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Making Movies and Making Physics

Hark Tsui and Lui Lam

The characteristics and experiences of making movies and making physics are discussed, respectively, by a movie director/producer and a physicist. Similarities and differences between the making of movies and the making of physics are presented. Discussions on the nature of movies and physics, on creativity and innovation as well as on the joy of making movies and making physics are provided.

10.1 Introduction

Making movies is a creative process that involves several operational stages: (1) conception of the project, (2) lining up the funding, (3) finding coworkers, (4) shooting the movie, (5) post-shooting work, and (6) marketing and distributing the movie.

Making physics means creating new physics—doing physics, or physics research, at its best. It is also a creative process and, like making movies, involves the same six stages in its operation, from the beginning to finish. The exception is that when doing pure theory or simple experiments, stages (2) and (3) may be absent.

Hark Tsui has been directing and producing movies since 1979 [Ho & Ho, 2002; Morton, 2001] and Lui Lam published his first physics paper in 1968 [McMillan et al, 1968]. Presently, Tsui has directed/ produced over 70 movies and Lam has published over 170 research papers and 12 books. The two knew each other since 1975 when both

were doing community work in the New York Chinatown, in lower Manhattan.

In the following, their background and their views on the nature of movies and physics, respectively, are given in Sections 11.2 and 11.3. Their experience in making movies and making physics—picking a project and executing the project—are presented in Sections 11.4 and 11.5. Some musings on creativity and innovation (Section 11.6) and the joy of working on movies and physics (Section 11.7) are also provided. Section 11.8 concludes the chapter with discussion.

10.2 Our Background

A person's background influences his personal and professional choices and working style, which shows up in the final product this person produces, whether it is his movie or physics. The backgrounds of the authors are therefore given here first.

Tsui: I think it is very difficult to trace back one's background relating to one's creativity, because most of the time ideas come from factors related to DNA instead of environmental influences. That is why some people can draw when they are not trained as a painter, and some can sing when they are not trained in music academies. It is very abstract and difficult to link up someone's creativity to his/her growing process.

My understanding of what initiated my creativity happened in my childhood in Vietnam, starting with my sketch of a drawing. In fact, something happened before that, when I was younger. A school classmate drew a chalk drawing on a small blackboard for fun, which somehow was related to my later inclination of becoming a movie director. That drawing is about a movie that I saw before in a cinema, *Godzilla Attacking Tokyo*. In that experience I was quite frustrated because I could not draw as good as he did. In fact, I did not draw at all. But watching him draw was great fun. In fact, my classmate's drawing activity was accompanied by singing and talking. It was very much like what one experienced in a cinema and watched animation done by those classmates.

Very soon after that, I picked up a pencil and tried to draw, and it was the copy of a car show's pamphlet. It was great fun. This first trial of my creativity energized my curiosity to find out what I can draw. Then to surpass my classmates, I started to draw movie shoots. I went through the period when a lot of kids played with the flashlight shining through a plastic with drawings, with narratives—a basic kind of movie.

Later, I switched my interest to drawing buildings, which made my family believe that I was going to be an architect. It was very encouraging that my family elders asked me to draw different buildings and awarded me with petty money. Those drawings included people with activities inside buildings, a very basic video game like Sim City. The whole idea of using projector, drawing and narrative to tell a story was put aside when I entered the preteen period. It was later in my teen years, I, with a few friends, rented (daily when needed) a regular 8 mm camera, with my own pocket money and everybody chipped in.

At that point I moved to Hong Kong. For the first three years school life was unlike what I had before in Vietnam; in Hong Kong, it was total book reading and many exams, only a little bit of drawing. With this trend continuing, my interest shifted to *physics* and science in general, wanting to be a scientist, being influenced by a society that respects scientists. Those years were spent in reading a lot of science books, gearing to be a scientist. Graduating from high school, I had to decide what to do in college and in the future—quite a funny idea for a 17-year-old schoolboy; he had to make such an important choice without enough knowledge. It was a big decision to make because going to college took a lot of money, and I had no money; I had to think hard.

