed colony, sitting there, ready to spring into a hypermutational mode at the first sign of serious stress. As Frank T. Vertosick so humorously put it: "these hypermutators are the Van Goghs of the microbial worlds — somewhat insane, but infinitely creative".

7-8

Social sanctions vary in degree of formalization. In most stable associations there are highly formal procedures, such as ceremonies for honoring those whose services are believed to have contributed to the well-being of the membership and for the discredit or exclusion of those whose activities have been considered harmful. In our society, for example, there are courts of law and means of judging criminals which are so complex that only specialists can understand them. Some sociologists attach great importance to such highly formalized sanctions and have even defined the organized group as one in which the social structure is protected and reinforced through formal sanctions. Such norms are without doubt controls on deviant behavior, but for most people the less formal sanctions, the spontaneous displays of approval or disapproval, prove more effective. Those who are about to violate some rule are often stopped short by the show of displeasure on the part of others. Ridicule and gossip are especially effective. In some cases deviant parties may be excluded informally, even when they continue to retain membership in the group. Among the most effective of the informal sanctions is the deprivation of mutual services, the refusal of others to honor the claims of the violator's role. Since roles consist of reciprocating claims and obligations, they cannot be maintained without the cooperation of others in complementary roles. When a person speaks to a colleague, he ordinarily has a minimal claim upon him to respond in some way. Others may, however, refuse to live up to their obligation to be polite as a way of indicating their disapproval.

Cuoi was born to a poor family and he had to work at various jobs to provide for his family. One day, while gathering wood in the forest far from home, Cuoi came upon a tiger cub and picked it up. Then, he heard a frightful growl. It was the mother tiger. Cuoi threw the cub to the ground and scrambled in terror up into the branches of the nearest tree. A moment later the tigress came crashing through the underbrush and growled as she saw the body of her dead offspring. Cuoi, in his haste to escape, had thrown the cub to the ground with such force it had been killed. Then, a strange thing happened. The tigress walked to a nearby stream and gathered the leaves from a banyan tree. She chewed them into a pulp which she then applied to the head of the dead cub. Immediately the young tiger jumped to its feet and ran about as if nothing had happened. When the tigress and her cub had disappeared, Cuoi went to the miraculous banyan tree and gathered a handful of its leaves. On the way home he came upon a dead dog lying by the side of the road. Cuoi then chewed the leaves into a pulp and applied it to the dog's head. After a few minutes the animal was restored to life; it jumped to its feet. Cuoi went back to the banyan tree, uprooted it, and replanted it in his yard. He warned his mother never to dump dirty water where the tree was planted. "Otherwise," he said jokingly, "it will fly away into the sky." Cuoi's mother paid no attention to this warning and continued to dump dirty water near the tree. One day the tree began to slowly pull itself from the soil and to fly up into the sky. Returning from his chores, Cuoi noticed this and grasped its roots to keep it from flying away. But he was not heavy enough to keep the tree on the Earth. Instead, he was carried with it into the sky. After many days, Cuoi and the tree reached a strange new world — the Moon. Cuoi planted the tree there and sat down to figure out a way out of his predicament; but there was no solution. There on the Moon he has sat waiting, year in and year out, even until today.

The older man, a prominent baseball figure named Branch Rickey, suddenly changed his matter-of-fact, businesslike expression and turned on the young African-American athlete. "You're just a black man," he shouted, "so you'll never succeed in the big leagues!" The young man, stiff with hurt and surprise, clenched and unclenched his fists threateningly, but the older man moved closer and kicked him with hostility. Then it was over. The older man — the baseball-team owner — stepped back, and the two men studied each other silently. The younger man spoke: "Why do you have to say these things to me, Mr. Rickey?" Branch Rickey, owner of the Brooklyn Dodgers and respected figure in baseball, dropped the false pose he had taken, smiled, and gently touched the young man's shoulder. Moments earlier they had been discussing the possibility of a career in big-time baseball for the young African-American man, Jackie Robinson. The year was 1945, and African Americans were barred from the major leagues. Rickey had warned Robinson that he would need two things to succeed. These were the ability to play baseball with the best, and the ability to stand the massive resentment toward the first African-American player in major-league baseball. In testing Jackie's patience in the latter, Rickey had tried to demonstrate, through pretended anger, the hate Robinson would meet. "Do you think," said Rickey, referring to his dramatic and realistic portrayal of a racist, "that you can get through this kind of thing?" "I can, replied Robinson softly, "if I pray." Rickey's prediction of trouble ahead could not have been more accurate. There were boos in the stadium, constant insults, and opposing players using steel spikes to hurt him. Teammates refused even to give him the traditional handshake and cheer when crossing the plate after a home run. But Jackie endured. And after his winning the Rookie of the Year Award in 1947, fans became aware of the prayer-born patience that made him one of the great men of the

game. No one should have to qualify for sainthood in order to play baseball, but he humbled himself. Both he and Rickey were later honored by being elected into baseballs Hall of Fame.

