

## Three Interviews

- 1) **The Science is a subset of the Art** (prominent chemist Antonín Holý 1936-2012, author of substances to treat hepatitis and HIV)
- 2) **The Redirection of Talent** (distinguished economist William Baumol 1922\*)
- 3) **What's the Economics?** (Nobel Laureate Clive Granger 1934-2009)

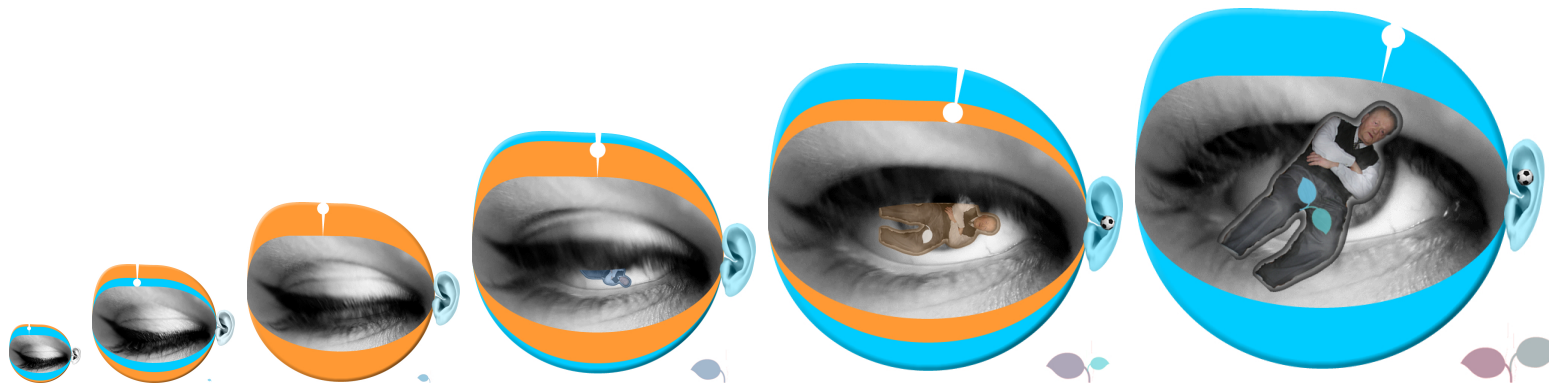
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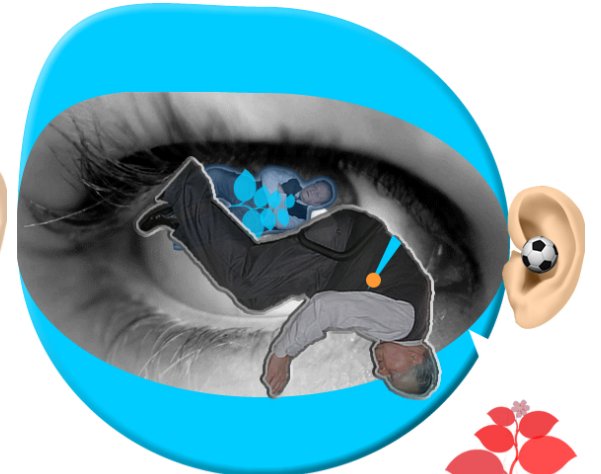
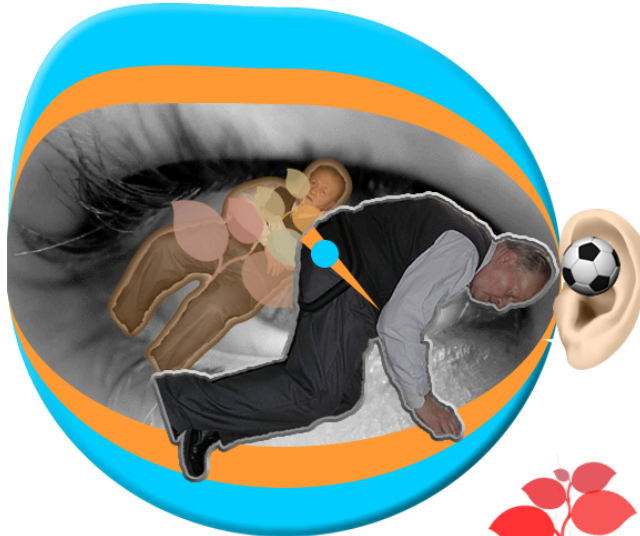


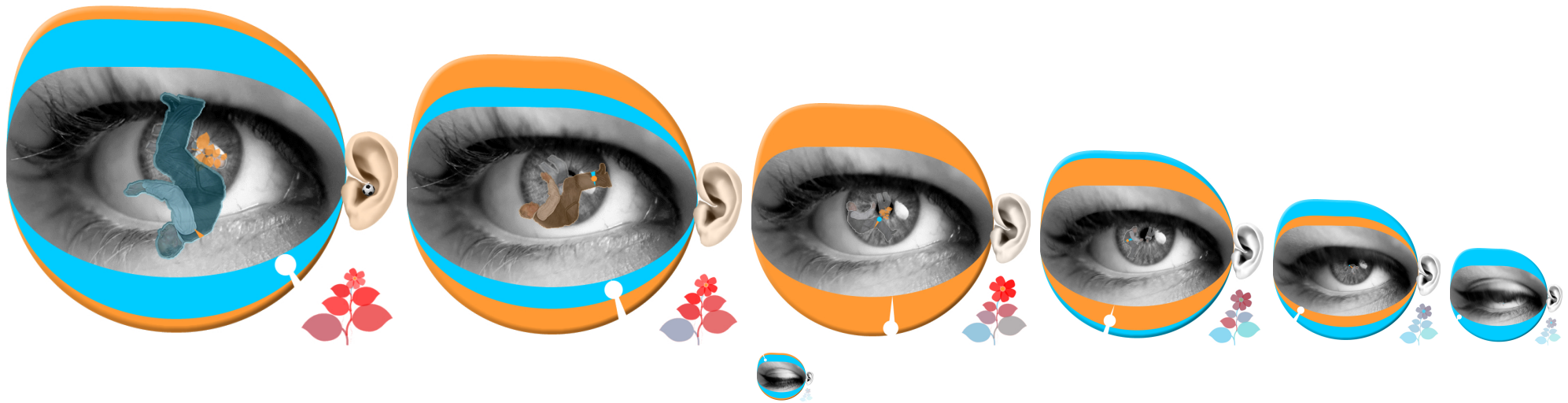
To support my Phd theses and results of my grant research in 1999, I asked 1) **Antonín Holý**, about the indivisibility of the art and science, 2) **William Baumol** about the alternative activities, 3) **Clive Granger** about the significance of the economics.