At the end I decided to switch to humanities and be happy. An interesting question arose: how to be happy while working as an adult. For two years I hanged around, searching for a decision. Suddenly one day on a bus, a friend asked me, "What will make you happy?" My answer: see movies, rather than working. My friend, "Then why don't you make movies?" Very inspiring conversation. After that day, I asked myself what to do if I wanted to be a movie director. With the limited knowledge I had at that age, I asked for advice. Most people went to study film or media production with ready financial support or some

basic knowledge of the field. I had none. (My family did not see any promise in filmmaking and so did not really support my ambition.).

Bring the little bit of money I earned in high school, I went to the United States with enough money for staying one semester in college only; I was constantly frustrated by the idea that I might be forced to return to Hong Kong soon. But the experience of being in a foreign country and living independently was very exciting. Every stage happening in life seemed to worth my effort. New perspective of what the world looked like opened up my horizon of thinking. The possibility of having to return home again did not stop me from trying my best to stay in the US. I tried very hard to do what I thought was needed to stay in college to learn what to do as a filmmaker.

The first Christmas, I went to New York looking for a job. Then, after staying in college for three years, in 1975 I went to New York again working in a film-processing lab. I was very much into New York and involved myself in community life—where people lived in Chinatown, midtown, with different cultures. There were so many things to do and to see; everything became lively and hopeful. It was very satisfactory seeing myself as a useful person.

An essential factor for me going to New York was to do a paper that was needed in my courses. The plan was to do a documentary film in New York, about the community and the society, a film about antiwar activities. I was looking for a documentary film person I had in mind but could not find him. I ended up working in a documentary company myself. Later, my involvement in the Chinatown community helped me to develop further. For example, while in New York I went to the Chinatown to see a movie from China, *Tianshan Red Flower*; the movie was in English while the audience was Chinese. Instant translation was needed, but no one could translate it well into Chinese. So I volunteered, and that happened again and again. The Chinatown turned out to be very complicated, with many groups of different interests coexisting. I looked for different channels to help people—nonprofit organization helping the locals to find jobs, Medicare clinics and media production groups.

In 1977 I returned to Hong Kong in order to understand my race and my mother country at a close distance, since I could only get a remote feeling of these things in New York. Hong Kong was then the closest

place one could get near the Mainland. I wanted to wait in Hong Kong for China to open its door so that I could enter Mainland, to explore my experience as a Chinese and my heredity. While in Hong Kong I tried to do documentary films, but was instead asked by my employer to make TV films. Fortunately for me, the experience helped. I directed my first feature film *The Butterfly Murders* in 1979 and became a movie director ever since.

In the Mainland in 1991, I made my first film *Once Upon a Time in China*; it was a very dramatic experience. The movie systems in Hong Kong and in Mainland were not the same, not even similar to each other in mentality; it was very disturbing to me. But then those valuable experiences would ready me to work in China on a long term basis later. Seeing those experiences as the preparation for future challenges, I continued to think of how to become a filmmaker in China.

In the mid-1990s, there were a lot of invitations from Hollywood for moviemakers in Hong Kong. I became one of the chosen directors to go; I was back to the US again. Then I was offered the chance to stay in the US for good, an exciting chance indeed. But I opted for Hong Kong, more precisely, China, since Hong Kong is part of China. I wanted to see, as a filmmaker, whatever would happen in the 1997 transition when Hong Kong was reverted back to China, to open up my own horizon as a filmmaker in my own country.

My plan of making movies in China continued. However, there were a few proposed projects that did not get through the censors in China. So my dream of being a filmmaker in China was temporarily hindered. In 2002, I was involved in a company that wanted to produce a movie called *Seven Swords*. And I launched myself again, on the track of shooting a movie with permissible content. Since then, I had been in China, thinking of all possible projects for this particular market.

However, SARS (severe acute respiratory syndrome) suddenly broke out in 2003, in Hong Kong and elsewhere. My attention was turned back to Hong Kong after much of my personal relationships there had been neglected by me. I was thinking that so much more could be done for Hong Kong, by injecting creativity in that society to create more interesting culture and present them to the rest of the world. I started planning a community project called Project Hong Kong, to extend the

local culture and increase the appeal of Hong Kong to the outside world. The project did not go well because of insufficient financial and social support; it was a nonprofit project, supported neither by the government nor private corporations. For two years, there was no result and I became losing interest in this project.

