

Edge Dergisi Sorusu <http://www.edge.org/>
1998 den beri bu tip soruları büyük beyinlere soruyor.
1998: What Questions Are You Asking Yourself?

1999: What Is The Most Important Invention In The Past 2000 Years... And Why?

2000: What Is Today's Most Important Unreported Story

2001: What Now?

2002: What's Your Question?

2003: What Are The Pressing Scientific Issues for the Nation and the World, and What Is Your Advice on How I Can Begin to Deal With Them?

2004: What's Your Law?

2005: What Do You Believe Is True Even Though You Cannot Prove It? (book)

2006: What Is Your Dangerous Idea? (book)

2007: What Are You Optimistic About (book)

2008: What Have You Changed Your Mind About? Why? (book)

2009: What Will Change Everything? (book)

2010: How Is The Internet Changing The Way You Think? (book)

2011: : What scientific concept would improve everybody's cognitive toolkit?

Özet; Ne türlü ya da hangi bilimsel bir kavram herkesin bilişel aracını geliştirir? Herkesin zihinsel araçlarını geliştirici bilimsel kavram nedir ya da hangisidir? Dünyanın en büyük ve popüler düşünürlerine ya da beyinlerine sorulan soruda alınan yanıtların ortak paydası;

-Belirsizlik ve başarısızlığı sevmeyi öğrenmeliyiz.

-Bilimin başarabileceklerinin sınırını (bilimin kefenini bilmek) bilmek son derece değerli araçlardır. Edge dergisinin yıllık uygulamalarından olan bu tip soruları büyük beyinlere işletmek cevapları bir arada değerlendirmektir.

-Dergi daha büyük sorunları/soruların hepsinin ya da düşüncelerin kısa özetlenişle sınırlandırışı, fikirleri tohumlaştırışa (bir kapsül içerisine) ya da özetleyişe veya bilimsel sadeleştirişe, tanımsal sınırlarını vecizeleştirişe ya da özetleyişe dikkat edilmesi konusunda çağrıda bulundu.

- Verilen yanıttan anlaşıldığına göre; bilim adamları arasındaki anlaşmazlık-uyuşmazlıklardan, halk bilimsel süreç ve bilimsel kuşunun doğasını yanlış anlamasından dolayı bir çok kamusal sıkıntıların ortaya çıkmasına neden olmaktadır.

-Güvenlimidir değımlidir diye haklı olarak halk kuşulanıyor. Örneğin; iklim değışimi, Avustralya'daki tartışmalı aşu konusu...Vb gibi

Yorumum; En az yalan söylemeye üzölmek kadar başarısızlığa ve belirsizliğe bazen üzölmek boşuna değıldir. Belirsizlikleri ve başarısızlıklarımızın kabullenişin belli bir ölçütü olmalıdır. Bence biz öğrenmek, başaramamak, hedefe ulaşmak için ...Vb konusunda yeterince liyakatli çalışma, gayret, azim içinde bulunup kendimizi doğru değıerlendirdiğimize inanmış, vicdani kişiliğimiz rahatsa ve bu konuda başarısızlığı ve belirsizliği içimizde bizi kemirmeden ve bize zarar vermeden sevecen, kazanılan bir deneyim, bilgi, kazanç olarak bir yere oturtulabilir. Aksi durumda sorumluluk gereğı başarısızlık ve belirsizliğe üzölmek sorumluluk gereğıdir ve gelecekte başarılı olmamız için uyarılmamız, aynı hataya düşmeme motivasyonu için yeterince üzölmek belki de yerindedir. Peygamber AS ne güzel bir düstur koymuş:günde 8 saat çalışın, 8 saat dinlenin ve 8 saat uyuyun. (Hadis). Bunu tam ve net yapmışsak vicdanımız rahat olmalıdır. Bilimin ölümlü olduğunu bilerek bilimi aşan değıer yargıları (İslami inanç değıerleri) olamayan kişiliklerin bilimin kefeni içinde boğıulup

gideceklerinden emin olmalıyız. Bilimi aşan değer yargılarıyla bilimi içimizde (Zihin ve batini kalbimizde) konumlandırıp doğa ötesini aşkın düşünüş beceri ve yetenekleri öğrencilerimizde eğitimle geliştirilmesini önemlidir. Herkesin zihinsel araçlarını geliştirici bilimsel kavram nedir ya da hangisidir? Sorunun yanıtındaki amaç şu olmalı; öyle bir kavramdan bahsetmek dinkin herkesin zihinsel araçlarını (Akıl, fikir, mantık, zeka, vicdan, ruh, nefis...vb) geliştirici motive edici olsun. Belki de bu sorunun anahtar cevabı bilimin kefenini aşan peygamber ahlaklı insan yetiştirmenin beyinsel, düşünsel, zihinsel ve mantıksal tasarımını kazandıran eğitim sistemleri geliştirmektir. Bilimin ölümlü oluşu nedeniyle bilimde her alanda ya da çoğu alanda kesinliğin olamayacağını olmadığını ve olamayacağını doğru ve liyakatli kavratılmalıdır.

We must learn to love uncertainty and failure, say leading thinkers

Planet's biggest brains answer this year's Edge question: 'What scientific concept would improve everybody's cognitive toolkit?'



Edge of reason: Doubt and uncertainty are essential elements of the scientific process. Photograph: Getty Images

Being comfortable with uncertainty, knowing the limits of what science can tell us, and understanding the worth of failure are all valuable tools that would improve people's lives, according to some of the world's leading thinkers.

