Affordability in Higher Education Act To Solve Dubious College Cost Crisis

By CHRISTINE LEE

Despite all the higher educational institutes’ effort to give out scholarships and all sorts of aid to students, many students still cannot afford the costs of college. According to “The College Cost Crisis” cost factors prevent 48 percent of college-qualified high school graduates from attending a four-year institution and 22 percent from attending any college at all.

“The ongoing college cost explosion is a disturbing trend and one that cannot be allowed to continue,” says the report, which was prepared by Rep. John A. Boehner and Rep. Howard P. “Buck” McKeon.

So what is the problem? According to the report, the federal government has already increased its spending on higher education. The Pell Grant, which is student aid given based on financial need that students need not repay, has increased dramatically over the years and “made the dream of college a reality for millions of students.”

Moreover, while the Consumer Price Index increased by 80 percent in the 10 year period ending in 2001-2002 and median family income increased by 40 percent, federal student aid increased by 161 percent. There is no question, therefore, to how much the federal government has contributed to higher education.

Consequently, the arrow is pointed at the academic institutions themselves: “The Commission finds itself in the compromising position of acknowledging that the nation’s academic institutions, justly renowned for their ability to analyze practically every other major economic activity in the United States, have not devoted similar analytic attention to their own internal financial structures.”

In short, the document holds the colleges responsible for spending and hence the rise in tuition: “To compete in cutting-edge science and technological fields, for instance, universities are shelling out millions for research facilities.”

In the end, the article reasons that increase in federal spending on education is not the answer to the problem, instead, that the college should be held responsible for dramatic tuition raises.

Having identified the source of the problem, Rep. Howard P. “Buck” McKeon (R-California) launched the Affordability in Higher Education Act on October 16th. This highly anticipated bill proposes to “empower the consumers of higher education—student and parents—with significant information on higher education and college costs that is comparable to the dramatic cost increases that are hampering our nation’s ability to make the dream of higher education a reality for needy students.”

The money will be used for recreation and accommodation (although the latter is often donated by Tom Mannion), as well as a dinner for the guests.

Another event, the Graduate Science Symposium, which will be held on November 11th for all Graduate students, focuses on giving the students a chance to network and present their research projects.

This event is being organized by the Women in Engineering, Science and Technology (WEST) and they hope to not only give the students a chance to share their work, but emphasize the importance of a scientific community that is open to everyone, regardless of gender or race.

The symposium will include two keynote speakers: physicist Francis B. Brodsky and a keynote address by Shirley Malcolm, who will focus on diversity within the sciences.

The Caltech Y applied to get funds for their Alternative Spring Break community service program.
Atmospheric Researchers Flying High with NASA

By ROBERT TINDOL

Atmospheric scientists still ac-
cquire samples the old-fashioned way—by flying up and getting them.

Just as Ishaiah always returned to the high seas for whales after spending time on land, an atmos-
pheric researcher always returns to the air for new data.

All scientific disciplines depend on the direct collection of data on natural phenomena to one extent or another. But atmospheric scientists still find it especially important to do some empirical data-gathering on their own to the best way to get what they need is by taking up a plane and more or less opening a window.

At the California Institute of Technology, where atmospheric science is a major interest involv-
ing researchers in several disci-
plines, the collection of data is con-
sidered important enough to justify the maintenance of a specially equipped plane dedicated to thepur-
pose.

In addition to the low-altitude plane, several Caltech researchers who need higher-altitude data are also heavy users of the jet aircraft maintained by NASA for its Air-
borne Science Program—a long-
standing but relatively unseen ini-
tiative with aircraft based at the Dryden Flight Research Center in California’s Mojave Desert.

“The best thing about using air-
craft instead of balloons is that you are assured of getting your instru-
ments back in working order,” says Paul Wennberg, professor of atmo-
spheric engineering science.

“If one looks down from a plane, you can see all the way to go just about anywhere on Earth.”

Wennberg and colleagues Fred Seinfeld, explaining that CIRPAS, the Center for Interdisciplinary Re-
 mote Piloted Aircraft Studies, ac-

dmits the atmospheric aerosols (at-
mospheric particles or so-called aero-
dots) that is, all the stuff in the air like pollen, dust, smoke that causes other pollutants not classifiable as a gas.