In 2005, *Seven Swords* was finished. I did other movies in China, like *All about Women* and *Missing* (both 2008)—the latter was shot in Taiwan, Hong Kong and Japan—and *Detective Dee and the Mystery of the Phantom Flame* (2010).

Lam: I was born in Guangdong Province and grew up in Hong Kong, where I received my education from grade one on and graduated from the University of Hong Kong with a B.Sc. degree, spanning from1949 to 1965. I then went aboard to Vancouver, Canada, in 1965 and then to New York City in 1966. I received my M.Sc. degree from the University of British Columbia and Ph.D. from Columbia University (1973), both in physics.

It was during my graduate student years in the late 1960s that the anti-Vietnam-War movement erupted and the students took over the buildings at Columbia University. From end of 1970 to 1971, I actively participated in the *Baodiao Movement* [Lam, 1971];[1] and then lived in New York's Chinatown to serve the community for about two years. We started the "Chinatown Food Coop" and helped the local patriotic newspaper *China Daily News* in its publication.

When at Bell Laboratories in Murray Hill, New Jersey, as a graduate student from Columbia, my mentor was Philip Platzman.[2] I did my

[1] In 1970, after large quantities of potential oil deposits near the group of tiny islands called Diaoyudao (called Tiaoyutai in Taiwan) were announced by foreign oil companies, both Japan and China reiterated their ownership of Diaoyudao. To help keep Diaoyudao under China, overseas Chinese students in USA started the "Protect Tiaoyutai" (*Baodiao*) movement at the end of 1970 [The Seventies Monthly, 1971]. The first large gathering was held in the basement of the College of Education building at Columbia in Dec., 1970. Subsequently, many oversea Chinese, students or otherwise, worldwide were mobilized. See, e.g.: http://archives.lib.nthu.edu.tw/exhibition/diaoyun/ (April 27, 2009).

[2] Phil Platzman did his Ph.D. thesis with Murray Gell-Mann in particle physics, and polaron work with Richard Feynman at Caltech before he worked at Bell Labs, the place he spent his whole career life. Both Gell-Mann and Feynman (1918-1988) are Nobel

postdoc under Melvin Lax (1922-2002)[3] at City College, City University of New York (1972-1975) before moving to Antwerpen, Belgium and then Saarbrücken, West Germany, spending about one year at each place. Starting January 1978, after the Cultural Revolution, I worked at the Institute of Physics, Chinese Academy of Sciences, in Beijing [Lam, 2010]. I left China at end of 1983 due to family reasons [Li, 1983]. Subsequently, I worked at City University of New York (1984-1987) and at San Jose State University since 1987.

Essentially, my physics research ranged from nuclear physics in my Vancouver years (1965-1966) to condensed matter theory at New York and Europe (1969-1978), and then from liquid crystals research in China and New York (1978-1987) to nonlinear physics and complex systems in San Jose (since 1987). I started publishing on the humanities in 2002 [Lam, 2002; Lam, et al, 2010].

I do not recall that I was interested in how the physical world works when I was young. I got interested in physics research after I published a few papers on my own as a graduate student at Columbia. However, I do recall that in my high school years, probably grade 11, I wrote a short essay in class under the title, "Those Who Don't Think Ahead Will Have Recent Worries," which is a well-known Chinese idiom chosen by the Chinese literature teacher as the essay title. Instead of putting out examples that illustrate the correctness of this statement like my classmates did, I gave the mechanism that guarantees this phenomenon. The mechanism goes like this: The world is very complicated (I did not know the term "complex system" yet), and so troublesome things will keep on appearing. If one do not think about them in advance and plan on how to handle them, they would become recent worries when they do

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laureates. In 1997, Platzman and Peter Eisenberger shared the APS Arthur H. Compton Award (http://www.aps.anl.gov/About/Committees/APS_Users_Organization/Compton/index.htm, June 20, 2010).