7-9

The abbot woke up early one morning. Nothing was unusual in that. But this morning he was awakened by the sound of something moving in the nearby shrine room. That was unusual because most of his monks would normally be practicing their morning "chanting" so he went to investigate. In the darkness he saw a silhouette of a hooded figure. It was a burglar. After a few moments of silence the abbot said kindly, "What do you want, my friend? "Give me the key to the donation box," said the burglar. The abbot saw a weapon in his hand but felt no fear. He felt only compassion for the young man. "Certainly," he said, slowly handing over the key. As the thief hurriedly emptied the box of cash, the abbot noticed the robber's jacket was torn, his face pale and gaunt. "When was the last time you have eaten, dear boy?" asked the abbot. "Shut up!" barked the burglar. The abbot nicely responded, "You'll find some food in the cupboard next to the donation box. Help yourself." The thief paused a moment in confusion. He was taken aback by the abbot's consideration for his welfare. Still, he hurriedly lied his pockets with cash from the donation box and food from the cupboard. "And don't call the cops," he shouted. "Why should I call the police?" answered the abbot calmly. "Those donations are to help poor people like you, and I have freely given you the food. You have stolen nothing." A few days later, the abbot read that the burglar had been caught robbing another house. He was sentenced to ten years in jail. Just over ten years later, the same abbot awoke to the sound of someone in the shrine room. He got up to investigate and, saw the old burglar standing next to the donation box. "Remember me?" shouted the burglar. "Yes." sighed the abbot. "Here's the key." Then the burglar smiled, and said gently, "Sir, put away the key. I couldn't stop thinking about you all those long days in prison. You were the only person in my entire life who was kind to me, who actually cared about me. I have come back to steal again, but this time

I have come to take your secret of kindness and inner peace. Please, make me your disciple.

10-12

It is something of a common idea among animal behaviorists that wild animals do not tolerate disabilities, and that animals who are unfortunate enough to be born with a physical disability or fall ill rarely last very long. I am doubtful. Recent research on many species has shown that young animals born with serious disabilities are nevertheless able to live with the help of their mothers and sometimes other friends and relatives. This is particularly true of elephants but applies to many species. Indeed, animals may have no concept of "disability" in the way humans do. Inspiring in this instance is the account Kim Sturla gave of Helen, a completely tame hen who was found wandering the streets of San Francisco. She was totally blind, and dogs were attacking her when a homeless person took pity on the hen and rescued her. She was taken to the city's animal shelter, where a call was put through to Animal Place to see if they would be willing to give her a home. Helen was born with a condition called cryptophthalmos, meaning that her eyelids had never formed properly and therefore never opened. One foot was missing and one of her legs was several inches shorter than the other. Concerned on the first night that Helen might become the object of contempt from the other hens and roosters, Sturla set up a special nest in the barn. But when she opened up the door the following morning, a triumphant Helen greeted her sitting proudly on the top perch. Blind and lame, she had somehow found this spot. Far from feeling contempt for Helen's disabilities, the other birds stood in a kind of admiration for her, and she lives to this day in complete harmony with the rest of the flock, grooming her feathers, enjoying the sun, and dust-bathing with pure delight.

1

William Allingham, poet and editor, is known mainly through a small group of poems that regularly appear in anthologies of Irish verse. In his own day, however, Allingham was well known to poets such as Robert Browning, Dante Gabriel Rossetti, and Alfred Tennyson, and his work inspired later Irish poets, including W. B. Yeats and John Hewitt. He was born in Ballyshannon, County Donegal, Ireland and his first job was in the local bank, where his father was manager. In 1846, he took a post with the national excise service and spent the next twenty-four years working as a customs officer. He first visited England in 1843 and eventually settled there in 1863. He befriended the influential poet, critic, and editor, Leigh Hunt, to whom he dedicated his first book of poems in 1850. His most ambitious work was the verse novel, Laurence Bloomfield in Ireland, in which he tried to promote reform of land ownership and tenants' rights.

\*anthology 선집 \*\*excise 소비세 \*\*\*tenant  
소작인

2

The first tunnel built under the Thames was designed by Marc Isambard Brunei (1769–1849). Brunei fled the French Revolution for New York and then London, and at one point found himself in debtor's prison. While in prison, he watched a shipworm bore a hole through a piece of wood by passing the chewed-up wood pulp through its body and excreting it as it progressed. Once released, Brunei worked on his observation, and eventually constructed a huge drill with corkscrew blades that passed dug-up material down its length as it moved forward, which was used to bore a tunnel from Wapping to Rotherhithe. The tunnel took 18 years to build, and 10 men died during its construction. When it opened, it was at first targeted by thieves who would lie in wait in the shadows for unsuspecting pedestrians. The East London Railway took over the tunnel in 1869, and it now carries the East London Underground line across the river.

\*bore 파다, 뚫다 \*excrete 배설하다

3

At Greenwich in 1796, the astronomer Maskelyne dismissed Kinnebrook, his assistant, because Kinnebrook observed the times of stellar transits almost a second later than he did. Maskelyne was convinced that all through 1794 there had been no discrepancy between the two of them. Then in August, 1795, Kinnebrook was found to be recording times about half a second later than Maskelyne. His attention was called to the "error" and it would seem that he must have striven to correct it. Nevertheless, it increased during the succeeding months until, in January, 1796, it had become about eight tenths of a second. Then Maskelyne dismissed him. The error was serious, for upon such observations depended the calibration of the clock, and upon the clock depended all other observations of place and time.

\*stellar transit 별이 망원경의 시야를 통과하는 것

\*\*discrepancy 차이, 불일치 \*\*\*calibration 보정, 눈금 매기기

4

When her grandmother didn't answer right away, Kay got worried and started to say something, but before she could she watched as Teresa reached into the drawer by her bed and to Kay's astonishment, pulled out a tape recorder. What was her grandmother up to now? Where could she have gotten a tape recorder? And from the looks of it, she knew exactly how to use it. Kay had never seen her grandmother with anything like that. Teresa didn't even like using the phone. She once told Kay that she was allergic to the stuff the world made. She never said manmade. She always said "world made" so how and why..., as the question was beginning to form Teresa said, "I made this recording so I won't forget anything. I need you to listen closely." Teresa looked at Kay to make sure she was listening. Too shocked to say anything, Kay nodded as she sat down in the chair facing her grandmother's wheelchair as Teresa played the tape.

