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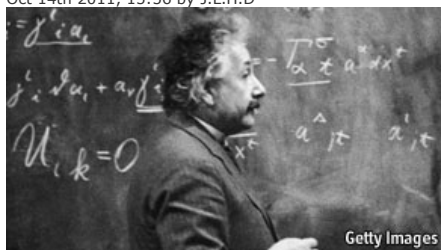
# Which MBA?

## Which MBA?

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### Business-school research: The physics-envy problem

Oct 14th 2011, 15:56 by J.L.H.D



Getty Images

IN WRITING about the lack of globalisation in business schools, my colleague noted the problem of physics envy: the need to reduce a series of complicated situations to clear, broadly applicable lessons. But while the laws of gravity and thermodynamics work the same way in Vancouver, Seoul or Athens, businesses do not. New entrants to a market find this out fairly quickly, or fail trying. But under the circumstances, are the newly minted MBAs prepared to shed their preconceptions and recognise such differences in time to avoid failure?

The physics-envy problem plagues business research as well. Part of the problem is the data sets researchers usually have to work with. Even concentrating solely on American businesses, as many professors do, there are significant variations as to which data get collected. Comparing businesses in different states often requires sifting through regional or national sources. This means including less information about each business in particular. Trying to compare, say, small businesses from two different countries, in a statistically significant way, does not allow the researcher a whole lot of room to draw conclusions once all other factors are accounted for. In social-science research one can have breadth or depth, but almost never both. Academics are more likely to get grants, or tenure, if their research errs on the side of breadth.

In part this is an issue of reputation: business schools have long yearned to show that management is just as worthy of respect and research dollars as any science. This physics-envy is not unique to business schools; it plagues other social sciences, such as sociology, political science, and my own field, city planning. (Take the above-named cities, for example, and try making some statistically significant, useful statements about the effects of hosting the Olympics on economic development in all three.) Bent Flyvbjerg, a former professor of planning now at Oxford's Saïd Business School, wrote a book called "Making Social Science Matter," in which he argued that trying to emulate the physics paradigm, with its broadly applicable rules, ends up making social science irrelevant: "The social sciences appear unable to demonstrate the kind of progress which is supposed to characterise normal science." Why? Human behaviour, Mr Flyvbjerg argued, occurs in a particular context, which changes from day to day, place to place, and person to person. Research that depends on statistically significant comparisons, in which context has been filtered away with dummy variables, neuters social sciences. To explain what's going on, a researcher needs to take context into account. In the case of business, the missing context is local business conditions and customs; so the "globalisation" promoted by business schools turns out to be thin gruel.

Researchers are used to winning research grants on the basis of quantitative analyses, and find it hard to change methodological gears: fair enough. But the alternative has implications for teaching as well. When addressing a broad base of students, recruited in part for their diversity, it is easier to speak in generalisations; easier to lecture and to grade coursework. Business education does have the long-standing use of the case study in teaching. But if the teacher spends days discussing a particular case—on, say, the decision of a supermarket chain to expand to Romania—it takes a certain ingenuity to keep that relevant to students not interested in retail or Romania. The book that made Mr Flyvbjerg's reputation, "Rationality and Power," is 290 pages tracking, in great detail, the decision to redevelop the town centre of Aalborg, Denmark. It is an excellent book, but cannot be said to have universal appeal. Henry Mintzberg, a longtime critic of business education, took a similar approach with his 2009 book "Managing". Instead of providing a statistical overview of what managers do, he dissected the daily lives of 29 managers from very different fields. His conclusions, though, are necessarily vague. There is just too much variation between the working days of the orchestra conductor, the park ranger, the refugee-camp manager and the telecoms executive. In order to correct the physics-envy problem, qualitative research—or, to be more blunt about what Mr Flyvbjerg and Mr Mintzberg are doing in their books, storytelling—needs to have pride of place alongside quantitative research. Statistical analyses are useful but should not be the only way to talk about the dilemmas of management, especially when addressing globalisation and difference.