[3] Melvin Lax, one of the founders of quantum optics, received his Ph.D. from MIT (1947) and worked at Bell Labs (1955-1972) before assuming the Distinguished Professorship at City College, CUNY. He was awarded the Willis E. Lamb Medal for Laser Physics in 1999 (photonics.usask.ca/interestingtopics/files/Laser%20Invention/Melvin_Lax.pdf, June 20, 2010), and elected to the National Academy of Sciences in 1983 (www.aip.org/ history/acap/biographies/ bio.jsp?laxm).

happen. I wrote it short because the mechanism is simple. And instead of getting a high mark like 90% or more that I expected, I got a pretty low grade for my perfect argument. Looking back, this is my first research work on *Science Matters*.[4]

10.3 What Are Movies? What Is Physics?

Tsui: Movies present a phenomenal mentality shared by the masses. I always believe that to understand movies, one has to understand the history of movies. From movies' history, for example, one can understand why some movies are made with certain social factors. Also, to study (or to create) a classic movie that is enjoyed and appreciated by people for a long time, one must has a registration of the feeling or emotion of that certain period in time the movie depicts. To understand or revisit a certain era, one can go back to see old movies. Our obligation as a movie maker is to be sincere about how we feel about current events happening in that era, to give a phenomenal mentality shared by all.

Movie is a mirror from which the audience can see themselves.

Lam: "Physics is what physicists do." This is the definition of physics held to by *Physics Today*, the official monthly published by the American Physical Society [Lubkin, 1998, p. 24]. Indeed, this is the only definition that makes sense since the domain of physics is ever changing. Mature areas like classical Newtonian mechanics shifted from the physics to the engineering department, and new areas such as *econophysics* [Mantegna & Stanley, 2000] and *histophysics* [Lam, 2002] came in.

Today, physics is not just about nonliving or simple systems; it is also about complex systems, including all those from the social sciences and humanities. As advocated by the Nobel laureate Arthur Schawlow: "The task of physics is not only to understand the hydrogen atom, but to understand the world."[5]

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[4] Science Matters is the new discipline that treats all human-related matters as part of science [Lam, 2008; 2011].

[5] Quoted in *Physics Today*, Oct. 1994, p. 53.

10.4 Picking a Project

Tsui: Every filmmaker always goes through history of his own growth from the childhood days, from time to time. When watching old movies, the filmmaker may come up with a new perspective and new ideas to replace the old ones—integrating it with new moralities, viewing it from a new angle, and using a new story-telling method. This is because only a member of the new generation can grasp the mentality of that new generation. New direction of movies always comes up and keeps on happening. Consequently, "remaking" a movie is not necessarily, and usually not, a simple remake of the old movie; the remake is not the same movie.

To choose a topic as a contemporary movie maker, one should make connection with the environment and the world, and look for passion and emotion that can touch you and other people. This is the basic rule in picking a project in movie making.

As a naturally born artist, the movie maker always gets nutrition from what urges him on to express himself in how he sees the world. In most of the time, the ability to express himself comes from the blood of the filmmaker. For instance, some directors may not learn story telling from academic channels; yet, they still can tell a very touching story. That is why sometimes it is DNA that makes a person what he is.

Lam: To pick a project in physics research involves two steps: (1) coming up with an idea; (2) deciding whether to go ahead with the idea. There are three ways that a good idea may come to mind, like the case that a photographer may capture a good picture.

1. She could sit still in front of her house, with the camera in hand, and capture whatever that is interesting and happening within her eyesight.
2. She could run after a rushing crowd, join them and see what is happening out there; she may get a good picture of something exciting.

3. She goes places and sometimes wanders around; she may capture good pictures from time to time.

Needless to say, method 1 is not recommended because of the slim chance of success. Method 2 corresponds to chasing a hot topic in physics research like high-T_c superconductivity when it was first discovered in 1978. The competition will be keen and one should go into it only if one thinks she has a good idea in solving the problem or enough resources that could beat out all the competitors. Method 3 is most productive and is usually preferred.