1

For over a million years humans lived in small, mobile groups gathering their food from the wild and hunting animals. When resources permitted, they came together in larger groups and occasionally, when they could rely on particularly rich sources of food, they became semi-sedentary. Then, in a relatively short period of time after the end of the last ice age, about 10,000 BCE, this stable and well-balanced way of life began to change. Across the world humans slowly began to settle in one location and replace gathered plants with ones grown on special plots of land while a few animals were also domesticated. In less than ten thousand years this new, agricultural way of life had spread around the globe. Hunting and gathering groups survived but they were increasingly pushed into more marginal areas and those that the farmers could not utilize. By the twentieth century only a few groups of such people survived to be studied by anthropologists. The adoption of farming was the most fundamental change in human history and led on to all that we call civilization and recorded human history.

\*semi-sedentary 반정착민의 \*\*anthropologist  
인류학자

2

Most historians and philosophers agree that it was the teachings of the seventeenth-century French philosopher René Descartes that ushered in the thinking of the modern age and began the unraveling of the ancient link between emotions and health. In his reaction to the religious wars and the resulting chaos that spread across Europe for most of his adult life, Descartes formulated the concepts of rationalism and the necessity of visible proof that were to become the founding principles of modern science. In that era, emotions seemed to be a thing of magic, fleeting and undefinable in the framework of the science of the day. In Descartes's orderly division of the world into rational and irrational — provable and unprovable — emotions and their relationship to health and disease clearly fell into the latter domain. And there they remained until scientific tools powerful enough to challenge the categorization could rescue them.

\*usher in ~이 시작되게 하다 \*\*-unravel 풀다  
\*\*\*fleeting 순식간에 지나가는

3

Fashions and social pressures shift. Throughout almost the first three-quarters of the 20th century, log houses in the United States, as in Norway, were considered to be rough, primitive, and low-class housing. As a consequence, weatherboards were widely used to mask earlier log construction. However, in the prosperous 1960s, when many individuals were seeking a challenge to the status quo, fashions changed and social pressure relaxed. These changes encouraged persons who wished to ride the crest of changing fashion, to seek out hidden log buildings, to remove the siding, and to enjoy the glow of their visual confirmation of society's rediscovery of its heritage. Needless to say, this was not a widely pursued innovation, but enough affluent people did do so in their quest to maintain their position as societal leaders. As a result, the log house reasserted its position as an American icon, regardless of the ethnic background of its original builders.

\*the status quo 현재 상태  
\*\*ride the crest of ~으로 성공을 구가하다  
\*\*\*quest 추구

4

A suitable way to describe how geologists perceive rocks and landscapes is the metaphor of a *palimpsest* — the term used by medieval scholars to describe a parchment that was used more than once, with old ink scraped off to allow a new document to be inscribed. Invariably, the erasure was imperfect, and traces of the earlier text survived. These remnants can be read using X-rays and various illumination techniques, and in some cases are the only sources of very ancient documents (including several of the most important writings of Archimedes). In the same way, everywhere on Earth, traces of earlier eras persist in the contours of landforms and the rocks beneath, even as new chapters are being written. The discipline of geology is similar to an optical device for seeing the Earth text in all its dimensions. To think geologically is to hold in the mind's eye what is not only visible at the surface but also present in the subsurface, what has been and will be.

\*parchment 양피지 \*\*remnant (주로 복수로)  
남은 부분, 잔존물  
\*\*contour 윤곽, 등고선

1

One possible disaster resulting from warmer temperatures in northern areas is a potential tipping point associated with the Greenland ice sheet. The "Atlantic conveyor belt" consists of warm water moving up the eastern coast of North America as the Gulf Stream and then sinking 10,000 feet near Greenland and moving back to the equator, where it warms and rises again. Large amounts of freshwater entering the North Atlantic off Greenland as the ice melts could shut down the conveyor belt because freshwater does not sink like saltwater. This could trigger an ice age in North America and Europe an ironic consequence of global warming but one associated in the past with the conveyor-belt shutdown. Climate scientists worried about this possibility several decades ago and then decided about a decade ago that it was very unlikely, but they have now begun to worry about it again.

\*tipping point 티핑 포인트(균형을 깨뜨리는  
극적인 변화의 시작점)

2

Dams affect keystone species. First they block the migration of salmon upstream to their spawning streams. Scientists have created fish ladders as well as management schemes that transport the fish around the obstacles, but these efforts have limited success. As salmon are separated from the ecological functions of a habitat, other keystone species are impacted. In this example, one such keystone species would be the grizzly bear. Without a large amount of salmon, grizzly bears cannot transport the amount of oceanic nutrients inland to help enrich soils for trees. Lack of vegetation cover then affects songbirds and small mammals. If these species disappear, the animals that hunt them disappear. Rivers that do not produce a bonanza of salmon will not attract bears. They migrate to other areas entirely, creating a gap at the center of the ecological arch.

\*spawn 산란하다 \*\*bonanza 풍부한 것

3

Sixty-five million years ago a meteor the size of New York slammed into the Earth. The environmental chaos that ensued is widely believed to have put paid to the dinosaurs. But it also had a less well-known effect. According to Ken Caldeira at the Carnegie Institution of Washington in California, the meteor also threw up vast amounts of sulfur, which then rained down on the ocean as sulfuric acid. The upper ocean became acidified for a brief moment, perhaps only one or two years. But that was enough. More or less every sea creature that built shells or skeletons out of calcium carbonate became either rare or extinct. A handful of corals must have survived, or we would not still have them on Earth today. But they were nonetheless too scarce to leave their imprint; they did not reappear in the fossil record for a full two million years.