But a curriculum that puts more emphasis on story and detail, where the proper treatment of a case takes weeks rather than one or two sessions, might mean more reading, more hours in the classroom and a longer programme. It might also turn the professor into a facilitator and put greater responsibility on the student to draw conclusions. This at a time when the traditional two-year programmes are under threat like never before. Has anyone written a paper showing that a 20% increase in context sensitivity in business education is positively correlated with a 31% increase in post-MBA salary?

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### Garaboncias

Oct 19th 2011 2:08 GMT

I'll trade my Physics degree (PhD), from the school after which element #97 was named, for an MBA from a reputable school and \$10 million in cash. Any takers?

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### greatmongo

Oct 18th 2011 11:50 GMT

@Garboncias

I trade you your PHD for a two year stay in China...

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### Garaboncias

Oct 18th 2011 5:02 GMT

@ greatmongo

I am waiting for a better offer; but thanks, though.

P.S. Just out of curiosity, where in China? It is a huge country, you know...

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### MathsForFun\_1

Oct 19th 2011 9:11 GMT

The "physics" of incompletely understood situations is case-based reasoning ([http://en.wikipedia.org/wiki/Case-based\\_reasoning](http://en.wikipedia.org/wiki/Case-based_reasoning)). In this article's scenario of managing a business unit in a different culture, the procedure would be:

- \* decide which indexes are relevant to the situation
- \* use them to select an ordered list of cases from the case base
- \* the case should contain a list of questions to ensure that it is relevant to the current situation (if it isn't, modify the index selection and search again)
- \* the case should contain a situation, an action, and an outcome (importantly including unsuccessful outcomes as well as successful ones), and also a list of steps (or underlying principles) to recreate the choice of action because there will inevitably be differences between the situation and the case
- \* after an action has been chosen, and the outcome is known, the existing case should be updated, or a new case added to the case base

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Oct 19th 2011 12:53 GMT

As a political scientist, specialising in leadership theory, this is one of my biggest bugbears. I have to say the bean counters who control university funding are only happy if you can give them a number. The fact that there is no logical way to "count" elements such as charisma, reputation or organisational skill doesn't cross their minds.

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### Tormeh

Oct 19th 2011 1:50 GMT

That's the problem with the social sciences: If I wanted stories, I would go buy Harry Potter. I want substance, and for that only the hard sciences will do. Evolutionary psychology seems to be making progress though. They're all ready well under way in accurately describing the components of charisma, reputation and organizational skill. True quantification of them is only a matter of time.

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### Jahkey

Oct 19th 2011 7:57 GMT

The social science that has by far been most "victimized" by physics-envy is economics, this has been detrimental to both application and legitimacy. It's time we acknowledge there is no reason to believe that complex social sciences should have the same objectives and methodology as relatively "simple" sciences such as physics. Humans have a lot more personality than atoms.

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### Garaboncias

Oct 19th 2011 10:00 GMT

The problem starts with the inaccurate terminology people engaged in social, political and economical studies are wont to use. Their area of interest is not, and will not ever be, 'science' in the strictest sense. They insist on calling it science but they themselves know it full well that it is not; and they feel slighted.

This is what Lord Kelvin had to say about all this (and he was one cool dude), which is still true today:

"In physical science the first essential step in the direction of learning any subject is to find principles of numerical reckoning and practicable methods for measuring some quality connected with it. I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of Science, whatever the matter may be."

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### guest-iejeeia

Oct 19th 2011 11:41 GMT

I tend to agree with Tormeh, though I'm less sanguine about the prospect of actually quantifying things like charisma, reputation, etc., the values of which are undoubtedly highly conditional (e.g., what would reputation variable value for Gandhi be in urban Detroit be relative to, say, Berkeley?). Ultimately, in the social sciences to quantify is to average and, alas, most people find averages boring. I personally believe that's more of a statement about people than it is about the findings of social sciences. :-)

But Tormeh is right: Do we want stories from our MBA professors or do we want empirically-demonstrable theories? From the time we are children we certainly learn from stories, but stories have a pesky anecdotal quality to them that doesn't reasonably allow for generalization. And it gets worse because if we hear a lot of stories that "are consistent with each other", we tend to induce theory from them when we shouldn't. Example: Go talk to 30 CEOs of "successful companies" and find out how they made their companies "successful". Good research or bad?