Seinfeld and his associates study primarily atmospheric particles, their composition, their optical properties, their effect on solar radiation, their effect on cloud formation and ultimately their ef-

cfect on Earth’s climate.

“Professor Rick Flagan and I have been involved for a number of years in an aircraft program largely funded by the Office of Naval Re-
search and established jointly with the Naval Postgraduate School in Monterey. The joint program was given the acronym CIRPAS,” says Seinfeld.

CIRPAS, the Center for Interdisciplinary Re-

mote Piloted Aircraft Studies, ac-

Acknowledges the Navy’s interest in making certain types of environ-
mental observations, including the potential to test aircraft designs using the Earth’s present climate.

“Unlike the ER-2, in which instru-
ment must be contained in a small space, the DC-8 has room to com-
modate onboard mass spec-

trometers and such for onboard di-
rect logging and analysis of data. The data are streamed to the ground in real time, which means that the scientists can sit in the hangar and watch the data come in.”

Meanwhile, some of those on the ground, leaving the two sci-

cientists in the plane to those 100,000 feet, are the forest fire threat. “We typically fly below 10,000 feet before the fire is not pressurized. Most of the phe-

omena we want to study occur at lower altitudes,” he says.

John Eiler, associate professor of geochronology, is another user of the NASA Aerospace Research Program, particularly the air samples returned by the ER-2. Eiler and Caltech researchers have tested these days in the global hydrogen budget and how a hydro-
gen-fueled transportation infra-
structure could somehow impact the environment.

Eiler and Caltech professor of planetary science Yuk Yung, along with lead author Tracey Tromp and several others, issued a paper on the atmospheric science community in June that quickly became one of the most controversial Caltech research projects in recent memory.

Using mathematical modeling, the group showed that the inevitable leakage of hydrogen in a hydrogen-fueled economy could impact the ozone layer. More recently Eiler and another group of collaborators, using samples returned by the ER-

2 and 200-inch Hale Telescope, have reported further details on how hydrogen could impact the environ-
ment.

Specifically, they capitalized on the ER-2’s high-altitude capabilities to collect air samples in the only re-


defined hydrogen burning process and straightforward to infer the per-


cise cascade of reactions involved in hydrogen burns.

Though it seems contradictory, the Eiler team’s conclusion from stratospheric research was that the hydrogen- eating microbes in soils cannot take care of the possible hydrogen leaked by human activ-

ities. In this case, “This is not an issue by data collection,” Eiler says. “It’s still the case in atmospheric chemistry that there’s too much for going up and getting others.”

McCollum Professor Richard C. Flagan helped develop efficient and durable instruments to fly on a red-tailed U-2 spy plane.

Atmospheric Science and certain atmos-
pheric science, is still very much an observational field. The discov-

eries we’ve made have not been by modeling, but by consistent surprise when we’ve taken up instruments and collected measurements.

In this field of atmospheric chem-

istry, Wennberg says the three funda-

damental laborato-
We're good at fitting people to jobs.

It wouldn't be clear to every firm that a man with an M.F.A. in poetry was the right choice to head an automated block trading unit. Or that a designer of solar-powered race cars was the right woman to help launch a new venture in computational chemistry. But after we talked to them, it was clear to us.

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The D. E. Shaw group will host an information session on Monday, November 10 at 3:30 PM in the Chris Brennen Conference Room at the Student Services Center. On-campus interviews will take place November 11. To apply for an interview, log on to http://www.career.caltech.edu/students/recruit.htm. If this isn't possible, please send a resume and cover letter stating your GPA and standardized test scores, broken down by section where applicable, to oncampus@deshaw.com. Open sign-ups begin October 21 and end November 9.

Members of the D. E. Shaw group do not discriminate in employment matters on the basis of race, color, religion, gender, national origin, age, military service eligibility, veteran status, sexual orientation, marital status, disability, or any other protected class.

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Area Asian Man Puzzled Over Why White People Just Can’t Get Along

By LIBIN ZHANG

I noticed last issue that a certain Joe Wasem wrote a little letter to the Tech concerning our ASCIT President Tom Fletcher. Joe was especially critical of Fletcher's.chats around the proverbial fireplace. Perhaps one is an idiot, or perhaps I am surprised at a conservative Republican making ad hominem attacks, can’t we just move past this?