\*ensue 뒤따르다 \*\*put paid to ~을  
멸종시키다

4

It is not common for both sides of a noise barrier to look identical because it is usually only one side of the barrier that is required to reflect or absorb noise. The difference between the two sides of a barrier should be determined on aesthetic as well as acoustic grounds: each side of the barrier should be designed to integrate with the landscape character and the backdrop against which it is to be viewed. Thus, the face of the barrier that may be facing a road corridor may include a pattern or have a bright colour whereas the other face which could stand opposite housing, may be treated in a more discreet fashion. Here, the façade may be plain and designed to merge in with neighbouring planting. Most barrier types can be designed with this in mind with the obvious exceptions of transparent barriers and many bio-barriers. Planting on either side of the barrier should also be designed with each separate identity in mind.

\*corridor 회랑 지대(주요 도로나 강을 따라 나 있는 좁고 긴 땅)

\*\*discreet 조심스러운, 신중한 \*\*\*façade 정면

1

The people who came before you invented science because your natural way of understanding and explaining what you experience is terrible. When you have zero evidence, every assumption is basically equal. You prefer to see causes rather than effects, signals in the noise, patterns in the randomness. You prefer easy-to-understand stories, and thus turn everything in life into a narrative so that complicated problems become easy. Scientists work to remove the narrative, to boil it away, leaving behind only the raw facts. Those data sit there, naked and exposed, so they can be reflected upon and rearranged by each new visitor. Scientists and laypeople will conjure up new stories using the data, and they will argue, but the data will not budge. They may not even make sense for a hundred years or more, but thanks to the scientific method, the stories, full of biases and fallacies, will crash against the facts and recede into history.

\*conjure up ~을 생각해 내다 \*\*budge 조금 움직이다

\*\*\*recede (서서히) 물러나다

2

As the sun rises in the morning, sunlight warms the ground, and the ground warms the air in contact with it by conduction. However, air is such a poor heat conductor that this process only takes place within a few centimeters of the ground. As the sun rises higher in the sky, the air in contact with the ground becomes even warmer, and there exists a thermal boundary separating the hot surface air from the slightly cooler air above. Given their random motion, some air molecules will cross this boundary: The "hot" molecules below bring greater kinetic energy to the cooler air; the "cool" molecules above bring a deficit of energy to the hot surface air. However, on a windless day, this form of heat exchange is slow, and a substantial temperature difference usually exists just above the ground. This explains why runners on a clear, windless, summer afternoon may experience air temperatures of over 50°C (122°F) at their feet and only 32°C (90°F) at their waist.

\*thermal 열의 \*\*kinetic 운동의

3

The idea of using cold temperatures to extend the shelf life of food has been known for centuries. The great Francis Bacon, the early seventeenth-century polymath rather than the twentieth-century painter, is generally credited with inventing the frozen chicken. It was not all he did, but certainly the only thing relevant to refrigeration. In the early spring of 1626, while on the way to Highgate in North London, for reasons unrecorded, Bacon decided to buy a chicken whose organs had been removed and stuff it with snow, thus demonstrating that refrigeration was a remarkable way of keeping food fresh for longer. Unfortunately, as the whole escapade was a spontaneous experiment, Bacon must have been unsuitably dressed for the snow. He caught a chill, which became pneumonia, and he died shortly thereafter while still at Highgate. He died a martyr to his science and sadly history does not record the fate of the world's first oven-ready frozen chicken.

\*escapade 엉뚱한 행위 \*\*polymath 박식가  
\*\*\*martyr 목숨을 바치는 사람

4

Genetic diversity, the heritable diversity among individuals and populations within species, provides the basis for evolution. Over millions of years it has enabled forests and trees to adapt to changing conditions. Some tree species have been domesticated, but the management of forest genetic resources mainly involves tree populations that have undergone little selection by humans. The vast majority of forest genetic diversity remains undescribed, especially in the tropics. Estimates of the number of tree species vary from 80,000 to 100,000, but fewer than 500 have been studied in any depth. Until recently, studies of forest tree genetic resources have concentrated on the few species regarded as the most suitable for domestication for use in plantations and agroforestry systems to produce wood, fibre or fuel. The present and future potential of most tree species to adapt in response to novel climatic conditions or for genetic improvement for human use remains largely unknown.

\*agroforestry 산림 농업

1

Today zoo managers recognize the need to provide a place for privacy for their charges. Most species need the opportunity to be free from the peering faces. The animal's 'flight distance' — the distance at which it will flee an approaching human — must be respected. Since animals spend much of their time foraging, wherever possible food must be hidden so that it is sought. It is unnatural to provide a wild animal with unearned food — thereby depriving it of one of its predominant activities in the wild — so every effort must be made to replicate that activity. Unfortunately, that can never be done for the large carnivores. Even if, say, one were to introduce a live zebra into a lion's area there would be no hunt — merely a short chase. And this would be as distasteful as it would be unnatural. There is no means of replicating the hunt for the large carnivores in captivity.