### The Science is a subset of the Art

the interview was published in 2004 in [blisty.cz](http://blisty.cz) and Národní Obroda







*Antonín Holý, lab, Fleming square, Prague, October 2004*

### **Humans consist of the carbon similar to the silicon. Could we be composed otherwise?**

We are based on water having various states and reacting with only few instances. Thanks to water we exist. Our composition is optimal. The silicon does not have such properties.

### **Does it happen by evolution as Darwin 1809-82 said?**

I'm not persuaded about that. Our time is too short for **evolution**. After all Darwin does not answer the origin of life, only transforms it one level further to its transition. And such things are backwardly unverifiable.

### **May diseases, killing the weaker, evolutionarily 'improve' gene?**

What that 'improvement' should be? In practice, it would lead to an ideal of a muscular dummy with high ability to reproduce and low IQ, and a female of similar parameters. Cultural human actively disposes of the handicaps by synthesis of experience, analysis, abstraction and generalization to predict and survive. It is matter of survival, not life extension.

### **Is AIDS, SARS, ebola result of a devastated environment reacting somehow?**

I don't believe in auto-regulative mechanisms, that nature helps itself without us, kind of Pangaea. Sure these problems are partially caused by humans: overpopulation, dirty water, promiscuity, extreme sexual practices, tight contact with animals. Rational people should overcome it.

### **Is society enough rational?**

From its behavior it is clearly irrational, in fact absolutely stupid. No wonder, with such proportion of individuals - dummies. If it really needs what is called 'politicians' or 'celebrities', its inability and stupidity just proves.

### **Could poverty, dirt induce, by virus mutation, a new malady?**

...kind of hybrid infection? The threat rather is that infection rapidly spreads by insects or directly among people. Global warming can establish it in our latitudes Czech Republic, where you can get from the hot countries by plane within hours. It should be monitored.

### **What do you think of euthanasia?**

It is a question of ethics whether and when to switch off devices keeping experimentally life signs of in fact already dead patient. I definitely reject euthanasia, as history shows the abuse of all what could be abused. Like an uneducated person would repair a complex space ship. We can unintentionally cause huge damages, or deliberately abuse new knowledge. It is a play with fire without water to extinguish.

### **It is related to cloning...**

...we and animals are enough. I can imagine just one result: mass production of army of robots in a brainwashed human body reacting to electronic orders of the 'Centre'.

## **Will computer, decoding genetic codes DNA / RNA, replace chemists?**

Computers only hasten unproductive work, but can't replace chemists working with real matter and time, except perhaps quantum chemistry, e.g. molecular modelling, with vast computations.

Nevertheless humans must always assess the reality of the result. By the way it was **Dieter Söll** who resolved 1964 a genetic code, synthesizing all 64 trinucleotides. Only then computers determined series of nucleotides. Söll was too young to get Nobel prize.

## **What are the greatest discoveries in Chemistry?**

Chemistry is a whole system of sciences. Modern chemistry stands on discoveries of **Lavoisier 1743-94**, **Mendeleev 1834-1907**, **Boyle 1627-91**, using findings of alchemists that stood on the knowledge acquired and practiced in Mesopotamia, Egypt, and elsewhere.

## **Fleming 1928 noticed vanishing bacteria on mold spots penicillin by chance. Is invention accident?**

"Accident" is a statistically inestimable option. Once I met my friend in Paris, with whom I had not been long time, and who was a visitor there too. For that you need to create conditions: you had to make a friend, be at the same place. Only then it could 'randomly' happen to meet at same time and space. And you had to look around yet. Also Fleming had to study growth of bacteria, till he noticed... So discovery is not entirely random, it is a different phenomenon than guessing 5 from 64 numbers. In a medicinal chemistry you are more likely to find something, by limitation of a 'leading structure'. Pharmaceutical companies build 'museums' - a collection of compounds for various purposes. If there is a new aim or method, they often successfully use this capacity. There is a whole department preparing a library of substances - mixture of substances of similar structure.

## **Scheme of benzene appeared in Kekulé's 1858 dream: a snake biting its own tale.**

I don't have such fantasy. It happens, I solve scientific problems unconsciously too. In such a half-dream a concrete solution sometimes arises, although not always I recall it.

## Is idea in science and in art, same?

They are close. Many scientists have an active attitude to art, but modern style of education excludes it. Like artists experimental scientists are good artisans. Idea is a logical synthesis of thoughts leading to a new quality, knowledge. The idea is first, then an accident can take place.

## Is a talent for science and art same?

There is a parallel. Many artistically oriented people are physicians. There are some though less, among chemists and technicians. In history, there was a broader perspective, today tendency is to specialize. Among arts and sciences are also principal differences. Artists immediately or at least soon may realize their ideas, for scientists it takes years.

## Some artworks took long time...

Maybe novels, but sculptor can realize its idea at once. In science it is slower. A difference between art and science is indeed real. Music, singing is not a real thing, although it utilizes real means.

## Centuries ago your job was unreal too.



## Those above, those below

Old Greeks Plato, Aristotle.. sought universality. Intelligence g factor **correlates across various types**. Why

we then tend to think artistic and scientific talent differ? Rising knowledge, population (**scale effect**) explains specialisms, but why to split art and science?

**Foucault**: exclusion of fools in Enlightenment 17th century was to get rid of undesirables, regulate jobless, wages. The split of science and art reduced competences for **those below** not to challenge **those above**. Be an expert **ONLY** in one thing: chemistry molecular, organic..music jazz, pop.. law, medicine, bakery..

**Rousseau**: art and science corrupt morality in favour of **those above**. The rich backed *Renaissance, ballet..*, the poor started *jazz, flamenco*. Art can be so independent of the power: art for art. Or we can say: 'corrupting art' isn't art that must reflect morals as well as effort potentially contributing to a strong character.

**Freud**: art is a higher form of sublimation transferring sexuality. But motivation in itself can't create art that needs talent. Successful

We always stand on the predecessors. You can't discover all from Pythagoras to nuclear reactions.

**Newton 1642-1727 defined the basics of physics, when few considered it real.**

True, but art depends on politics. Science not.

**Politics, society indirectly determines scientific subject. High morals would halt spread of HIV.**

Aids is really a consequence of promiscuity, but also depends on hygiene of genitals. There are also convincing studies of positive influence of TBC cure on HIV transmission.

**How would chemist define the matter?**

It is unnecessary, basic laws of matter is enough. Chemistry is based on the transition of the matter, knows its limited stability at the molecular level.

**Is there anything new, or synthesis with other field is inevitable?**

New options still exist, big reserves are in materials. Many areas just start: exploration of new alloys, divisions of proteins in weightless state. Physics and chemistry overlap in materials,

artists don't need to sublime, i.e. other motivation except sublimation exists.

