



ANALYSIS 변화하는 환경에서 인간 판단과 통계 통합의 필요성

The need for human judgment and statistical integration in a changing environment



[1] Robert Blattberg and Steven Hoch noted that, in a changing environment, it is not clear that consistency is always a virtue and that one of the advantages of human judgment is the ability to detect change.

[2] Thus, in changing environments, it might be advantageous to combine human judgment and statistical models.

[3] Blattberg and Hoch examined this possibility by having supermarket managers forecast demand for certain products and then creating a composite forecast by averaging these judgments with the forecasts of statistical models based on past data.

[4] The logic was that statistical models assume stable conditions and therefore cannot account for the effects on demand of novel events such as actions taken by competitors or the introduction of new products.

[5] Humans, however, can incorporate these novel factors in their judgments.

[6] The composite — or average of human judgments and statistical models — proved to be more accurate than either the statistical models or the managers working alone.



01번 카페인 효과는 유전, 연령, 체내 제거 시간에 따라 달라집니다.

Caffeine Effects Depend on Genetics, Age, and Clearance Time.

- [1] The "jolt" of caffeine does wear off.
- [2] Caffeine is removed from your system by an enzyme within your liver, which gradually degrades it over time.
- [3] Based in large part on genetics, some people have a more efficient version of the enzyme that degrades caffeine, allowing the liver to rapidly clear it from the bloodstream.
- [4] These rare individuals can drink an espresso with dinner and fall fast asleep at midnight without a problem.
- [5] Others, however, have a slower-acting version of the enzyme.
- [6] It takes far longer for their system to eliminate the same amount of caffeine.
- [7] As a result, they are very sensitive to caffeine's effects.
- [8] One cup of tea or coffee in the morning will last much of the day, and should they have a second cup, even early in the afternoon, they will find it difficult to fall asleep in the evening.
- [9] Aging also alters the speed of caffeine clearance: the older we are, the longer it takes our brain and body to remove caffeine, and thus the more sensitive we become in later life to caffeine's sleep-disrupting influence.



02편 무역장벽이 가난한 나라에 미치는 영향



The Impact of Trade Barriers on Poor Nations

[1] Over the past several decades, there have been some agreements to reduce the debt of poor nations, but other economic challenges (like trade barriers) remain.

[2] Nontariff trade measures, such as quotas, subsidies, and restrictions on exports, are increasingly prevalent and may be enacted for policy reasons having nothing to do with trade.

[3] However, they have a discriminatory effect on exports from countries that lack the resources to comply with requirements of nontariff measures imposed by rich nations.

[4] For example, the huge subsidies that rich nations give to their farmers make it very difficult for farmers in the rest of the world to compete with them.

[5] Another example would be domestic health or safety regulations, which, though not specifically targeting imports, could impose significant costs on foreign manufacturers seeking to conform to the importer's market.

[6] Industries in developing markets may have more difficulty absorbing these additional costs.



Countershading

03편 카운터셰이딩: 동물들의 위장전략



Countershading: Animal camouflage strategies

- [1] Countershading is the process of optical flattening that provides camouflage to animals.
- [2] When sunlight illuminates an object from above, the object will be brightest on top.
- [3] The color of the object will gradually shade darker toward the bottom.
- [4] This shading gives the object depth and allows the viewer to distinguish its shape.
- [5] Thus even if an animal is exactly, but uniformly, the same color as the substrate, it will be easily visible when illuminated.
- [6] Most animals, however, are darker above than they are below.
- [7] When they are illuminated from above, the darker back is lightened and the lighter belly is shaded.
- [8] The animal thus appears to be a single color and easily blends in with the substrate.
- [9] This pattern of coloration, or countershading, destroys the visual impression of shape in the organism.
- [10] It allows the animal to blend in with its background.



04편 시장의 규모와 노동의 분업에 영향을 미치는 전문화

Specialization affecting market size and division of labor

[1] Adam Smith pointed out that specialization, where each of us focuses on one specific skill, leads to a general improvement of everybody's well-being.