\*forage (동물이)먹이를 찾다 \*carnivore 육식 동물

2

Cruise ships generally stay at ports of call between six and twelve hours, although you will find a number of itineraries with overnight port stays. This limited time allotment in port is fine for small towns and other "specialized" ports of call, such as ancient historic sites or resort islands, but it can present a problem when visiting larger cities. A pet peeve of mine, for example, is the cruise that has Rome as a day port of call. How can anyone do justice to Rome in a single day? Again, how much of a problem this is depends upon your expectations. One solution to this potential disadvantage is to select a cruise that begins and/or ends in a large city — and this is the majority of Mediterranean cruises. You can then add days at either or both ends of your cruise to allow more time for in-depth sightseeing.

\*port of call 기항지 \*itinerary 여행 일정 \*pet  
peeve 아주 싫어하는 것

3

Does an NBA all-star who is young, handsome, rich, and famous need to be told by his coach that he's playing well? Apparently, the answer is yes. In 1999, Chuck Daly was considered one of the best coaches in the NBA, and Penny Hardaway, one of Daly's players on the Orlando Magic, was one of the stars of the league. Hardaway hit a mild slump in his shooting and the team lost three in a row. Daly said little to him, so Hardaway concluded that the coach had lost confidence in him. In an interview with The New York Times, Hardaway said he had probably jumped to the wrong conclusion from the coach's silence. "I know we make all this money and everything, and you wouldn't think some of us need reinforcement. But you want to hear from your coach that you're doing well, even at this level." Daly, known as a players' coach, solved the problem by having a private, heart-to-heart talk with Hardaway. He reminded him that he was a great player, told him to have fun, and invited him to come and talk to him any time he wanted. Hardaway broke out of his slump and the Magic went on a winning streak. Hardaway said later, "I'm not saying that was the main reason we haven't lost since, but it definitely helped. He let me know how important I was to this team."

\*streak 연속

1

Although tone color has a scientific explanation, its function in music is aesthetic. Music is an art of sound, and the quality of that sound has much to do with our response to it. Indeed, the concept of tonal beauty varies considerably in different periods, styles, and cultures. On the other hand, within a particular context, ideals of beauty may be quite firmly established and performers often pay extraordinary prices for instruments that can produce that ideal sound. But no instrument automatically produces a beautiful tone, so the finest violin will produce a rasping, scraping sound in the hands of a beginner. Even at the most advanced stages of accomplishment, achieving what is considered to be a beautiful tone is a criterion of a good performance.

\*rasping 귀에 거슬리는 \*scraping (듣기 싫은)  
긁는 소리의

2

Although they were internally organized by machines — cameras — early photographs resembled drawings and paintings because they depicted the world according to linear perspective. The camera obscura was popular with artists because it automatically modified a scene by compressing form and emphasizing tonal mass according to Western pictorial standards. The camera was not designed as a radical device to unleash a new way of seeing, but evolved to produce a predefined look that took into consideration formulas and procedures such as composition, angle and point of view, quality of light, and selection of subject matter. What was being represented remained unchanged. This does not diminish the camera's importance in defining an image. As with most inventions, unforeseen side effects create unintentional changes. As imagemakers became more sophisticated they routinely used specific cameras and lenses to shape an image, and knowledgeable viewers can often trace the connections between the camera/lens and the resulting picture.

\*linear perspective 선원근법 \*camera obscura  
암상자(초창기의 카메라)

\*unleash 촉발시키다, 불러일으키다

3

The effectiveness of green architecture depended upon the balance of on-site energy sources with building energy conservation. The more "conservative" the building envelope, insulation and the tightness of construction, the easier it was to match essential energy loads to the availability of on-site resources. The design motto was "conservation first!" In colder climates, construction was focused on solar energy gain, heat retention using higher insulation values and double-glazing, and even movable insulation. In warmer climates attention was given to the solar control of the envelope, especially roofs and western facades, as well as to natural ventilation and daylighting. Conservation conscious design was in sharp contrast to previous modernist tendencies of spatial generosity, complexity of form, expansive glazing areas, and reliance on abundant fossil fuels and mechanical systems for heating and cooling.

\*insulation 단열 [절연] 처리 \*glazing 창유리  
\*facade (건물의) 전면 [정면]

4

Music tourism sites and attractions generally attract two kinds of visitors: those particularly drawn for whatever reason to the memory or music of a particular performer, composer or genre (most obvious for festivals), and those who are there because the place fits into an itinerary devised for other reasons or because the visit is likely to be enjoyable. Thus, at Abbey Road, a place identified in many general guidebooks, most visitors were there because they had some appreciation of the Beatles' music, but others were there simply because it was part of an agenda that included a range of obvious London landmarks. Particular links to music sites are, however, much more idiosyncratic and dependent on personal musical taste. Wider cultural and national links may also be evident. New Orleans and the Cajun region are popular with French tourists. For French tourists, travel to New Orleans in part allows an experience of Francophone identities in the New World, just as it is more likely to be Americans who visit Jim Morrison's grave in Paris.

\*idiosyncratic (개인에게) 특유한 \*Francophone  
프랑스어를 주 언어로 사용하는

1

Making a discovery, whether in the laboratory or library archives, about something that no one else in the world knows at a particular time is a thrilling experience for an undergraduate student. College students who have the opportunity to participate in undergraduate research can experience this thrill of discovery. They may identify a new bacterial strain, make a connection between previously separate concepts, or uncover long-forgotten archival documents that lead to a new understanding of an issue. Nearly every U.S. college and university includes undergraduate research experiences in the learning opportunities offered to students. Institutions of higher education of all types are implementing a number of creative approaches to facilitate innovation, problem-solving and discovery, and they see undergraduate research as a critical vehicle for achieving these objectives.