Schopenhauer praised art as an escape from the meaningless world. Nietzsche thought art manifested the will to power.

For Rousseau Nietzsche flattered **those above** to support him superhuman as a marketing. For Nietzsche Rousseau misunderstood slavish morality of **those below**. The reality has various asymmetrical combinations statistics. Talents occur across social groups incl. poor: *Fitzgerald, Whitman, Warhol, Mucha*, having a disadvantage in spite of on average stronger incentive. Some wonder why many great artists were politically leftists: *Picasso, Chaplin, Brecht, Hemingway*.. The best are statistically less afraid to compete, less motivated to erect barriers curiosity prevails, market rises tending so to support at least verbally **those below**.

*Foucault 1926-1984* claimed discontinuity is more typical for society than progress being an ideology justifying the upper class

*Rousseau 1712-78* criticized modernity, progress, ownership, author of social contract: trade-off between rights and duties

*Freud 1856-1939* author of a non-linear model of

devices.

## Art is Science is Language Kant

criticized the pure reason and pure practice. **Wittgenstein** had said philosophy meta language points to nothing, only confuses, then left his claim. Understanding needs an interface of idea and experience: meta language logic that led with experiments to spaceship, opera, computer, jazz... Logic has its own inner laws, dynamics, evolution. Before **Mendeleev** chemistry was chaotic, prior to **Newton** physics didn't express gravitation, movement, light. Newton and **Da Vinci** read **Euclid**. Is so Euclid's geometry art or science? Both need creativity to reflect or change a reality. This way they are one. **Rousseau**'s natural man had no incentive to split art and science, as nothing was to split. The power structure divided art and science to subordinate humans by their specialisms justifying itself: it is as it is. Art and science differ as Chinese 中國, Russian русский, Arabic العربية ... Arts, sciences, languages express **same differently**.



**Kant 1724-1804** thought there was 'thing in itself'

personality: id-ego-superego, enabling to interpret irrational behavior.

**Fitzgerald 1917-96** one of the greatest singers, living in poor environment till her success

**Whitman 1819-1892** American national poet, using a free verse, struggling for money in his youth

**Warhol 1928-1987** son of indigent Slovak immigrants, most famous pop-artist with one of the most expensive artworks

**Mucha 1860-1939** Moravian artist once got a chance to make a poster of actress Bernhardt, he became famous in Paris.

## Is science given a-priori objectively, or it projects human factor?

Human factor always exists in communication, agreement about meaning of notions, common vocabulary. That phosphorus is phosphorus denoted as P, its atomic weight is 31.04 times of weight of atom of isotope of hydrogen 1H, etc. It is about terminology, units' definitions, names, their taxonomy. Name of abstract notions (like name of colors) are agreed. Science does not exist objectively. It is a method of exploration of objective realities and their relations, and logical synthesis for higher knowledge and potential utilization. For that the "language" is necessary, which leads to practical problems. Japanese



like Plato's pure idea - we can't understand or experience it.

**Wittgenstein 1889-1951** once thought philosophy (or pure notions) is a byproduct of misunderstanding of language.

**Mendeleev 1834-1907** properties of elements periodically repeat with their weights and can be organized accordingly

**Newton 1642-1726** calculus, optics, gravitation / motion laws. Inspired by Euclid, Descartes...

**Da Vinci 1452-1519** Painter, inventor... Inspired by Euclid...

**Euclid 400-300 BC** Mathematician, father of geometry...

**Rousseau 1712-78** Modern man wants to impress others not to satisfy himself (natural man did). Science, art corrupts morality.

translate all scientific and technical non-japanese literature to their letters. But there are things given in advance too, like life asymmetry: proteins consist of only L amino-nucleotides. It could be opposite. Unity and its consequence can be understood, given things harder.

### **May society exclude the best scientist?**

Rather in socialism (i.e. before 1989). I avoid to participate in grant commissions in case my acquaintance would apply. One juror reproached us why we having so much funds, applied for grant. Able person doesn't need to be lucky, or occasionally is unable to formulate its aim.

### **Science needs a material or social background. What would have done Edison, Einstein if he could not develop his talent?**

I can't identify with it. People can't think about science under such circumstances. They must leave, as Moroccans or Algerians moving to France, England. Hard to do science, if you can't feed your family.

### **Some surgeons deciding about life, have God complex. Chemist changing matter can**

### **Will other substance replace oil in future?**

People often think oil is replaceable, while it contains organic compounds not producible. It is not about cars, but rather chemical and pharmaceutical industry, which needs oil. That fear of exhaustion is justified.

### **What was a difference between research before and after 1989 in Czecho-Slovakia?**

According to my experience in my field, which could be perhaps generalized for all experimental natural and technical sciences, there were much less means, but were guaranteed. Much less bureaucracy and obstacles, possibility to focus on work. The young appreciated to work in science, only the best could be chosen. They were much cannier, inventive, less focused on money. They were not so predatory or did not reveal their ambitions. Except quality of the work, there was at least one barrier - relations among people were easier. As they did not care of money, did not need to cheat. Why would anybody fraudulently usurp someone's else work, whose author was not? That all can be contrarily applied after 1989. Moreover before Westerners had considered us sort of 'freaks' having so advantages in everything or at least special position. Today we are members of the painfully hobbling clan of wolves hurtling for a vision of money, unfairly hindering, and ruthlessly attacking each other. We still assess ourselves, count publications, scores, quotes, doing ranks... It seems to me we lost the sense for the meaning of science. Social appreciation of science, already before not high, has downgraded more. Much richer entrepreneurs, new riches, pop stars have moved before the science. For politicians and

**have similar feelings.**

K Čapek wrote about it in *Krakatit* 1922, J Verne in *The Begum's Fortune* 1879. If you label 'chemists' people from the Japanese sect, that prepared gas to kill in Tokyo metro, then perhaps yes. It is always matter of the perverse logic.

government (left, middle, right) education is unimportant. Why it should be? In spite of all declarations, they literally care a damn about science, with a mockery.

### **The Redirection of Talent**

the interview was published in 2003 in [blisty.cz](http://blisty.cz), [Respekt](#), and [Nove Slovo](#)

If talented people cannot pursue productive activities, they direct their talent towards rent-seeking or philosophical reasoning. In my Phd thesis, I divided the 'alternative activities' to a) rent-seeking activities, litigation..., b) sophisticated activities (chess, chess composition, philosophy)... and c) pathological like psychopathy, neurosis, psychosis... However rent-seeking activities aren't (cognitively) enough interesting to attract the talent. Ex-post interpretation of success as a result of a talent is unreliable, as it depends on opportunities, motivation, accident. Separation of talents e.g. talent for 'business', 'art', 'whatever' is an illusion, as there is a correlation among various types of intelligence (g factor). Baumol's claiming 'entrepreneurship being a special sort of talent' shows the hidden ideology of 'market economics', justifying the social order.