I learned in kindergarten that kids are “idiot” is a bad word. Some people might find it hypothetical that I am asking people not to make fun of each other. You may have been responsible for some of the people in the Tech that obliquely compared Tom Fletcher to Chairman Mao.

The difference is that I offer very unhelpful criticism on ideological grounds. I have not engaged in a historical comparison. There is a certain amount of ridiculousness and absurdity; I’m not really serious about change. Labeling someone a ‘dumbass’ is too harsh. I can try to make a distinction between attacking the abstract idea and attacking individuals discussing that idea.

I personally find the ‘whom I met with this week’ section a bit juvenile; Let us guess, Margo Marshak again? However, that does not mean that the opinions in this column are Tom Fletcher’s. I am convinced that the ‘idiot’ is not degraded into a dull number two pencil to gouged out one of your eyes (as you were not doing anything par­ticularly useful and exciting with­out Tom Mannion’s help."

I can’t say it enough: despite ex­cellent performance in undergradu­ate and graduate schools in the United States, Asians do not seem to be represented as well in the higher echelons of academia and this may be one of the aspects from which the perni­cious cycle starts.

Benjamin Mays and Albert Memmi’s ideas are far more com­plex than what this column sug­gests; and I hope the rest will start. They should start working harder than ever will, can be discouraging to the point of enforcing poor aca­demics performance.

On the flip side, we do not know what stereotypes get bundled about within the Asian community, but I can imagine they focus on “immu­nity,” “drunkards,” or “lazy.” This stereotype of the other can reinforce one’s own inclination to not mingle and do not develop the skills needed to get grant money or receive ten­ure.

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The Price of Fire: Greek Mythology and Blue Skies

By JEAN-PAUL REVEL

We can blame the disastrous fires of last week on the Titan Prometheus who gave fire to humans against the wishes of the admistation, Zeus in command. Prometheus had so much to lose, he was taken away. According to Greek mythology, it is he who fashioned the human race out of clay. But, whatever you are, you can't afford to steal someone else's stuff, never can be seen as acceptable behavior, even if there is a decent impulse behind it. In Caltech terms, it is called taking advantage of your fellow... well, Zeus and Prometheus were not exactly fellows, but you get my drift.

Divulging the secrets of fire apparently was the last straw for Zeus, who had been tricked by that sordid Prometheus before. So this time he sent a winged eagle, the worst kind, was Prometheus chained to a rock high in the Caucasus mountain range, the verge of the world and a long-winged, the wound caused, the truth was, Zeus was having a bit of fun. The eagle lived forever, too, it was free to roam, although not quite so fast.

Eventually, after many a year of suffering, Zeus came to the scene, the eagle carried off the people-loving titan from his rock. As I understand things (or maybe I don't have that straight) Zeus and Prometheus got along well with each other "forever after." So you see, just as I told you, the troubles we have been having in Southern California all week, can be blamed on the antics of ungodly gods. If man had not been created, then for sure, like all the rest of the people in town, since then at least the present calamity would have been avoided, since many of the fires seem to have been set by people, apparently.

The toll this time is 20 souls, 2400 homes and 750,000 acres burned over! While it is disheartening to find that there are so many evil doers in the world, it is not at all surprising when you consider the punishment of those guilty of such crimes.

Here they stand, being inter­viewed by ghoulish TV crews. Behind them one sees the smoldering remnants of burned Dash, the denuded scar, as I can see you can't help but feel deeply for the brick chimney rising to the sky like a scowling figure, as a witness to the horrors that have befallen this flame thrower-like jot of a severed gas connection.

Person after person, they talk dis­passionately of their loss, of their gratitude to those who helped, of their relief that it was not worse. They speak nobly, resolutely and with a poise that seems extraordinary.

I have often asked myself, seeing the resilience of people under great stress, whether I would have the same strength. I doubt for example that I could be my parents could be during war time, doing what had to be done, in seeming calm, in the midst of what was worse. A sense of dread, of anxiety, a cold sweat, even though one was living one's last moments.