2

A professor sent his sociology class to a school in a slum to record case histories of 200 young boys. The sociology students concluded that each boy appeared doomed to a bleak future. More than two decades later, another sociology professor sent his class out to find out what had happened to these 200 boys. Of the 180 still surviving in that neighborhood, all of these men had achieved extraordinary success as doctors, lawyers, and productive members of the community. The professor, determined to find out how these men had beaten seemingly overwhelming odds, followed up with interviews. Each of the men credited the same particular teacher; someone who had seen great potential in each of them. This teacher's expectations, held with conviction, drove her to actively nurture and support imminent success in all her students.

\*bleak 암울한 -imminent 절박한

3

Samuel and Pearl Oliner found large differences between European Gentiles who harbored Jews from the Nazis and those who did not: Rescuers reported close childhood associations with more people of different social classes and religions. Moreover, while growing up, they felt a sense of similarity to a wider and more varied group of people than did nonrescuers. Not only was this expanded sense of "we" related to their decisions to aid people different from themselves during the war but also, when interviewed half a century later, rescuers were still helping a greater variety of people and causes. All this suggests a piece of advice for prospective parents who want their children to develop a broadly charitable nature: Give them positive contact in the home with individuals from a wide spectrum of backgrounds.

\*Gentile 비(非)유대인

4

Have you ever said something to your child like the following? Your room is a mess: I want you to clean it up before you go to the game. Have you then wondered why she didn't do what she was told to do, right away and with a smile? You made a unilateral decision, and she was expected to carry it out according to your time frame and standards. Because, After all, I'm the parent! This attitude, however, fails to consider the child's point of view. When you neglect to consider your child's thoughts, feelings, needs, and possible solutions to getting the room cleaned, you do so at the risk of losing her respect and goodwill. Your child's grumbling resistance is, in effect, a natural consequence of your choice to operate without her input.

\*unilateral 일방적인 \*grumble 투덜거리다

1

The ancient Greeks had a word that lies at the heart of procrastination: akrasia, which means doing something against our own better judgment. When we procrastinate, we act against our own self-interests, satisfying the desire for immediate gratification by sacrificing our own longer-term goals and well-being. The essence of procrastination is to willingly put off something even though you expect the delay to make you worse off. The pile of important papers you never quite get to. The new job you put off looking for even though going to your current place of employment is the bane of your existence. Whenever we knowingly delay doing what's necessary in favor of the easier, less important task, we feed the demon of procrastination.

\*procrastination 미루는 버릇, 지연

\*gratification 만족 \*bane 골칫거리

2

In addition to gender, cultures have many other ways of dividing people into categories. Common examples include age, class, religiosity level of religious commitment, political stance, and value system. In all these examples, dress functions as a way of marking that a person is a member of a particular category. For example, older women in both the United States and Europe have created Red Hat Societies, in which red hats and purple clothing are used to formally mark entrance into middle and older age with fun and spirited apparel. These category systems help people living within cultural groups to interact easily, with dress functioning as a sign system allowing for rapid sorting of people into known and accepted groupings important to the given culture. Rituals, ceremonial occasions marking significant events such as weddings, graduations, and important holidays, are often events which are dressed for, where categories considered important by a society are visually displayed for all to see and appreciate.

3

James Banks states that "worldwide immigration is increasing racial, ethnic, cultural, linguistic, and religious diversity throughout the United States as well as in other Western nations such as the United Kingdom, France, Germany, and Australia." Indeed, these are not the only countries that are experiencing changing populations. Banks argues that this is a time when the world "demands leaders, educators, and classroom teachers who can bridge impermeable cultural, ethnic, and religious borders, envision new possibilities, invent novel paradigms, and engage in personal transformation and visionary action." Christine Bennett adds to this argument by stating currently, more than ever before, there is an urgent need for citizens in the world that have a strong "multicultural competence" and who aim for global goals such as social justice and economic equality in order for there to be a sustainable peace. The intensified movement of people in recent times has not gone unnoticed, and must be addressed if peaceful societies are to exist.

\*impermeable 통과할 [지나갈] 수 없는

4

Literacy is a common end of persons nowadays but reading and writing are recent inventions, only five thousand years old. There was no selection for literacy. In order to read, we utilize brain areas originally selected to track animals. One way to put the matter is that literacy didn't initially matter one iota for fitness. It couldn't have. We were not literate for almost the entire history of our species. Furthermore, literacy does not seem to contribute to fitness, size there is an inverse correlation between fitness — as measured by birthrate, a proxy for inclusive fitness — and literacy. The birthrate is at zero or below in many parts of Europe where literacy is almost universal, and over 5 percent in places like Yemen and Niger, where literacy is low. Nonetheless, literacy seems to be really important for something else: human flourishing.

\*inverse correlation 역 상관관계 \*proxy  
대용물, 대체물 \*not one iota  
전혀 [조금도] 아닌

1

Reformers have seen the Internet as a means of moving toward the ideal of responsive democratic governance in the area of public administration. They view the burgeoning presence of government on the Internet as an attempt to respond to citizens as clients and customers. They believe that conducting public business online provides many of the same advantages as conducting private business online. Information can be accessed and services can be delivered at the convenience of the citizen. No standing in line at a government office, no trying to reach a bureaucrat by telephone, no waiting for forms to arrive in the mail. Just as the Internet has brought dramatic changes to e-commerce, so advocates of e-government, the provision of governmental information and services online, see the Internet as a way to modernize the public sector and democratize the relationship between individual citizens and their government.