**• In your article ‘Entrepreneurship: Productive, Unproductive, and Destructive’ (1990) you argue that a society which does not support innovative activities forces people to redirect their talent into substitute activity with negligible or negative social return such as crime, financial speculation, litigation. A bit more backward Russia has been very successful in chess playing, while the more advanced Western Europe and the US have been producing technological innovation. Is chess a substitute for the talented?**

Talented individuals can enter all sorts of occupations. But entrepreneurship is a special sort of talent. The entrepreneur is often not the inventor but the one who takes the invention and makes sure it is put to use in a way that gives him wealth, power or prestige. Entrepreneurs become chess players only if it is a high prestige activity in the society and, preferably, if it is well rewarded.

• You say that the rules of game are the underlying factor which determines whether gifted persons choose to go in for productive or unproductive activity. Does this mean that people like Al Capone, Bin Laden or Hitler were just as intelligent as Edison, Einstein or Stravinsky? Of course, Einstein and Stravinsky were not primarily entrepreneurs, and entrepreneurs are not always brilliant people. They are characterized by ability to organize, persuade others, and willingness to take risks. Their talents may be great but are very different from those of researches or composers.

• So you make a difference between ‘talent for the arts and sciences’ and ‘talent for business’. But surely gifted people are much more likely to be successful both in business and in the arts and sciences than people without talent. In 1904, the psychologist Spearman discovered the so called ‘g factor’ which causes positive correlations among individual differences in performance, even in very different cognitive tasks. Thus Spearman argues that there is talent is universal, individual specific types of talent for different areas of human activity do not exist.

That may be true, but I am not qualified to judge. I suspect, however, that not all psychologists agree with Spearman on this point.

• Surely if gifted people have no access to any high prestige activity, they may decide to go in for playing chess – because although this activity may not be prestigious, it provides them with intellectual challenge.

I agree with you in general, but I think people differ considerably in their preferences and that some people are ready to sacrifice many things, including interest and enjoyment in what they do, to obtain wealth, power or prestige.

**RESPEKT**

**VAN GOGH BYL HORŠÍ OBCHODNÍK**

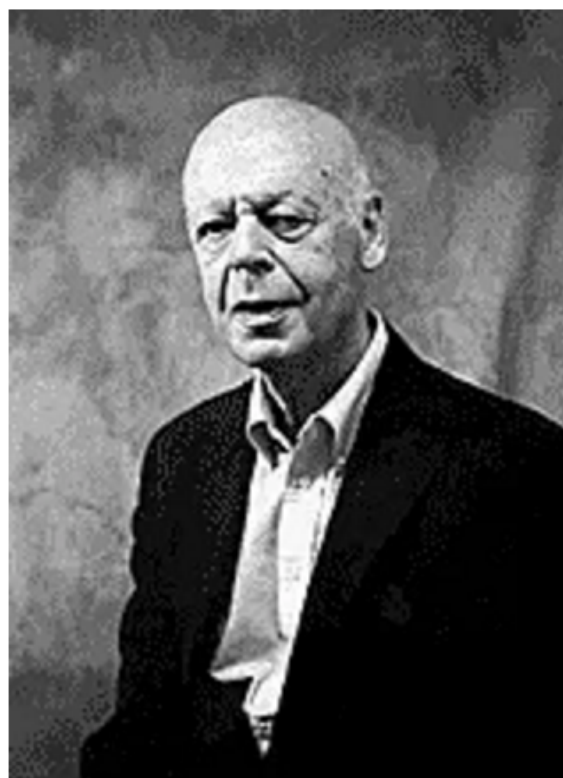


Politika • Ekonomika

# VAN GOGH BYL HORŠÍ OBCHODNÍK

**Miroslav Brada**

10. 8. 2003



**• If Edison had been born in Africa, in the Middle Ages or somewhere he could not use his talent, what would he have done with his life? Are mental disorders such as paranoia, mania or schizophrenia alternative pathological activities for people who cannot apply their talent to any creative activity?**

I don't know what Edison might have done. He might have designed better suits of armor or better weapons. I can't answer your last question - I am not a psychologist.

**• Maybe the other people would have killed Edison because they would not have understood his thinking. Or maybe, they would have been afraid that he would become more successful than they. What is the role of the social background (envy, law, values, culture) in the process of innovation?**

The social background is crucial. For example, I argue that the rule of law is essential for a society that not only creates many inventions but puts them to widespread and effective use.

**• Both Salvador Dalí and van Gogh were comparably brilliant painters. While the former became rich and famous, the latter was poor and unknown (in his lifetime). Does this mean that Dalí was more intelligent than Gogh or that Dalí lived in a more conducive environment?**

No, to me it means that van Gogh had little business ability and much artistic talent, while Dali was an effective and dedicated businessman with (in my view) somewhat less artistic talent.

**• According to some IQ studies black people are on average less intelligent than white people. However these 'less-smart' blacks have been able to create jazz - a very complicated music. Is jazz also an alternative activity for talented individuals?**

I am more than sceptical about the studies that claim black people are less intelligent than others. Many blacks are talented in other ways as well, and many are very intelligent. However, I would say that the work of a talented jazz musician is closer to that of Stravinsky.

**• But the blacks were discriminated against in the US. They could be neither entrepreneurs nor scientists nor artists. Maybe this is why some of them have redirected their talent into 'unofficial' music – (jazz) or sports (basketball). What do you think of the view that if the**

**blacks had not been discriminated against, they would have devoted less time to jazz and more time to other activities?**

While even during the period of greatest discrimination some black people succeeded as scientists, artists and entrepreneurs, the number was small. I am sure you are right that this served to increase the number of jazz composers and performers.

• **After the fall of communism in Eastern Europe, many people there became rich as because of whom they knew rather than through their talent. Are money and social success really reliable criteria to assess talent and intelligence (i.e. the more money one has the greater talent he has)?**

Absolutely not. There are many stupid rich men who obtained their wealth by accident, brute force or unimaginative crime. And of course there are many brilliant people who are not rich.

• **What is the most reliable criterion to measure talent and intelligence?**

You must ask the psychologists, not the economists.

• **The Japanese have been very successful in adopting new technologies. But, since the 1990s, Japan has been struggling economically. Why?**

I am not an expert on the Japanese economy, but I understand that the main source of its economic problems are institutional and macroeconomic behaviour, notably the way in which the banks select those to whom they will lend money. Also, innovation in Japan seems to be characterized by large firm activity, unlike North America where inventions like the airplane, the telephone, etc. were first created by private individuals, with most such inventions afterwards greatly improved by large firms. Japan, perhaps as a consequence, seems to be much better at improving inventions than at creating them in the first place.