Although I'm a bit young to comment on the academic research on management prior to 1980, I think this kind of story-telling/summary/synthesis research was (and perhaps still is) fairly

common. Have we in management-related disciplines benefited from it. Maybe, but I don't think so: How else can we explain the rapidly decreasing half-life of management theories and jargon?

I've personally learned far more from people like Hal Varian, Bengt Holmstrom, Stephen Ross, and Fischer Black--all theorists--that is actually highly useful in my work as a management consultant than the many dozens of highly enjoyable books I've read by people like Peter Senge, Waters & Peterman, etc. This makes perfect sense: Business management and its sub-disciplines are all sub-disciplines of economics. Economics is about the optimal allocation and use of resources, and there is a language that is particularly useful in optimization: mathematics.

So why shouldn't business researchers formulate their theories in mathematical terms; and then test them using econometric methods? And if this is a good way of developing and testing management theory, why shouldn't we teach our MBA students using these same basic research ideas and methods? Physics envy, my foot! It is simply a practical use of mathematics and a very reasonable way to attempt development of coherent, generalizable management theory. (QED!)

Cheers, MMc

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### **O D Sinha**

Oct 20th 2011 5:37 GMT

Thank God some one is waking up to the reality. The gaps between the teaching imparted at the B Schools and the market requirements. Also the recent trend of going through with the text devoid of the context makes it harderr for the students to grapple with the problems at grass root level.

The basic nature of topics in Busines Studies is closer to the nature of topics of Social Sciences than Physical Sciences thus needs to be dealt with similarly.

Imagine teaching about the World War II without telling the students from Asia the context.Non-American and European students will fail to understand the importance of the topic.

I do agree that we need to move back to story telling in order to make the text more relevant to the students .

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### **Antonio Lau**

Oct 20th 2011 9:28 GMT

I think that it depends on the MBA course contents. For operations management, more physics-envy like issues is fine; for strategic management, more story-telling stuff is preferred. One-year master programme creates values only if the student is good in her first degree, which I don't think that many of students from developing countries have.

Antonio Lau

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### **Zeitgeist1**

Oct 20th 2011 1:06 GMT

Physics and material sciences have to deal only in lintier dimensions , to wit, three space dimension and one unidirectional time dimension.whereas economics and business deals with multi dimensions with lots more uncertainties than just with "momentum" and "position" of electrons . Noe, maths can deal with multi dimensions. Hence proper use of maths which has more applications than not just the measures of dispersion for data- comparison that are used to crunch mountainous raw data viz, " statistics " that can deal with heat energy and for making actuarial tables ,might be of real use . I could foresee , economists like metreologists using the probability functions ( called " wave functions" ) , that is used in quantum sciences becoming effective tools in expressing economic relationships. Wave functions can deal with multidimensional multiverses and hence might be applicable to economics with as many dimensions as the inter-product of the number of human beings existing at that particular epoch .anyhow one should be vary of drawing conclusions from procesed data without considering the process,especially in the case of human transactions . This is so owing to the

action of " free will " which factor is absent in the case of lumpen or radiating matter with which material physics deals with. Economists and even biologists should find brand new ways of quantifying the predominantly qualitative nature of the life- sciences , with which deal with. They must invent new mathematics like Newton invented differential Calculous for studying rates of change in physical processes or like Einstein " invented" new ways of applying Tensor mathematics to describe the distortions in " space- time." are there Biologists and Economists equal to the task at hand ? Till that time arrives the use of physical mathematical models to describe bio and Eco processes would be not only unsatisfactory but not meaningful either. Dadster.

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#### perguntador

Oct 20th 2011 3:23 GMT

Was Adam Smith a scientist?

No, he was not, would certainly reply the champions of "only-numbers-make-real-science" that always show up at these forums.