\* burgeon 급증하다 \*\* bureaucrat 관료

2

Even if we give robots the ability to learn what we want, an important question remains that AI alone won't be able to answer. We can make robots try to align with a person's internal values, but there's more than one person involved here. The robot has an end user (or perhaps a few, like a personal robot caring for a family, a car driving a few passengers to different destinations, or an office assistant for an entire team); it has a designer (or perhaps a few); and it interacts with society — the autonomous car shares the road with pedestrians, human-driven vehicles, and other autonomous cars. How to combine these people's values when they might be in conflict is an important problem we need to solve. AI research can give us the tools to combine values in any way we decide but can't make the necessary decision for us.

\* align with ~에 맞추다

3

Children, of course, have less control over their attention than adults, but when they do pay attention, they open their minds more fully to the messages presented. By the early 1950s advertisers had come to understand the commercial potential of reaching children by television. The Howdy Doody Show, featuring a clown and a dancing puppet, for instance, was sponsored by a famous food company, and during every show Howdy Doody would dance around a cereal box. But those were the early days. By the late 1950s, programmers had learned to create shows that in a sense served as advertisements themselves, like The Mickey Mouse Club, which helped nurture enduring attachments to characters like Mickey Mouse, Donald Duck, and other friends. That, in turn, helped drive sales of toys, tickets to Disney's feature films, trips to Disneyland, and so on. And by the late 1950s, toy makers began creating toys specifically designed to be advertised on television — like Mattel's first girl-directed toy, the Barbie doll, whose commercials, which ran during breaks in The Mickey Mouse Club, chronicled glamorous episodes in Barbie's life.

\* chronicle 연대순으로 기록하다 \*\* glamorous 화려한

4.

With so many people sharing the most intimate details of their lives with the world, something was bound to disrupt the trajectory of online sharing. The year 2013 saw NSA (National Security Agency) leaks, hackers targeting consumer credit cards, and blanket inquiries into individuals' personal lives through their online connections, to name a few. These invasions of privacy and more have inspired whole new platforms based on giving the user a digital experience that can be anonymous, deleted, and secure. For example, app developers have created a photo messaging app that enables users to send a photo or video with text to a specific group of people and control the time limit for how long they can view the sent message from one to ten seconds. When the time limit ends, the message is no longer available and is deleted from the app's servers. In this way users can.

\* trajectory 진행 과정 \*\* anonymous 익명의

1.

One approach to social facilitation that proposes an influence in social presence is based on the idea that people generally try to present the best possible appearance to others and to make a favorable impression. This being the case, observers or coactors may not only motivate individuals to work hard at whatever task is being carried out, but also increase the person's sense of embarrassment when performance leads to failure. Failure is not likely to happen when the task is a simple or familiar one, so that the increased motivation is sufficient to produce improvement. Difficult tasks are often failed, however, at least at the beginning. Embarrassment caused by such failure may cause stress and cognitive interference of sufficient intensity to disrupt performance.

\* social presence 사회적, 실재감

2.

Name a person who's accomplished something great, and you will find a trail of risk along their personal path to greatness. Do you think Martin Luther King, Jr. wasn't afraid? Do you suppose that JFK, Mother Teresa, Gandhi, and Nelson Mandela weren't scared about how their message would be received? These were people who heard the call, felt the fear, and moved forward regardless. They weren't afraid to turn the volume up on their lives so they could ultimately turn the volume up on their love. When you're going after anything worthwhile in life, know that you're going to eventually fall, look stupid, and make mistakes; it's part of the process of achieving. If you're not failing, you're probably not stretching yourself. The comfort zone is a place where dreams go to die, and where vitality goes to die with it.

3.

We so often reach the conclusion, soon after we wake up, that "it's just one of those days," and by doing so create one of those days; or we enter a situation and predict that it's going to be bad — boring, irritating, frustrating, or annoying — and our prediction becomes a self-fulfilling prophecy. In fact, however, we can make most days and most encounters cheerful, lively, positive, and pleasant — if we choose to bring these kinds of emotions to the situation. Emotions are contagious. Just as I am affected by other people's moods, other people are affected by mine. If I choose to enter a room with a sense of joy and excitement, my positive mood will spread and will affect those present. And while I should certainly allow myself to experience painful emotions at times, in some situations it may be appropriate to "fake it till I make it" and imbue myself and others with positive energy.

\* imbue 스며들게 하다

4

You can steer a conversation in any direction that you choose. Take this example. Let's say that while you are at a friend's house, she shows you her brand-new dining room table. If you want to know if it was really expensive, would asking directly be your best bet? Usually not, because she may get a little defensive. But if you said to your friend that it's the most gorgeous table you have ever seen, what might she respond with? You guessed it — how expensive it was! If you said, "This looks like it cost a fortune. How could you spend so much on a table?" what response might you get? She will tell you about its quality and the craftsmanship that went into it. When you say it's expensive, she'll talk about the quality. If you say that it looks beautiful, she'll tell you about the cost. By asking the right questions, you can steer the conversation in any direction you want and elicit the information that you need.

\* elicit (정보, 반응 등을) 이끌어 내다

1

In the United States, the coming of the railroads opened up local and regional markets to competition. Local producers had difficulty competing with large manufacturers, and many local companies went out of business or merged with other firms producing similar foods. The shipment of dressed beef from the Midwest to eastern cities, for instance, all but eliminated local slaughterhouses and reduced the number of butchers. In 1860, New York City had more than 2,000 butchers; only a few hundred survived in 1900. These butchers had counted on their customers' appreciation of the quality and flavor of their meats, but shoppers readily gave up locally butchered beef and pork for cheaper cuts shipped from the Midwest.