• **Why has China's economic performance been improving for the past two decades - despite its democratic deficit?**

I think economic performance is stimulated more directly by the presence of a market economy than by democracy, though either of these tends to lead toward the other.

• **George Soros in his book *Soros on Soros* (1995) says that communism imploded from within and that the same can happen with capitalism. Does the Enron affair or the default of Argentina mean that 'pure' capitalism cannot survive? Is it necessary to reform capitalism?**

No system can be expected to survive forever, but I see no evidence that capitalism will die very soon. Of course it is desirable to reform capitalism, by forcing accounting firms to be more honest, protecting the environment, helping poor people, etc. But that is not why capitalism seems likely to survive for a considerable time period.

• **What are your predictions regarding Euro-Dollar exchange rate?**

I have no idea.

• **You emphasize that economic growth depends on innovative activities that require collaboration rather than competition. Is state intervention inevitable if innovation is to take place?**

State intervention can help growth and the innovative process, particularly when government pays for innovation and basic research that private business will not carry out voluntarily. But none of this intervention is required to obtain the benefits of collaboration among firms, that the firms usually arrange for themselves. Incidentally, I think the growth process requires both some collaboration and very vigorous competition among inventive firms at the same time.

• **Solow's growth theory implies convergence, while Lenin's theory of imperialism argues that developed countries and regions grow at the expense of less developed ones. The gap between the rich and the poor has been generally increasing. Does this mean that Lenin's theory was right?**

The evidence indicates that over the last half century, the richest 10 to 25 countries have been converging. There has also been some convergence among the poorer countries among themselves but they have been falling further behind the wealthiest economies. I do not, however, think this is attributable to what Lenin's model claims to be the problem. For example, in many backward economies stupid military juntas have effectively done many things that prevented growth.



• **Gérard Roland ascribes the unexpected output fall (at the beginning of the transition process in the former communist countries) to the disruption of output following liberalization: it takes some time for one efficient enterprise to find another efficient enterprise and for both of them to start producing. So the aggregate output falls due to time spent by searching. What is your explanation of the output fall in the transition economies?**

I think the Roland explanation is a valid part of the story, but it also takes time for managers to learn how to manage efficiency, to be guided by market demand, to reorganize the firm. And workers have to learn not to follow the maxim 'we pretend to work and they pretend to pay us'. Remember, after World War II it took even the miracle economies of the Far East 10 to 20 years to begin to catch up.

• **Economist Jaroslav Vaněk (Emeritus Professor at Cornell University) says in one interview that fame in the field of economics is artificial. In his view Americans openly talk about the 'Chicago mafia' which apparently influences who will win a Nobel Prize. You have been proposed for the Nobel Prize a few times. Is Vaněk right?**

I know I have been proposed for the prize, but I don't think there is a Chicago mafia that controls what happens in Stockholm. It may be relevant that last month I was the first academic economist to receive in Stockholm the prestigious International Award for Entrepreneurship and Small Business Research.

• **Some people say that the science of economics stagnates and that economists focus on mathematical computations unrelated to reality. What are the greatest economic discoveries and which problems should today's economists investigate?**

It is impossible to determine what the greatest economic discoveries are. I would include the value theory of the classical economists, the theory of the firm of A.A. Cournot, Ricardo's law of comparative advantage, Walras' general equilibrium theory and Keynes analysis of employment and inflation. There is no limit to what should be studied, but to me an important priority is analysis of the reasons the free market economies have achieved productivity, innovation, living standards and growth unequalled for any length of time by any other type of economy, ancient or recent.

# What's economics?

the interview was published in 2004 in Týden

I scrutinized various aspects of economics, including its validity to predict and manage society. To my surprise, Clive refused the '18th century' criterion of the science: that experiment must be repeatable. The uncertainty or triviality of the predictions in economics then serves as an excuse to avoid responsibility, as it was financial crisis 2008, crash of the LTCM 1998, etc. Without objective criteria (like repeated experiments), economics becomes only a 'modern' religion justifying the status-quo in society.

Dec. 2004  
Týden

## Ekonomika

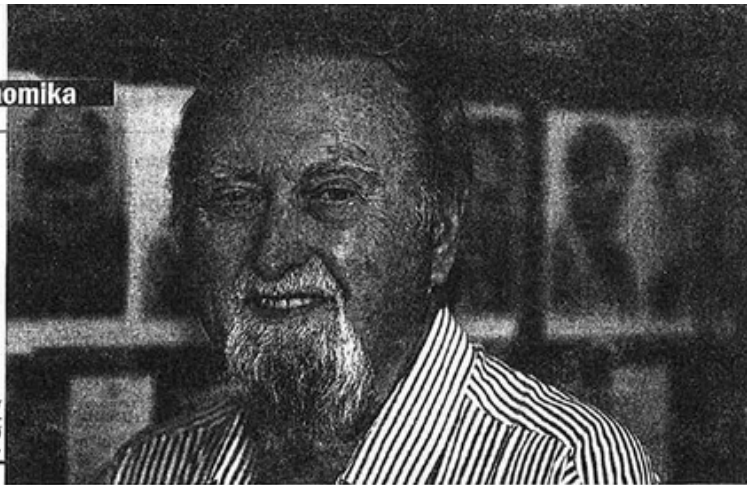


Foto: L. Z. AP. 3. 4. ARCHIV. 5. ČTK

Clive Granger patří mezi nejrespektovanější žijící ekonomy.

Rozhovor

## Čína a Indie mohou dominovat

V následujících čtyřech letech bude dolar k euru oslabovat

Podle nositele Nobelovy ceny za ekonomii z roku 2003 Cliva Grangera v obsáhlejší studii neobstojí závěr, že růst ceny cigaret snižuje jejich konzumaci.

### Může ekonometrie dokázat boha?

Říká se, že jistý matematik navštívil krále na dalekém východě. Dostal za úkol dokázat existenci boha. Napsal složitý vzorec a řekl: „Toto je důkaz.“ Král nechťel vypadat hloupě, a tak důkaz přijal.

### Také vy máte nějaký důkaz?

Myslím si, že neexistuje smysluplná odpověď na otázku, zda boha je.