After all, his main insight and contribution to human knowledge is summed up by a (brilliant) metaphor. Or would anyone dispute that the invisible hand is one of those few ideas that has shaped both intellectual debate and real-life business & politics in the last centuries?

Excellent article. I would say that - for now, at least - numbers are too crude and simple an instrument to grasp the complexity and depth of human interchanges along time (history) and space (the planet) — which are, of course, the subjects of the social sciences.

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#### FvreXZKXBK

Oct 20th 2011 6:55 GMT

One of the reasons that MBA programs recruit a geographically and occupationally diverse student base is to have them teach each other about the country (and time-)specific idiosyncratic details that matter. Peers play a huge role in the learning process. Good instructors know this and take advantage of it. MBA programs design it in as part of their admissions process.

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#### exscientist

Oct 20th 2011 7:10 GMT

"After all, his main insight and contribution to human knowledge is summed up by a (brilliant) metaphor. Or would anyone dispute that the invisible hand is one of those few ideas that has shaped both intellectual debate and real-life business & politics in the last centuries?"

I think there's a lot of danger in brilliant metaphors. Before you know, the metaphore is so brilliant and evocative that peope start to think it explains something. I don't believe that the "invisible hand" explains anything, just like I don't believe that invoking some god explains anything. Perhaps the world would have been a better place without this particular and indeed brilliant metaphor.

There's noting wrong with physics envy. A good physical model will show you it's own limits. The problems begins when people start to think the model is valid outside of those limits.

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#### awvjoPTSiu

Oct 20th 2011 8:34 GMT

Current business, and economic science suffer the Physic's envy. Finance is one of the most affected sciences of all. I've studied modern finance for 10 years now and found it totally useless. Quant finance are partially a waste of time. Giving Nobel prices to useless deformations such as BSOPM (option's traders use to manage and understand risk better before all the greek letters) or CAPM has shown that elegance and complexity are placed before empirical demonstration or usefulness in Stocholm's criteria to award. The highly noticeable exception of Kahneman in 2002 is the exception that confirms the rule. Personally used to think that schools as Chicago's Booth or Oxford's Säid were the place to learn something new but after 2008 and many personal experiences in stock markets my first choices would be Santa Clara University or

Rochester (Heavily skewed towards Behavioral finance).

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**blackshipsrgo**

Oct 21st 2011 12:41 GMT

Well the European continentals always have--and it's called philosophy still. But all you guys do is laugh at them.

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**teacup775**

Oct 21st 2011 4:30 GMT

@Garaboncias

Why bother with the MBA? Take the cash and run.

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**brkevr**

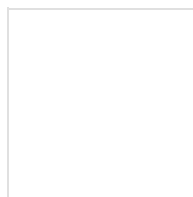
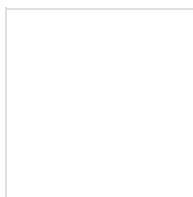
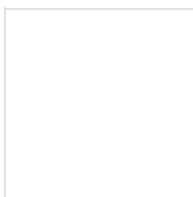
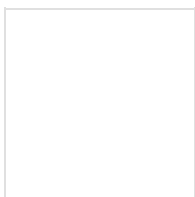
Oct 21st 2011 6:27 GMT

It is surely true and a solid fact that only quantitative research and analyses will not be enough for an MBA study considering the globalised world we live. I had graduated from an MBA degree that had put more emphasis on reading and detail, which was really very hard for a guy like me who had his undergraduate study in the field of Maths. It did help me in my business environment in which I have been participating as a computer programmer for 10 years. One who works in the field of information systems, even though the fields have seggregated very much in information sciences and computer sciences, should have at least a basic understanding of how a corporation is run, its business processes, the communication channels in it etc. And in order to get along with these obstacles, s/he must have done a lot of reading in the field of organizational behaviour, organizational re-engineering, management principles etc. However I also believe MBA degrees should present some courses as sub-fields of marketing and production fields, such as database marketing (not just conceptually covering the basic titles of it, but presenting a thorough information about the databases, SQL language and the logical architecture of a databases), business intelligence, information systems that are parts of ERP systems etc.

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