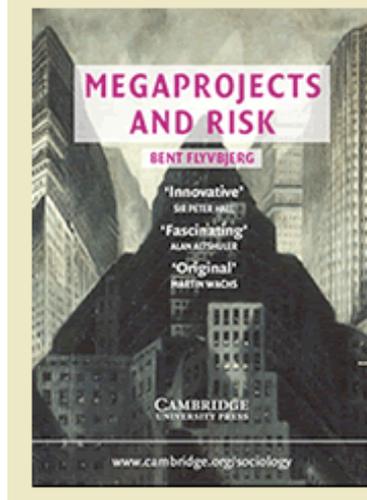




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First Annual Wachs Lecture—Flyvbjerg on Megaprojects

Why the worst ones get built, and how planners can stop them.

Pop quiz. Which of the following five megaprojects DID NOT run over budget and DID NOT result in fewer benefits than forecast?

China's Three Gorges Dam, Iraq reconstruction, The EuroTunnel, the Space Shuttle, or Bilbao's Guggenheim Museum.

If you guessed the Guggenheim Museum, you probably attended the inaugural lecture of the first annual **Martin Wachs Distinguished Lecture** in Transportation on October 17 where **Bent Flyvbjerg**, Professor of Planning at Aalborg University, Denmark, and former Wachs Ph.D. student, told a packed auditorium of current and future transportation, urban and regional

planners the bad news about megaprojects.

"Nine out of 10 megaprojects have substantial cost overruns and benefit shortfalls," he said.

"Boston's Big Dig, for example, is already 224 percent over cost. The tunnel is leaking, and a panel fell and killed a user."

Cost overruns and benefit shortfalls have plagued large projects for decades, not only in the U.S. but virtually everywhere else as well. Copenhagen's new metro system is already 157 percent over budget and still growing, while the EuroTunnel under the English Channel ended up costing twice as much—and providing only half the benefits—as originally forecast. "The British economy would have been better if the tunnel had never been constructed," said Flyvbjerg. (The Frank Gehry-designed Guggenheim Museum in Bilbao, on the other hand, was built on budget, on time, and has turned into a cash cow for the city.)

Flyvbjerg quoted his former adviser and mentor, Wachs, who, in 1986 said "forecasted patronage is always apparently higher than actual patronage, while forecasted costs always seem to be lower than actual costs." What's changed, however, and made this situation worse, is the increasing size and scope of transportation and building projects. Now, reports Flyvbjerg, accompanying cost overruns threaten to swamp economies. For example, construction costs for the Olympic Games in Athens were so over budget that the country's credit rating tumbled.

Another word for "lying"

The causes are three-fold, Flyvbjerg told the audience, but the most pernicious is "the problem of strategic misrepresentation," a term he said he came up with when audiences were uncomfortable with the word he originally used—"lying."

Political and organizational pressures conspire to produce dishonest budgets for projects. "Planners know the budget is too low, but it's difficult to tell the politicians," Flyvbjerg said. They know that high costs reduce the chance of procuring funding. Likewise, they over-promote the benefits of a project as part of the competitive process. Competing against other projects for limited resources leads to "strategic misrepresentation."

Unfortunately, this culture of misrepresentation is "very hard to topple," he said, yet it leads to the worst projects getting built—a result he calls "inverted Darwinism," or survival of the unfittest, the title of his talk. A general rule of thumb, he said, is "the better a project looks on paper, the worse it is."

When asked how to combat the problem, he prescribed three things: "Accountability, accountability,

Wachs Distinguished Lecture: for more information on how to contribute to the lecture fund, click [here](#).

[Bent Flyvbjerg's Web site](#).

[Excerpt from Megaprojects and Risk](#).

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accountability." This means asking promoters or developers to come up with a percent of the capital required for the project, as well as paying for cost overruns that previously have been passed on to taxpayers.

What might lead to reforms

On an optimistic note, he suggested that reforms will be made as large cost overruns threaten economies. Public-private partnerships are also gaining traction as a way to finance large projects and may prove to be better at providing realistic budget and benefit forecasts.

The lecture, which was organized by Wachs' current and former students to honor his contributions to education and research in transportation planning, policy and finance, was sponsored by a number of campus organizations including the University of California Transportation Center and Institute of Transportation Studies, where Wachs served as director. Next year, it will be hosted at UCLA, where Wachs was on the faculty before coming to Berkeley.

In his remarks to the audience, Wachs, who retired from academia but works at the RAND Corporation in Santa Monica, said he could imagine no greater tribute than to bring Flyvbjerg to Berkeley to speak at this first annual lecture.