Pokud jsou vhodné údaje, dají se vždy analyzovat. Také naše studie procesu odlesňování Amazonie se mohla uskutečnit jen díky dostatečným údajům z tohoto regionu. Beckerův závěr o konzumaci cigaret podle mě v rozsáhlejší studii neobstojí. Pro

### Clive Granger (70)

Vedle filozofa Bertranda Russella a fyzika Briana Josephsona třetí Walesan oceněný Nobelovou cenou. Prominentní ekonometr spolupracoval s mnohými slavnými statistiky a ekonomy, mezi jinými s tvůrci teorie her Ocarem Morgenstemem a Johnem von Neumannem. Granger se narodil roku 1934 ve Swansea. Vyrostl ekonomii u Nottinghamu, potom v

velmi důležitá témata, která jmenujete, chybějí vhodné údaje, proto se na to nedá jednoznačně odpovědět.

Je souvislost mezi testy IQ a ekonometrií? Pochybuji o tom. Adam Smith hovořil o empirických vztazích.

Psychologie má ale podobné statistické metody a abstrakce: HDP-intelekt, kapitál-ego. Proč nesloučit ekonomii a psychologii do jednoho předmětu?

Souhlasím s tím, že je třeba více společných prací mezi psychologii a ekonomii. Metoda však závisí spíše na typu údajů než na tématu. Například politologie využívá naše

Je statisticky odhalitelná druhá světová válka, Einsteinova teorie, útok z 11. září 2001 a jiné nečekané události? Statistika potřebuje víc než jeden případ. Takže k těmto událostem neumí říci nic užitečného.

Je minulost odvoditelná ze současných údajů? Například z dat o hospodářském krachu Argentiny (2001) bychom spočítali, že takzvaný černý pátek, den, kdy v USA spadly akciové trhy, byl 29. říjen 1929?

Ani jedna metoda pro analýzu časových řad se v principu nedá použít pro výpočet minulých událostí. Tyto metody se totiž velmi silně spoléhají na „směřování času“ a často specifickou cestu modelů. Odpověď zní tedy ne.

Údaje reprezentují realitu, již jsou samy součástí. Jak analýzou údajů odhalíte nějaký vztah, stává se zase jen údajem, údajem o vztahu. To připomíná hada kousajícího se do ocasu. Samotné údaje nejsou ani zdaleka dokonalé. Abychom tyto problémy mohli nějak uchopit, vyvinuli jsme takzvané „robustní“ metody. Nejlepší „odhalené vztahy“ jsou mixy analýzy údajů a specifických teoretických modelů. To jsou jen částečné údaje.

Není potom statistika příliš nekompletní na to, aby byla spolehlivá? Statistikou nikdy nic nedokážete. Pouze poskytnete dostatek evidence k tomu, aby lidé změnili svoje konání. Například přestali kouřit!



Získ Nobelovy ceny v loňském roce přinesl Walesanovi Grangerovi slávu a peníze.

Může se černý pátek opakovat? Černý pátek byla náhodná událost. Může se

Zetřím se jinak. Slepec může chápat fyzické vlastnosti světa, i když je nevidí. Dá se pochopit realita jen analýzou údajů? Některé teoretici přeceňují míru, v jaké jejich model „vysvětluje“ ekonomiku. Vždy totiž existují i jiné alternativní modely, přičemž teorie často ani nejsou testované použitím dat. Já nejsem teoretik.

### Nahradí ekonomy software?

Když se zadíváme dostatečně daleko dopředu, bude počítač rozhodovat o všem. Program PCGETS už dokáže vytvořit reálný dynamický výstup a modely vícenásobných vstupů. Také probíhají diskuse, jak tyto přístupy zevšeobecnit.

Dá se celá ekonometrie odvodit od nějaké základní metody?

Není to žádná univerzální metoda, protože v realitě je příliš mnoho různých typů údajů. Historicky první metodou je možná chf-kvadrát použitý na tabulce v základním 2\*2 rozměru.

Jak odhadujete vývoj kursu euro-dolar? Následující čtyři roky bude dolar relativně klesat. Za toto období je příliš vzdálená představa.

## Lidé a podniky

### Noví lidé v ČEB

Státem kontrolovaná Česká exportní banka (ČEB) nově vytvořila pozici personálního ředitele. Místo převzme Lubica Ferencová. Absolventka Pedagogické fakulty Univerzity Komenského v Bratislavě v minulosti pracovala v několika výrobních firmách. Ředitelem vnitřního auditu ČEB se stal Jiří Franc (56). V letech 1992-1998 byl generálním tajemníkem pražské burzy. Akcie ČEB vlastní ministerstva financí, průmyslu a obchodu, zahraniční a zemědělství. Dalším akcionářem je státní pojišťovací společnost EGAP.



### Šantrůček místo Režničkové

Šéf zastoupení Českých aerolinií v Británii Bohuslav Šantrůček (56) byl jmenován viceprezidentem pro marketing a prodej. Jeho předchůdkyně Zuzana Režničková firmu opustila na konci listopadu. Šantrůček pracuje v ČSA od začátku sedmdesátých let. Řídil například zastoupení firmy v Kodani nebo měl pod sebou Řecko a Kypr. Na začátku devadesátých let byl krátce náměstkem generálního ředitele.

### Zavoral v čele SAS ČR

Česká pobočka amerického softwarového koncernu SAS Institute má nového ředitele. Zdeňka Pance, jenž po pěti letech firmu opouští, vystřídal Petr Zavoral (44). Absolvent Vysoké školy dopravní v Žilíně v minulosti pracoval pro německou společnost SAP. Později přešel ke KPMG. Někdy čas v jejich službách pobýval v Kanadě. Naposledy působil ve funkci obchodního ředitele Oracle Czech. SAS Institute vlastní ze dvou třetin předseda správní rady a výkonný ředitel James Good-



Yasu na úzký výhled, zvláště v době, kdy operuje v nám úplně vzdálené rovině.

**Od technické revoluce lidé produkuje obrovská množství toxického a radioaktivního odpadu. Stále je přitom slyšet: „Existuje málo dat pro potvrzení toho, že se přírodní prostředí zhoršuje.“ To zní jako výmluva.**

Jde o rozhodování v nejistotě. Nic není jisté, protože údajů je vždy málo. Mnoho lidí kouří, i když narůstají důkazy, že je to nebezpečné. Spousta dalších se rozhodlo, že ten risk jim za to nestojí, a přestali. Potrvá dlouho, než se nasbírá dostatek údajů, které všechny přesvědčí o globálním oteplování. Mnohým z nás však už tyto údaje stačí, abychom pro jistotu udělali předběžné kroky.