The wild flames consume people's dreams and send out waves skywards on lasciviously twisting wind, on smoke so terrifyingly easy to lose it all at the whim of an ember or two. It is a terribly simple, almost not just belongings, but also one's life. A wrong turn in the smoke and dusk, in the recognizable land­scape streaked with flames and smeared with soot, an instant of delay, a smidgeon of hubris, it can't happen, can't happen to me and yet it does happen, here, now. That's all it takes.

October 21st, 2003, 12:04 PM, Olive Walk
Agenda:
1. Call to Order
2. ASCIT welcomes Abe Fettman as the new Social Director
3. We are Scientists! It is coming to play at midnight on Saturday, Oct 25th in the RF Courtyard.
4. Some undergrads have expressed concerns about accepting $1000 from the Moore-Hustefeller Fund if it means making the DVD library available to grad students. The ASCIT DVD library needs continued funding in order to replace old videos and purchase new titles. Over the years, undergrads have put a lot of money into the DVD library and some feel that it would be unfair to allow grad students to borrow DVDs for a one-time investment of $1000. ASCIT and the GSC will have to reach some sort of agreement before ASCIT accepts the $1000.
5. The IHC gave tours to Tim Downes and Erica O'Neal from Students Affairs. The IHC will put out a survey about rotation.
6. Repossesses were given from the BoC and grii attended a conference at the San Diego Center for Academic Integrity. BoC statistics will be published soon and Galien says that he will attend BoC talks at the seven houses.
7. Joanna says that a man who wished to donate gun-training sessions to ASCIT contacted her. She was strongly advised by Matt Brewer to only accept donations if they agree with ASCIT's treatment of purpose. Vote to accept the donation: 0-5-0, rejected.
8. The new Council for Under­graduate Education (CUE) representatives are Halina Gunterman and Elizabeth Feinberg. The alternate is Kathryn Hsu. For this year the amount allotted for athletic reductions was reduced from $1000 to $200. The BoD requested the committee to find that amount so that it would benefit more than just a band. Some undergrads were unhappy with being taken from a music account.
9. The little t is at the printers.
10. Jessica Gray requested $100 from Multi-House funding for Pumpkin Drop; Vote: 5-0-0, approved.
11. Alex Shim expressed his concern that Caltech has not invested in TA training and a Teaching Center as planned. He wishes students would take a more proactive approach to life at Caltech and express a greater interest in their education. Meeting adjourned at 12:56 PM.
October 28th, 2003, 12:03 PM, Olive Walk
Agenda:
1. Call to Order
2. Fleming requested $100 from housing for housing with Lloyd. Vote: 6-0-0, approved.
3. Dunbey requested an additional $100 from multihouse for putting a fire department drop. Dunbey has already requested their $100 for the term, so they cannot request another $100.
4. Lloyd requested $100 retroac­tively for the shell house, which was not requested. Ryan O’f expressed his outrage that the BoC would not approve $5. Retroactively, Ryan cited the small size of the Caltech community as a reason to make decisions on a more personal basis and asked the BoD to make an exception for Lloyd. The BoD has already denied other houses multimouse funding for that exact reason. Houses must request funding before an event has taken place.
5. The resolution from last term was rescinded so that it conforms to the new bylaws. The two states that committee chairs have to sign on anything released by the committee.
6. The details of the DVD agreement were not clear. Lloyd was working also. Also, the registrar’s new privacy policy may make the graduate student UID information more difficult to obtain. In the fu­ture, ASCIT will also be able to charge student IDs once a term if students fail to return DVD.
7. The little t is set to fail up to ASCIT meeting. This year’s little t contains many gross errors, including incorrect committee information as well as references to the Di­rector of Residence Life, which no longer exists. The directions to the card office are also incorrect. ASCIT would like to talk to the little editors about printing supple­mentary inserts with the correct in­formation.
8. After apologies for the tardiness of the donuts last Friday. It has also been brought to our attention that students have complained that there were inaccuracies in last week’s Tech article on the BoC. I have since been camps to express their concern that the MCHC and ASCIT would not publish the details of submitted pro­posals. This information would pro­vide students with examples of what successful proposals look like as well as expose them to interesting ideas from other proposals.
9. We are Scientists! was a hit. Thank Abe for doing a great job.
Meeting adjourned at 1:03 PM. Respectfully Submitted, Anna Szczezaniecki ASCIT Secretary

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The Funnie and John Hertz Foundation takes great pleasure in announcing its Fall 2003 Scholarship Awards.