However, with method 3, there are still two problems to overcome. First, like the photographer with the camera, the research physicist should be equipped—with research skills ready or capable of picking up necessary skills quickly. Second, how does she know where to go? The solution to these two problems comes from the same source: accumulating information in your brain on a *long-term* basis—since the research topic and needed tools are not known beforehand. To do that, it involves (1) reading the monthly magazine *Physics Today*, (2) browsing all the physics journals in the library, and (3) attending weekly departmental seminars.

Reading for research is very different from reading in a physics course. Read only the abstract as well as the first and last sections of an article is enough; go back to read in detail when you need to use the material there someday with your research topic in mind. And in a seminar, paying attention to the first and last five minutes of the one-hour talk is essential, because the speaker, the expert in that topic, is summarizing for you in the first five minutes what have been done on that topic and why the research is worth doing, and in the last five minutes the new finings and open problems. Most significant works are achieved by borrowing concepts or tools from one research field to the other; completely new things are invented on very rare occasions. That is why one has to read books and journals and attend seminars which do not fall neatly into the research topic one is doing. Do not let your mentoring professor tell you otherwise.

When you have a choice in picking problems, aim high. Pick the one that will have an impact, but you still have a fair chance of solving it. To that end, you have to *guess* the level of difficulty of the solution, what

tools are needed, and what your own level of expertise is. In short, you have to know yourself and your available resources pretty well; make friends and connections all the time because they are part of your resources. Of course, to play it safe before you have a tenure job, you may want to work on a familiar problem that guarantees publications while you are tackling a difficult but exciting one. The trick is always have an exciting problem under working, even if that means you have to hide it from your mentor who is using you as a cheap labor.

Wondering around from time to time, i.e., trying something new and unexplored by others, is equally important because important discoveries often show up unexpectedly. This is best described by Alexander Graham Bell (1847-1922), the inventor of the telephone: “Leave the beaten track occasionally and dive into the woods. You will be certain to find something that you have never seen before” (Fig. 10.1).

Fig. 10.1. Bust of Alexander Graham Bell at the entrance of Bell Laboratories, Murray Hill, New Jersey. Bell's quote (see text) is inscribed below the bust. [Photography taken by Lui Lam, July 12, 1994.]

10.5 Executing the Project

Tsui: The production of a movie involves more than one person; it is a team work. As such the director is the commander of the team who has to lead the way in thinking. The intention of the director has to be made clear to everybody so the group would follow the intended direction and come out with a work that has a solid vision.

When working with a group, the director's demanding control is necessary to avoid diversion of different ideas. The director has to be firm in his stand, even to confront people who do not agree with him, like a commander in an army. This is due partly to time and financial constraints, but mostly to artistic control.

It is quite often that the director participates in writing the script and draws his own storyboards (Fig. 10.2), and involves himself heavily in post production works. All of these, naturally, are for the director to express himself as an artist and for the artistic control of the final product, the movie. Lastly, one should not forget that the making of a movie involves not just the production component but also the financing component; a movie is a "commercial" product, in the positive sense of the word. That is why the director and actors have to participate in the promotion of a movie before or after it is finished, to help the sale of the movie.

Lam: A researcher has to be *completely* honest, trustworthy and dependable; never work with anyone who does not meet these criteria. The reason is very simple: There are many steps in a piece of research that it is sometimes quite impossible for others to check the details such as an extremely long and complicated calculation, the writing of a computer program, and the taking and analysis of data. Moreover, it may take a year or more to accumulate data and do the analysis, and if this person lost the records of them it will be a waste of valuable time for the

whole team. In research, priority is of paramount importance; there is no second runner.

Good physics research involves two parts: the major and important part comes from guessing and imagination, or what one calls *intuition*; the other part is *logical*, coming from induction or deduction. Intuition cannot be taught as simply as logical deductions; intuition is what differentiates good physicists from less physicists. When one faces a new phenomenon, the first step is to guess what happened. Modeling (Fig. 10.3) or equation writing comes later; proofs of any kind come even later and are often done after the correct answer is first guessed.