**Podle Garyho Beckera, nositele Nobelovy ceny, snižuje zvyšující se cena cigaret jejich spotřebu. Může statistika potvrdit správnost legalizace drog, prostituce či eutanazie?**

...bil na Princetonské univerzitě, kde se v roce 1960 oženil. S manželkou Patricií má syna Marka a dceru Claire. Od roku 1973 zkoumá o uči na Kalifornské univerzitě v San Diegu. Zajímá ho ekonometrie, což je statistická analýza ekonomických údajů. Proslavil se modelem příčinnosti: jestli například ve statistické rovině ceny víni v jistém časovém rozmezí zplnesní odhad ceny třešňí, cena víni zapříčiňuje cenu třešňí. Ekonomové Thurman a Fisher jejím aplikováním na počet vajec a kuřat mezi lety 1930 až 1983 v USA „zjistili“, že první bylo vejce. Další Grangerův objev je kointegrace: když se pohyblivé časové řady vhodně kombinují, chovají se jako nepohyblivé časové řady. Jeho postupy používá americký Fed (americká centrální banka) či studie škod a užtiku odlesňování Amazonie. Nobelovu cenu obdržel s kolegou Robertem Englem v roce 2003. V době rozhovoru, který probíhal prostřednictvím e-mailu, pobýval na Novém Zélandě, kde je hostujícím profesorem na univerzitě v Canterbury. Ve volném čase se rád prochází po pláži, dříve surfoval.

...metody pro analýzu časových řad.

**Závisej ekonomika na politice?**

Politika často a ne vždy právě nejšťastněji ovlivňuje ekonomiku. Ekonomika zase má vliv na volby.

**V ekonomii se experiment neopakuje, což je požadavek vědy. Je ekonomie věda? Je meteorologie či oceánologie věda? Definice vědy z osmnáctého století už není podstatná. Současná odpověď na otázku „Je ekonomie věda?“ zní „Koho to zajímá?“**

**Není to trochu arogantní postoj? Jaká je tedy definice vědy ve dvacátém prvním století?**

Důvod, proč si přejeme, aby ekonomie byla klasifikována jako věda, je jen jeden: chceme více peněz na výzkum. Pro praktikujícího ekonoma nemá jinak tato otázka velký, jestli vůbec nějaký význam.

...tedy objevit kdykoli, i když pravděpodobnost je velmi nízká.

**Znamená „náhodná událost“, že černý pátek a jiné důležité události byly a jsou neodvratné? Pokud umíme správně předpovídat, vyhnout se dá všemu. Můžete se zeptat, zda je možné předpovídat zemětřesení či výbuch sopky? Zatím ne. Dá se však určit pravděpodobnost těchto a jim předcházejících událostí, což zvýší pravděpodobnost správnosti předpovědi. Platí to i pro finanční, bankovní či měnové krize.**

**Realita se stále mění, přičemž údaje jsou jen statické útržky. Není to problém?**

Údaje jsou vzorkem z jistého, časem se měnícího rozložení. Předpoklad je, že změna je příliš malá. A to nám umožňuje testovat různé alternativní modely a teorie.

...vídá.

**Mnoho výzkumných firem se stěhuje do Číny, Japonska, Koreje. Bude Asie ekonomicky vládnout? Země, které mohou ekonomicky dominovat, jsou Čína a Indie. Nebude to ale v nejbližších osmi letech.**

**Jsou vaše předpovědi ohledně dolaru, Číny a Indie podloženy statistikou?**

Čína a Indie měly posledních dvacet let nejvyšší růst vůbec, žije tam třetina světové populace. Strategie jejich růstu jim dává výhodu nad přirozenou soutěživou rovnováhou. Kvalita množství dat nejsou zatím dostatečné pro použití složitých technik, ale jednoduchý odhad z dostupných dat už stačí na všeobecný úsudek.

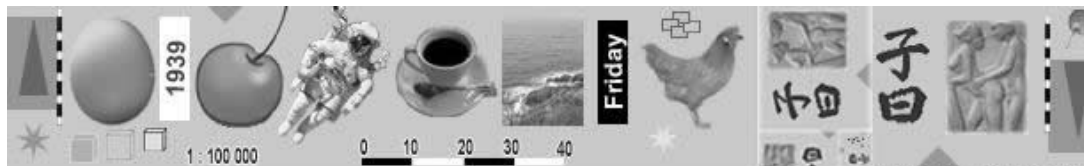
Miroslav Brada ■

autor přichází v české pobočce bernátské společnosti Accenture

night.

## Další změny v Telecomu

Bývalý manažer britské telekomunikační společnosti BT Group **Simon Anthony Burckhardt** se stal výkonným ředitelem Českého Telecomu pro marketing. Kromě BT Group pracoval v poradenské firmě Route 30 a Charity Blue. Vedoucí Telecomu zároveň rozhodlo, že novým jednatelem dceřiného Eurotelu Praha bude **Martin Bek** (35), jenž je výkonným ředitelem provozní divize mobilního operátora. Bek nahradí **Pavla Klimůška** (40), který současně rezignoval na místo člena představenstva Českého Telecomu.



Miro. Brada. 2005

## • Is econometrics applicable to prove God?

It is said that once a statistician, or perhaps mathematician, visited a King in a far eastern country and was asked to prove the existence of god, he wrote down a very complicated mathematical formula, and said 'there is my proof'. The King not wanting to admit that he did not understand, accepted it.

## • What's your proof?

My personal philosophy is that God operates on an entirely different plane to us and therefore there is no way that we can make sensible responses to questions like 'do you believe in God'.

## • What was your inspiration for your discoveries?

For cointegration I tried to disprove a remark by a co-worker, but my proof that he was correct suggested implications in various parts of the area in which I had been working.

## • Does invention in econometrics accord with science, art or rather philosophy?

I think that a lot of the best discoveries in econometrics involve developments that are both generalisations and also simplifications. These can then be seen to unify new parts of the field, although on occasion a new type of mathematics is required. I think we compare better with scientists than with

artists, who are very free-flowing in perspective, or with philosophers who use introspection more than we do.

- **How much economics depends on politics?**

Politics continually interacts with economics, often in unhelpful ways. Of course the economy can impact an election.

- **Russia was worse (on average) than West in technological innovations, but better in chess.**

**Does political system determine kind of innovations?**

Under Communism I understand that intellectuals were not allowed to study certain types of data, particularly economic data, so Russia became very strong in the area of Probability Theory (and Mathematics generally) but weak in classical Statistics, with Econometrics almost non-existent, but Operations Research quite strong, such as linear and non-linear programming. I think these were just facts of life in Russia for many years.

Society produces huge amounts of CO<sub>2</sub>, toxic and radioactive material. We still hear: "there is not enough data to prove it damages our environment"... ...there is never enough data to be 100% certain of something, but it is a question of making decisions under uncertain circumstances. Many people kept smoking despite the increasing evidence that it was dangerous, but equally many others thought that the risk was not worth it and stopped. With Global Warming it will take a very long time to accumulate sufficient evidence for it to be completely convincing to some, nevertheless the evidence is sufficient for many for us to take some preliminary steps, as insurance.

- **...If all statistics confirm something, after it's already evident, it seems trivial...**

if they are all trivial, why is there such a fight to accept them by many economists?