Ms. Kimberly Beatty Department of Chemistry

is one of 15 Hertz Foundation Fellows chosen from a field of 584 applicants to receive a five-year, $200,000 Graduate Fellowship Award in the Applied Physical Sciences. The Foundation would like to extend this congratulations to California Institute of Technology for attracting this Fellow to their graduate program.

See for more details.

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FOR MORE INFO: http://www.aha.org/shareyourbest!

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Horvath, Levy Criticize Report; Loans Scare Off Poor Prospective Collegians

The California Tech NEWS

From PCS to Petaflops—The Future of Really Big Computers

By MARK WHEELER

PASADENA, Calif. - Supercomputers are the gem in every scientist's eye, useful for such data-intensive research as simulating the global climate or unraveling the human genome. They work by taking a concept known as "parallel processing," whereby multiple computer chips execute parts of a program simultaneously. The more chips, the bigger the problem the computer can handle and the faster it can do it.

Over the last decade, says Thomas Sterling, a faculty associate in the Center for Advanced Computing Research at the California Institute of Technology, the performance of supercomputers has increased almost one thousand times, from less than 70 gigaflops, or one billion calculations per second, in 1993, to over 35 teraflops, or one trillion calculations per second, in 2003. And yet, many of today's largest systems often demonstrate disappointing efficiency even though they are huge in size, cost, and power consumption continues to date. Current design strategies won't work for the next generation of supercomputers, making it unlikely they will be able to achieve the potential speed of the future of compar ing (a quadrillion calculations per second).

From PCS to Petaflops—The Future of Really Big Computers—"That money has got to come from somewhere," said Alexander McKeon, director of the UCLA Higher Education Research Institute. If tuition increases were held to arbitrary levels, Astin said, administrators almost certainly would be forced "into drastic measures, which will only make it harder for a poor kid to go to college." Moreover, opinion from the Nation Association of Independent Colleges and Universities indicated that: "There are several good pro visions in this bill. We particularly support the proposals to increase information about college pricing and student aid, create a demonstration project to offer incentives to institutions that cut costs and improve quality and prove established provisions that would ease transfer of credit among the nation's institutions."

"However, we remain strongly opposed to Mr. McKeon's effort to impose price controls on the tuition charged by colleges and universities. While the version contained in this legislation is an improvement on his earlier proposal, it still suffers from multiple flaws. In particular, the bill specifies, which is complex and highly regulatory; it is written in such a way as to creates undesirable incentives for schools; it applies to colleges that do not set their own tuitions; and it gives the ultimate control of the tuition to the federal government agency in Washington."

Apparently, the controversial bill is not a be-all-end-all solution to all our problems. With those contra s, the future supercomputers, and the tuition costs still escalating as a nationwide phenomenon, there is still a long way to go towards all fortable education.

A full copy of the "College Cost Crisis" report is available online at the Education Committee's website.
Coffeehouse, Alternative Spring Break to Benefit Continued from Page 1, Column 5

During spring break, small groups of students travel to various places, such as the Navajo reservation in Utah, San Francisco or Mexico and work on a community service project for a few days. Usual projects involve building houses, working in soup kitchens and working with inner city children.

The Coffeehouse applied for funds to improve the Coffeehouse by purchasing a new cash register. Additionally, they hope to expand their DVD collection, which is immensely popular with the students, as well as add lights to the patio and hold a party. Another group applied for money to create an On Demand Car Share system. This would allow students to reserve a car online and they would pay for whatever time they used.

This would be particularly helpful to incoming students who don’t have cars or parking spaces. The funding for this project is tentative, as the committee who reviewed the proposals has recommended funding for this proposal contingent on research that has yet to be done. The final project that will receive money from the Moore fund is an Undergraduate Career Conference being planned for a Saturday in February with money from the Moore Fund.

The event is being planned by Jerry Houser of the Career Center and he is certain that this Career Conference will be different from many others, due to the fact that it will last an entire day, rather than having several short workshops spread out over several weeks.