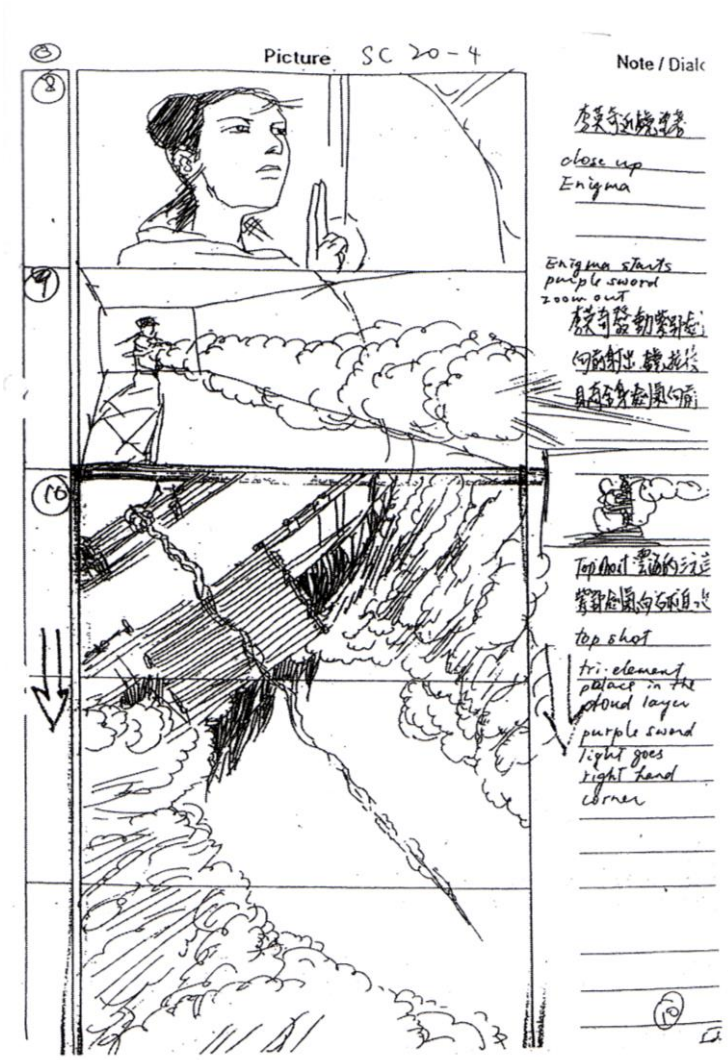

Fig. 10.2. Storyboards for *The Legend of Zu*, 2001 (drawn by Hark Tsui).