[2] The idea is simple and powerful.

[3] By specializing in just one activity — such as food raising, clothing production, or home construction — each worker gains mastery over the particular activity.

[4] Specialization makes sense, however, only if the specialist can subsequently trade his or her output with the output of specialists in other lines of activity.

[5] It would make no sense to produce more food than a household needs unless there is a market outlet to exchange that scarce food for clothing, shelter, and so forth.

[6] At the same time, without the ability to buy food on the market, it would not be possible to be a specialist home builder or clothing maker, since it would be necessary to farm for one's own survival.

[7] Thus Smith realized that the division of labor is limited by the extent of the market, whereas the extent of the market is determined by the degree of specialization.



05편 스마트 기술에 대한 우리의 의존



Our dependence on smart technology

- [1] The most advanced military jets are fly-by-wire:
- [2] They are so unstable that they require an automated system that can sense and act more quickly than a human operator to maintain control.
- [3] Our dependence on smart technology has led to a paradox.
- [4] As technology improves, it becomes more reliable and more efficient, and human operators depend on it even more.
- [5] Eventually they lose focus, become distracted, and check out, leaving the system to run on its own.
- [6] In the most extreme case, piloting a massive airliner could become a passive occupation, like watching TV.
- [7] This is fine until something unexpected happens.
- [8] The unexpected reveals the value of humans; what we bring to the table is the flexibility to handle new situations.
- [9] Machines aren't collaborating in pursuit of a joint goal; they are merely serving as tools.
- [10] So when the human operator gives up oversight, the system is more likely to have a serious accident.



06편 정상 과학



Normal science

- [1] What exactly does normal science involve?
- [2] According to Thomas Kuhn it is primarily a matter of puzzle-solving.
- [3] However successful a paradigm is, it will always encounter certain problems — phenomena which it cannot easily accommodate, or mismatches between the theory's predictions and the experimental facts.
- [4] The job of the normal scientist is to try to eliminate these minor puzzles while making as few changes as possible to the paradigm.
- [5] So normal science is a conservative activity — its practitioners are not trying to make any earth-shattering discoveries, but rather just to develop and extend the existing paradigm.
- [6] In Kuhn's words, 'normal science does not aim at novelties of fact or theory, and when successful finds none'.
- [7] Above all, Kuhn stressed that normal scientists are not trying to test the paradigm.
- [8] On the contrary, they accept the paradigm unquestioningly, and conduct their research within the limits it sets.
- [9] If a normal scientist gets an experimental result which conflicts with the paradigm, they will usually assume that their experimental technique is faulty, not that the paradigm is wrong.



07번 가치 있는 정보를 기억하기 위해 세부 사항의 기억을 억제 하는 뇌



The brain that suppresses the memory of details to remember valuable information

[1] In order for us to be able to retain valuable pieces of information, our brain has to forget in a manner that is both targeted and controlled.

[2] Can you recall, for example, your very first day of school?

[3] You most likely have one or two noteworthy images in your head, such as putting your crayons and pencils into your pencil case.

[4] But that's probably the extent of the specifics.

[5] Those additional details that are apparently unimportant are actively deleted from your brain the more you go about remembering the situation.

[6] The reason for this is that the brain does not consider it valuable to remember all of the details as long as it is able to convey the main message (i.e., your first day of school was great).

[7] In fact, studies have shown that the brain actively controls regions responsible for insignificant or minor memory content that tends to disturb the main memory.

[8] Over time, the minor details vanish more and more, though this in turn serves to sharpen the most important messages of the past.



08편 생물 다양성과 단일 경작의 결점



Biodiversity and the Disadvantages of Single Cultivation

[1] Human innovation in agriculture has unlocked modifications in apples, tulips, and potatoes that never would have been realized through a plant's natural reproductive cycles.

[2] This cultivation process has created some of the recognizable vegetables and fruits consumers look for in their grocery stores.

[3] However, relying on only a few varieties of cultivated crops can leave humankind vulnerable to starvation and agricultural loss if a harvest is destroyed.