\* dressed 요리용으로 준비된

2

There are limits to the idea of "timeless" fashion. Fashions from the Victorian era or from Elizabethan times do not appear cool or fashionable now, no matter who wears them. Indeed, it is interesting to consider whether the concept of "cool" can be applied to historical eras in which fashion is constrained by social and gender conventions to a far greater degree than is the case in most modern liberal societies. It's hard to imagine a woman dressed in Jane Austen-era clothes as "cool" even though she might be fashionable given the standards of the time. Historical figures who might qualify as "cool," such as Lord Byron, are individuals who had a degree of financial and/or social freedom (usually arising from wealth and leisure) that allowed them to exercise their aesthetic choices in a way that was not possible for individuals who were more constrained by convention and circumstance. Perhaps, then, being cool is also a matter of having freedom to exercise one's tastes, and the resources to be able to do this.

3

Politicians, especially those in the national spotlight, are often jokingly accused of being narcissists but, in all seriousness, their profession lends itself to this particularly destructive personality trait. For example, in order to be a successful candidate, you have to be unnaturally optimistic even in the face of probable defeat and possess high levels of self-esteem despite the constant criticism that comes with the territory. Furthermore, you are constantly given sole credit for successes — even though those successes were achieved, in part, by the work of many aides and assistants. Finally, you constantly have people relying on you, believing in you, and holding you responsible as the sole representative of a cause. All of this power can lead to an exaggerated sense of self-importance that can cause some individuals to believe that the world revolves around them. That's when their out-of-control behaviors become easier to rationalize.

\* narcissist 나르시시스트(자기 자신을 사랑하거나, 훌륭하다고 여기는 사람)

\*\* come with the territory 일상적인 일이다

4

Many of those who oppose globalization reserve their highest loyalties to the sovereign state, which they believe exists to protect their interests. They argue that in democratic states, such as those in Europe and North America, citizens have a voice in determining their own fates but have little or no voice in the boardrooms of giant transnational corporations, remote international bureaucracies like the EU or WTO, or economic markets, and such institutions are not accountable to citizens. Thus, anti-globalizers argue, globalization has created a democratic deficit by empowering institutions in which people have no voice and unleashing economic and cultural forces over which they have no control. Globalization, they believe, is eroding the rights and capacity of people to determine their own future. The result is alienation and anxiety, as people's lives are buffeted by remote forces beyond their control or understanding.

\* sovereign state 주권 국가 \*\* bureaucracy 관료 (체제)

1

A middle-aged woman sat in a clinic's sitting room waiting to be fitted for a prosthesis to replace the leg she lost in an accident. Although considerable time had passed since the accident and she had adjusted well, she continued to feel emotionally devastated by her loss. The woman watched as a young boy with a patch over his eye played with some toys. The word "pirate" transformed her immediately and changed her entire outlook. She vividly imagined the romantic thrill of sailing the high seas in search of adventure. Some time later, the little boy asked what happened to her leg. She replied proudly, "I'm a pirate too." The thought of losing an eye at such a tender age made her own difficult situation seem minor by comparison. She struck up a casual conversation and eventually asked what happened to his eye. He replied, "Oh nothing. I'm a pirate."

\* prosthesis 인공 보철물(의족, 의안, 의치 등)

2

The definition of a calorie does not refer to something that produces fat, but to something that produces energy. Calories are an important source of energy for the body and the brain. They are necessary for the growth of nails and hair and to replace skin cells. Calories produce the energy needed for walking, bicycling, reading, talking over the phone, texting and so on. Without the intake of calories, the body cannot develop energy for physical, psychological and social activities and becomes exhausted. Consuming enough calories is necessary not only for healthy physical functioning but also for psychological well-being. The intake of sufficient calories is a necessary condition to be in a positive frame of mind.

3

The anti-aging industry promotes a particular image of longevity that is reduced to biomechanical processes at the cellular level. Such discourse focuses on longevity as an individual body's battle against aging rather than considering aging in a broader social and historical context. In an era when care of the self comprises a vast industry, healing through nutrition and healthy diets may seem too low-tech or slow. Gaining broader cultural knowledge of medicinal foods may offer alternatives to anti-aging discourse in which bodies are subject to biomechanical processes. Traditional systems of medicine offered insights based on observation of the subtle interactions of food and environment of human bodies. We can greatly influence our well-being through diet and nutritional knowledge, not just consuming dietary supplements. Longevity is not guaranteed, but the possibility of accessible self-managed care on a daily basis through attention to one's food can enhance the quality of one's life.

4

As early as 1907, one prominent Russian zoologist, Ilya Metchnikoff, began to question if the “all bacteria are bad” orthodoxy might be flawed. During the cholera epidemic of 1892 in France, Metchnikoff mixed bacteria together in a petri dish and found that some bacteria could stimulate cholera growth, but to his surprise found that other bacteria hindered it. This led him to speculate whether swallowing some types of helpful bacteria might be useful for preventing deadly diseases. He was also struck by the fact that some people lived to a ripe old age despite harsh rural conditions and poor hygiene associated with poverty. In Bulgaria, he noted, there were peasants in the Caucasus Mountains who lived beyond one hundred years. He observed that the oldest villagers were drinking fermented yogurt containing the bacteria *Lactobacillus bulgaricus*. Metchnikoff suggested that one secret to longevity is consuming healthy bacteria. History would prove him right.

\* orthodoxy 정설 \*\* petri dish 페트리[세균 배양용] 접시