The Conference will concentrate on helping undergraduates decide on a career that suits them, based on personality tests and other self-assessments and then looking at goals and paths that will help them work toward their desired careers.

The different sessions will be coordinated in large part by Caltech alumni, who will also come for lunch to network with the students, allowing them to practice networking and interviewing skills.

Houser emphasized the uniqueness of this event, stating, “I’m a believer in intenseness; if you focus on something the whole day, it is a much richer experience than attending several workshops spread out over weeks or months.”

The Moore-Hufstedler fund will be of enormous benefit to the Caltech community in the near future as all of these projects get started. However, it is up to the individual students to reap the benefits, thereby determining if the allocation of funds was successful.

Royal Swedish Academy of Sciences Gives Rare Double Honor to Zewail

BY MARK WHEELER

PASADENA, CA — Ahmed Zewail, already honored with the Nobel Prize in chemistry, has received another accolade. The Linus Pauling Professor of Chemistry and professor of physics at Caltech has been named a member of the Royal Swedish Academy of Sciences. The Royal Academy is the organization that awards the Nobel Prize in physics, chemistry and economics.

Being elected a member of the academy constitutes exclusive recognition of a scientist’s research achievements. The academy members are divided into 10 classes; Zewail was elected as a Foreign member of Class IV, chemistry.

Besides noting his illustrious research career, the academy cited his active contributions to “practical research and education in the Third World.” “Normally after winning the Nobel Prize, you are elected to the academy,” says Zewail, “so it was very kind of them to elect me and I hope we can bring together this and other distinguished foreign scientists to promote global science and education.”

Zewail, a native of Egypt, is a member of numerous academies and societies and holds 30 honorary degrees from around the world, including one this year from Lund University in Sweden.

Currently his efforts are focused on new research areas at Caltech, especially on promoting awareness of the role of science in world peace. In 2001 he established prizes for excellence in the sciences and humanities for undergraduates at the American University in Cairo (AUC).

The award, named after Zewail by AUC in his honor, is intended to recognize graduating AUC students who demonstrate “extraordinary commitment to the pursuit of scientific inquiry and the affirmation of humanistic values.”

Zewail was awarded the Nobel Prize in chemistry in 1999 for breakthrough research. Using ultrafast lasers in a novel way, Zewail’s research team was able to observe the motion of atoms and record the transition state of a chemical reaction, revealing, as he put it at the time, “the chemical act—the breaking and making of chemical bonds.”

Prior to this breakthrough, transition states had never before been observed in real time because they happen on the timescale of a millionth of a billionth of a second, or one femtosecond. At the interface of physics and chemistry, Zewail founded the new field of femtochemistry and femtobiology.

The Royal Swedish Academy of Sciences is an independent organization whose overall objective is to foster the sciences, particularly mathematics and the natural sciences. Each year, it awards a number of prizes to deserving scientists, the, including the Nobel, which has been awarded since 1901.

The California Tech

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Screenplay Worthwhile

Continued from Page 1, Column 5

Students, Staff Celebrate Halloween; Devils, Pimps, Percussionists Spotted

Caltech Coders Impress Judges: For the second year in a row, Caltech will send a team of student programmers to the ACM international collegiate Programming Contest.

ME 72: It’s not quite Battle Bots, but this live action technical war is just as entertaining. Should we be proud or sad that our ‘school sport’ is not football but robots competing?

ME 72: It’s not quite Battle Bots, but this live action technical war is just as entertaining. Should we be proud or sad that our ‘school sport’ is not football but robots competing?

TACIT’s Sweeney Todd is a darn good production. The cast is excellent in their roles, I could not help but be impressed by the grisomeness of the murder scene. Although both Collins (Todd) and Cooper (Lovett) were excellent in their roles, I could not help but be reminded of the circumstances. All of Todd’s hesitations about whether to kill or not to kill left this spectator aghast.

Despite its shortcomings, TACIT’s Sweeney Todd is a darn good production. The cast is excellent, both in the main and the supporting characters. The comic relief is well-executed and the dramatic elements could certainly have been much worse. The costumes looked very natural and the set is extremely artistic and well-done. Definitely a great way to spend five bucks and a few hours of your time.