[4] For example, a million people died over the course of three years during the Irish potato famine because the Irish relied primarily on potatoes and milk to create a nutritionally balanced meal.

[5] In order to continue its symbiotic relationship with cultivated plants, humanity must allow for biodiversity and recognize the potential drawbacks that monocultures of plants can introduce.

[6] Planting seeds of all kinds, even if they don't seem immediately useful or profitable, can ensure the longevity of those plants for generations to come.

[7] A balance must be struck between nature's capacity for wildness and humanity's desire for control.



09편 영화의 객관적 시점



An objective point of view of a movie

- [1] The objective point of view is illustrated by John Ford's "philosophy of camera."
- [2] Ford considered the camera to be a window and the audience to be outside the window viewing the people and events within.
- [3] We are asked to watch the actions as if they were taking place at a distance, and we are not asked to participate.
- [4] The objective point of view employs a static camera as much as possible in order to produce this window effect, and it concentrates on the actors and the action without drawing attention to the camera.
- [5] The objective camera suggests an emotional distance between camera and subject; the camera seems simply to be recording, as straightforwardly as possible, the characters and actions of the story.
- [6] For the most part, the director uses natural, normal types of camera positioning and camera angles.
- [7] The objective camera does not comment on or interpret the action but merely records it, letting it unfold.
- [8] We see the action from the viewpoint of an impersonal observer.
- [9] If the camera moves, it does so unnoticeably, calling as little attention to itself as possible.



10편 건축에서 디자인의 중요성



The Importance of Design in Architecture

- [1] On projects in the built environment, people consider safety and functionality nonnegotiable.
- [2] But the aesthetics of a new project – how it is designed – is too often considered irrelevant.
- [3] The question of how its design affects human beings is rarely asked.
- [4] People think that design makes something highfalutin, called architecture, and that architecture differs from building, just as surely as the Washington National Cathedral differs from the local community church.
- [5] This distinction between architecture and building – or more generally, between design and utility – couldn't be more wrong.
- [6] More and more we are learning that the design of all our built environments matters so profoundly that safety and functionality must not be our only urgent priorities.
- [7] All kinds of design elements influence people's experiences, not only of the environment but also of themselves.
- [8] They shape our cognitions, emotions, and actions, and even our well-being.
- [9] They actually help constitute our very sense of identity.



10번 오래될수록 믿게 되는 기적 이야기



Miracle stories that you believe as you get older

[1] Spine-tingling ghost stories are fun to tell if they are really scary, and even more so if you claim that they are true.

[2] People get a thrill from passing on those stories.

[3] The same applies to miracle stories.

[4] If a rumor of a miracle gets written down in a book, the rumor becomes hard to challenge, especially if the book is ancient.

[5] If a rumor is old enough, it starts to be called a "tradition" instead, and then people believe it all the more.

[6] This is rather odd because you might think they would realize that older rumors have had more time to get distorted than younger rumors that are close in time to the alleged events themselves.

[7] Elvis Presley and Michael Jackson lived too recently for traditions to have grown up, so not many people believe stories like "Elvis seen on Mars."



12강 갑작스러운 성공이나 상금의 위험성

The risk of sudden success or prize money

- [1] Sudden success or winnings can be very dangerous.
- [2] Neurologically, chemicals are released in the brain that give a powerful burst of excitement and energy, leading to the desire to repeat this experience.
- [3] It can be the start of any kind of addiction or manic behavior.
- [4] Also, when gains come quickly we tend to lose sight of the basic wisdom that true success, to really last, must come through hard work.
- [5] We do not take into account the role that luck plays in such sudden gains.
- [6] We try again and again to recapture that high from winning so much money or attention.
- [7] We acquire feelings of superiority.
- [8] We become especially resistant to anyone who tries to warn us— they don't understand, we tell ourselves.
- [9] Because this cannot be sustained, we experience an inevitable fall, which is all the more painful, leading to the depression part of the cycle.
- [10] Although gamblers are the most prone to this, it equally applies to business people during bubbles and to people who gain sudden attention from the public.