- **If economics can't repeat experiments, is it a science yet?**

Is meteorology or oceanography a science? The 18th century definition of a science is no longer relevant. The current answer to the question 'is economics a science' is 'who cares?'

- **Isn't "who cares" a bit arrogant response?**

The only practical reason we would want to be classified as a science is that we may then get bigger research awards. In any other way, the question has few if any relevant features for the practicing

economist.

• **Hume in 18th century wrote: "A precedes B" does not always mean "A causes B". Quantum physics in 20th century has reconfirmed that...**

Hume is correct in saying that 'A precedes B' is a necessary condition for causality but not a sufficient one. My own definition needs the further condition that A contains information about B that is in no other preceding variable. I believe that time-precedence is a necessary condition for causality and have not seen any 'testable' definition without this requirement.

• **Could statistics uncover events like WW II, 11.9.2001, Einstein's theory?**

Statistics require a sample of more than one, unless you are a strong Bayesian, and so could not make useful statements on the topics mentioned.

• **Is history derivable from the present? E.g. the default of Argentina (2001), would backwardly determine Black Friday (1929)...**

All time series methods are essentially time non-reversible, relying heavily on the 'arrow of time' and often on 'path-specific' models. Thus, the answer is no.

• **Could Black Friday repeat itself?**

Black Friday was a stochastic event, it could occur again at any time but has a very small probability.

• **So the 'stochastic' events such as Black Friday are unpredictable and thus unavoidable?**

Any event is avoidable, or at least its effects can be reduced if it can be successfully forecast. You can ask-- can we forecast an earthquake or a volcanic eruption? It is impossible at present to do that but you can predict the probability of such an event and certain prior events lead to increases in this probability. The same applies to financial crises, such as banking or currency crises. If by 'stochastic' you mean 'somewhat forecastable but not perfectly' then the answer is yes.

• **Data is static, while reality is dynamic...**

Data is a sample from the distribution, which itself is changing through time. One can only assume that the dynamics is slow enough for the data to allow us to test successfully between interesting alternative models or theories.

- **Data represents and is - in itself - reality. If data reveals relationship, this relationship instantly becomes the new data (about relationship) - like a snake eating its own tale (recursion)...**

Data itself is far from perfect and econometricians and statisticians have developed 'robust' methods to get around some of these problems. The best "revealed relationships" are mixtures of data analysis and theoretical forms of a specific type. Thus this is only partially data.

- **Statistics is then maybe too incomplete to be valid and reliable...**

You can never 'prove' anything with statistics but at least one can produce enough evidence to make people change their behavior, e.g. stop smoking!

- **A blind person don't see the light, although understands its mathematical properties (Husserl's phenomenology). Is reality understandable only through data analysis?**

I think that some theorists are over-optimistic in the extent to which they think they can 'understand' the economy from their model, given that there exist alternative theoretical models and that their model has not been evaluated by the use of data.

- **Gary Becker, Nobel laureate (1992), claims: higher pricing of cigarettes reduces their consumption. Could data analysis resolve controversies of the death penalty, legalization of drugs / euthanasia?**

Data analysis is certainly applicable if good and appropriate data is available. For example, my study with other economists on the process of deforestation in the Amazon region of Brazil, could only have been conducted with a good panel from that region. I would doubt if Becker's result about the pricing of cigarettes holds up to a comprehensive study! For many of the important topics you mention a suitable data set may not be available.

- **Could data uncover cyclic causality: A causes B, B causes C, and C causes A?**

In my set up only the past can cause the future, but there can be several causes. Your question has to be framed as  $A(n)$  causes  $B(n+1)$ ,  $B(n)$  causes  $C(n+1)$ , and  $C(n)$  causes  $A(n+1)$ , all of which could occur from a data supported model, which is the chain you identify, but with occurrences at different times!

- **Are all methods derivable from one "core" method?**

There is no basic method as there are too many different types of data.

- **What's the first econometric method?**

Historically, I would guess the chi-square used on a two-by-two table.

- **Maybe the bootstrap will unite the whole methodology.**

The bootstrap is a useful simulation method to investigate the properties of a given model but is not helpful in suggesting alternative models as the economy evolves.

- **May different methods applied to the same data, contradict each other? One would conclude: "egg came first", another: "chicken came first".**

Clearly two empirical models could produce contradictory results if one is carefully identified, tested and evaluated and the other is not. It could depend on the set of explanatory variables used, Model A could use one set and model B a quite different set. One obvious case where the problem could occur is with 'structural models' in which the model is built to use constraints implied by a theory, whereas the alternative models has no such constraints. If the theory is wrong the situation of the problem could occur, I think.

- **Statistical method is like an interface of data and hypothesis. Right?**

I view an interface as the point where two rather different fields that are each well developed find themselves confronting each other on a particular topic, usually an applied one, which has specific restrictions. It is common to find that the two fields have similar concepts but with different names and each has results of interest not known in the other field. Examples could be policy analysis in economics and control theory in engineering or time series econometrics and oceanography.

- **Is econometrics 'ideologically' connected with IQ tests - psychometrics?**

I doubt it, Adam Smith was talking about empirical relations, I think.

- **But both use similar abstractions: GDP-intellect, capital-ego, and methods: F-test, chi-square.**

### **Why not to merge economics with psychology?**

What drives the methods are the properties of the data rather than the concepts, for example political science has lots of time series and uses our techniques. I agree that there should be more work in common between psychology and economics.

- **Will software 'develop' economic models on its own?**

If you go far enough ahead all decisions will be made by computers. The program PCGETS already produces adequate dynamic single output/multiple input models and discussions about how such approaches can be generalized are happening.

- **Does the increasing power of computers improve economic predictions?**

The forecastability of economic variables is largely an inherent property of the variable. The efficient market theory suggests that stock market returns are inherently unforecastable, and subsequent experience suggests that this is correct. Other variables are more forecastable and we have done better as techniques and data have improved, such as the forecasts of electricity demand, particularly daily usage. The most important variables are in this intermediate region, with some hope of improvements in the future but never certainty!

- **What is your guess about the Euro/Dollar exchange rate?**

Over the next four years the dollar will get relatively weaker, beyond that is too far to forecast at present.

- **Will Asian economies - China, Japan, Korea - dominate?**

The Asian economies that will eventually dominate are China and India, however not for the next eight years or so.

- **Are your predictions regarding dollar, China, India, justified by statistical methodology?**

China and India have had the highest growth rates of any country in the last twenty years, they represent a third of the worlds' population and their strategies for further growth do not put them on naturally competing paths. The quantity and quality of data available is not yet sufficient to use sophisticated techniques but a simple plot and extrapolation is enough for general remarks.