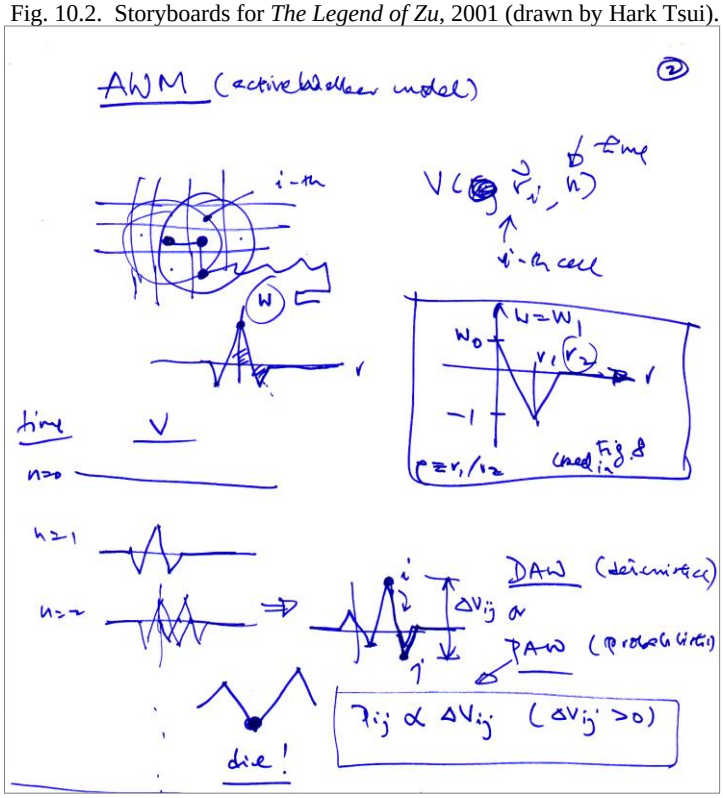

Fig. 10.3. Constructing an Active Walk Model (drawn by Lui Lam, March 21, 1992). The AW model was initially designed to reproduce the filamentary patterns observed experimentally, but turned out to be a general paradigm covering many complex (human and nonhuman) systems [Lam, 2005; 2006].

Publishing a paper is the byproduct of research. The basic aim of research is to *understand nature*, not to publish papers—a point often misunderstood or ignored by many practicing physicists, which, unfortunately, might be beyond their control. Counting papers by administrators indicates the lack of qualified referees in the evaluation process. The publishing of fraudulent papers actually misleads the

research direction and thus hinders the development of a research field. Anyone knowingly committing fraud and any institution tolerating fraud among its members have no business in research whatsoever. And, in fact, reporting fraud in one's own field is considered part of the duty of the researcher, irrespective of the researcher's motivation.

Reporting one's research results in seminars or conferences is part of the game, which could happen before or after the paper is published. The motivation is about advertising one's own work, but more importantly, it is to ascertain and improve one's research by facing challenges from one's peers. In physics research, while the picking and execution of the project, and even the formulation of one's results and the writing of the paper—those parts involving human action—are human dependent and could be the domain of sociology of science, it does not follow that the contents of the end scientific results, like Newton's laws of motion or Einstein's relativity theories, are also human dependent. In fact, they are not; they belong to the human-independent knowledge [Lam, 2008].

10.6 Creativity and Innovation

Tsui: One never knows a priorily whether he has creativity or is capable of innovations. The director has to come up with the result of his work—the movie, to test with the audience by finding out the direction of their response so that the director will know what he did is indeed what he wants. For example, one might want to do a very touching story, but the resulting movie may end up with a totally different effect. The reason could be that the materials of his work clash with his method of story telling, the two working in opposite directions. A creative person always has to explore different possibilities which might bring him to unknown realms.

The unknown realm is always a mysterious space of self exploration, which sometimes could be very risky and uncertain. For instance, good directors do make films that end up as crab; all filmmakers do make films that the audience does not accept. Those films in the course of self exploration may not be mature enough to establish communication between the director and the audience. Sometimes it may take more than one step to get to the destination the director wants it to be. And it is the

filmmaker who has to fight all the wars to get to the point that he can successfully come up with, with good creativity. A director always has to focus on his audience of his choice.

Innovation is not just about techniques. It is a vision you want to pass to the audience. To achieve that, the director has to choose all the "weapons" accessible to him.

Lam: Creativity means the ability to create something novel. It involves three components: dare to think, free to speak out one's mind, and the tolerance of failures. There are material bases behind all these. Every child dares to think but such an innate ability might be suppressed by the society, at home and in school, when the child grows up. To be a good physicist, one should be able to look into Einstein's eye and tell him he is wrong, if that is what one thinks. But this is possible only if there is a feeling of "equality" among the two persons engaged in an academic discussion, *and* any displeasure of the senior person will not jeopardize one's immediate position and future career. Furthermore, failures occur all the time during a creative process; that is why innovations are so hard to come by. The tolerance of failures is thus very important and the society must provide multiple ways for a failed person to come back, e.g., freedom to switch majors in a university, the ease of changing schools, and the existence of different types of colleges (such as the two-year community college and the four-year university) that is linked to each other. In short, we are talking about the freedom to think and speak, and the flexibility and mobility in the education system and the employment circles.

Providing pleasant and conducive working environment is equally important in encouraging creativity and innovation. Sitting the graduate students in small computer booths in a bare room is not the best arrangement. For comparison, at California's Pixar Animation Studios where award-winning movies are produced year after year, the working place is designed like a playground almost like the Disneyland.