The ideas were submitted as part of an annual exercise by the web magazine [Edge](#), which invites scientists, philosophers and artists to opine on a major question of the moment. This year it was, "What scientific concept would improve everybody's cognitive toolkit?"

The magazine called for "shorthand abstractions" – a way of encapsulating an idea or scientific concept into a short description that could be used as a component of bigger questions. The responses were published online today.

Many responses pointed out that the public often misunderstands the scientific process and the nature of scientific doubt. This can fuel public rows over the significance of disagreements between scientists about controversial issues such as climate change and vaccine safety.

[Carlo Rovelli](#), a physicist at the University of Aix-Marseille, emphasised [the uselessness of certainty](#). He said that the idea of something being "scientifically proven" was practically an oxymoron and that the very foundation of science is to keep the door open to doubt.

"A good scientist is never 'certain'. Lack of certainty is precisely what makes conclusions more reliable than the conclusions of those who are certain: because the good scientist will be ready to shift to a different point of view if better elements of evidence, or novel arguments emerge. Therefore certainty is not only something of no use, but is in fact damaging, if we value reliability."

The physicist [Lawrence Krauss](#) of Arizona State University [agreed](#). "In the public parlance, uncertainty is a bad thing, implying a lack of rigour and predictability. The fact that global warming estimates are uncertain, for example, has been used by many to argue against any action at the present time," he said.

"In fact, however, uncertainty is a central component of what makes science successful. Being able to quantify uncertainty, and incorporate it into models, is what makes science quantitative, rather than qualitative. Indeed, no number, no measurement, no observable in science is exact. Quoting numbers without attaching an uncertainty to them implies they have, in essence, no meaning."

[Neil Gershenfeld](#), director of the Massachusetts Institute of Technology's Centre for Bits and Atoms wants everyone to know that ["truth" is just a model](#). "The most common misunderstanding about science is that scientists seek and find truth. They don't – they make and test models," he said.

"Building models is very different from proclaiming truths. It's a never-ending process of discovery and refinement, not a war to win or destination to reach. Uncertainty is intrinsic to the process of finding out what you don't know, not a weakness to avoid. Bugs are features – violations of expectations are opportunities to refine them. And decisions are made by evaluating what works better, not by invoking received wisdom."

The writer and web commentator [Clay Shirky](#) suggested that people should think more carefully about how they see the world. His suggestion was [the Pareto principle](#), a pattern whereby the top 1% of the population control 35% of the wealth or, on Twitter, the top 2% of users send 60% of the messages. Sometimes known as the "80/20 rule", the Pareto principle means that the average is far from the middle.

It is applicable to many complex systems, "And yet, despite a century of scientific familiarity, samples drawn from Pareto distributions are routinely presented to the public as anomalies, which prevents us from thinking clearly about the world," said Shirky.

"We should stop thinking that average family income and the income of the median family have anything to do with one another, or that enthusiastic and normal users of communications tools are doing similar things, or that extroverts should be only moderately more connected than normal people. We should stop thinking that the largest future earthquake or market panic will be as large as the largest historical one; the longer a system persists, the likelier it is that an event twice as large as all previous ones is coming."

[Kevin Kelly](#), editor-at-large of Wired, pointed to [the value of negative results](#). "We can learn nearly as much from an experiment that does not work as from one that does. Failure is not something to be avoided but rather something to be cultivated. That's a lesson from science that benefits not only laboratory research, but design, sport, engineering, art, entrepreneurship, and even daily life itself. All creative avenues yield the maximum when failures are embraced."

[Michael Shermer](#), publisher of the [Skeptic Magazine](#), wrote about [the importance of thinking "bottom up not top down"](#), since almost everything in nature and society happens this way. "Water is a bottom

up, self-organised emergent property of hydrogen and oxygen. Life is a bottom up, self-organised emergent property of organic molecules that coalesced into protein chains through nothing more than the input of energy into the system of Earth's early environment."

Economies are self-organised emergent processes of people trying to make a living, and democracy is a bottom-up emergent political system "specifically designed to displace top down kingdoms, theocracies, and dictatorships".

But most people don't see things that way, said Shermer. "Bottom up reasoning is counterintuitive. This is why so many people believe that life was designed from the top down, and why so many think that economies must be designed and that countries should be ruled from the top down."

[Roger Schank](#), a psychologist and computer scientist, proposed that we should all know [the true meaning of "experimentation"](#), which he said had been ruined by bad schooling, where pupils learn that scientists conduct experiments and if we copy exactly what they did in our high school labs we will get the results they got. "In effect we learn that experimentation is boring, is something done by scientists and has nothing to do with our daily lives."

Instead, he said, proper experiments are all about assessing and gathering evidence. "In other words, the scientific activity that surrounds experimentation is about thinking clearly in the face of evidence obtained as the result of an experiment. But people who don't see their actions as experiments, and those who don't know how to reason carefully from data, will continue to learn less well from their own experiences than those who do.

"Since most of us have learned the word 'experiment' in the context of a boring ninth grade science class, most people have long since learned to discount science and experimentation as being relevant to their lives."

[Lisa Randall](#), a physicist at Harvard University, argued that perhaps ["science" itself](#) would be a useful concept for wider appreciation. "The idea that we can systematically understand certain aspects of the world and make predictions based on what we've learned – while appreciating and categorising the extent and limitations of what we know – plays a big role in how we think.

"Many words that summarise the nature of science such as 'cause and effect', 'predictions', and 'experiments', as well as words that describe probabilistic results such as 'mean', 'median', 'standard deviation', and the notion of 'probability' itself help us understand more specifically what this means and how to interpret the world and behaviour within it."