10.7 The Joy of Making Movies and Making Physics

Tsui: Every time one goes for the process of self exploration, one finds more perspectives of oneself. It is more than an excitement; it is the means to see that there is always more about yourself that you do not know about. There are always unknowns out there waiting to be discovered.

Lam: The joy of doing physics comes mostly from practical rewards: flexible working hours, reasonable income, job security and freedom to work on any topic of your choice (if you are a tenured professor), friends and colleagues around the world, and the chance to visit beautiful places (where conferences are held). Moreover, if you work on pure physics, you may discover one or two fundamental laws of nature with profound implications that might change the world—a job satisfaction hardly matched in other professions. The dream of winning a Noble prize and the belief that you are discovering "truth" about the universe and so on help, but are not required. Lastly, if you are curious about many things in the world, including humans, and think hard enough, physics research does provide a unique training that helps you to see things with a unified perspective.

10.8 Conclusion

We both had received training in the United States but had worked for many years in environments with less or limited resources. Yet, we have always tried to compete and, whenever possible, outperform the best in the rest of the world. In this regard, we hope that those in similar situations will find something in this chapter useful.

Human affairs are stochastic systems that involve probability considerations. There are always exceptions to the rules. What works for us may not work for others, vice versa. However, since the objects and subjects involved in movies and physics are both part of the natural system, with constraints such as physical principles and human nature ever present, it follows that there could be more similarities than differences between movies and physics, or, at least, in movie making and physics making.

References

Ho, Sam & Ho, Wai-Leng [2002] *The Swordsman and His* Jian Hu: *Tsui Hark and Hong Kong Film* (Hong Kong Film archive, 2002).

Lam, L. [1971] "Hong Kong, Taiwan, Diaoyutai," *New York Hong-Kong-Students Monthly* **20** [reprinted in *Truth Behind the Diaoyutai Incident*, ed. The Seventies Monthly (The Seventies Monthly, Hong Kong, 1971) pp. 103-105].

Lam, L. [2002] "Histophysics: A new discipline," *Mod. Phys. Lett. B* **16**, 1163-1176.

Lam, L. [2005] "Active walks: The first twelve years (Part I)," *Int. J. Bifurcation and Chaos* **15**, 2317-2348.

Lam, L. [2006] "Active walks: The first twelve years (Part II)," *Int. J. Bifurcation and Chaos* **16**, 239-268.

Lam, L. [2008] "Science Matters: A unified perspective," in *Science Matters: Humanities as Complex Systems*, eds. Burguete, M. & Lam, L. (World Scientific, Singapore) pp. 1-38.

Lam, L. [2010] "The first 'non-government' visiting-scholar delegation in the United States of America from People's Republic of China, 1979-1981," *Science & Culture Review* **7**(2), 84-94.

Lam, L. [2011] "Arts: A Science Matter," in *Arts: A Science Matter*, eds. Burguete, M. & Lam, L. (World Scientific, Singapore).

Lam, L., Bellavia, D. C., Han, X.-P., Liu, C.-H. A., Shu, C.-Q., Wen, Z., Zhou, T. & Zhu, J. [2010] "Bilinear Effect in complex systems," *Europhys. Lett.* **91**, 68004.

Li, Yuan-Yi [2003] "The unbroken China complex: The life story of a Chinese scientist," *ScienceTimes*, Aug. 8.

Lubkin, G. B. [1998], "A personal look back at Physics Today, *Phys. Today*, May, 24-29.

Mantegna, R. N. & Stanley, H. G. [2000] *An Introduction to Econophysics* (Cambridge University Press, New York).

McMillan, C. D., Bhargava, P., Lam, L. & Vogt, E. W. [1968] "A calculation of the production of pions by 450 MeV protons on nuclei," *Can. J. Phys.* **46**, 1141-1144.

Morton, L. [2001] *The Cinema of Tsui Hark* (McFarland & Co., Jefferson, NC).

The Seventies Monthly (ed.) [1971] *Truth Behind the Diaoyutai Incident* (The Seventies Monthly, Hong Kong).