

## 數學才華——以平常之心看待「平庸」

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「求證」不是一齣數學劇，只是一齣以數學家的活動為背景的戲劇。因此，觀眾根本不需要什麼數學知識也可以欣賞瀰漫全劇的親情、友情、愛情——劇中人內心世界的矛盾、自責、信任、興奮之情表現為喜怒哀樂的起伏跌宕。當中又以父女之情最為關鍵：父親對女兒的期望和愛護，女兒對父親的關愛照顧和長年累月受壓力偶爾萌生煩厭而導致的自咎，著實使人動容。

也由於這個父女關係的中心點，那條重要定理的證明便顯得是個更為突出的環節。劇名所指，不單是那條定理的證明，也指能否（或要否？）證明是誰構思那個極富創意的證明？在數學領域以外，有些事情毋需確鑿的證明，大家都會接受，過份追求證明反為不美！其實，即使在數學領域以內，證明的作用，又是否僅僅為了核實邏輯上的無誤呢？

很多人在劇中看到數學天才與精神病患者一線之隔這一點，我倒想從另一個角度看看劇中人的想法（也許是不少數學家的想法）：大家承受著不甘於「平庸」的壓力。尤其大家一向認為數學才華應該很早顯現，要是年青時並非光芒四射，年紀越大便越感到英雄遲暮、日落西山的蒼涼。其實，在這方面而言，數學可能比別的藝術（數學不也是一種藝術嗎？）還要幸運！在數學上做了點點滴滴的工夫，雖然不是人人名傳後世，但在某種程度上這些工夫都推動了學科向前進展。各人的成果綜合於總體中，個人的貢獻在這總體形成過程中被溶化了。歷史上何止有千千萬萬的數學家，名留青史者萬中無一，即使在同時代的數學家群中，傑出者亦是少數而已。以此度之，是否應以平常之心看待「平庸」呢？

## **Mathematical Talent -----Looking at “mediocrity” with an ordinary mind**

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*Proof* is not a play on mathematics, but one where the backdrop is steeped in the activities of mathematicians. For this reason, an audience with no mathematical knowledge can still enjoy the drama filled with family affection, friendship and love --- the emotional conflict, the self-reproach, the mutual trust and the excitement that go on in the inner world of the characters, reflected as joy, anger, grief and happiness that rise and fall as the play unfolds. Among these, the intimate relationship between the father and the daughter is the most crucial: the father’s expectation of and his love for the daughter, the daughter’s affectionate concern about the father as well as self-blame on her sporadic resentfulness caused by the pressure accumulated throughout the long years in taking care of him. This is indeed touching.

Since the story develops with the father/daughter relationship as the central theme, the proof of that important theorem in the play becomes all the more significant. The title of the play *Proof* indicates not only the proof of the theorem, but also whether it is possible (or necessary?) to prove who the genuine author of the extremely creative proof of the theorem is. Outside the mathematical domain, there are things which need no rigorous proof and yet are acceptable by most people. Excessive demand of a proof may be a disservice! In fact, even in mathematics, does the proof of a mathematical result serve solely as a verification of the validity of the result?

Many people when watching the play notice the almost indistinguishable difference between a mathematical genius and a psychotic patient. However, I would like to take a different point of view of the opinion expressed by some characters in the play (opinion perhaps shared by many mathematicians as well): we all bear the pressure of accepting “mediocrity” with resignation. This is particularly so in the case of mathematics, where it is generally thought that a talented mathematician should shine at an early age. As a mathematician gets older, he would feel that he is past his prime and regret that he is approaching the twilight years of his career. As a matter of fact, in this respect mathematics fares better than other forms of art. (Mathematics, is it not also a form of art?) Any bit of work in mathematics, no matter how unimportant or how unknown it may be to later generations, can in some ways push forth the development of the subject. The fruitful results of individuals are assimilated into one single whole; the contribution of an individual melds with this single whole. Throughout the ages there were thousands and thousands of mathematicians, but only a handful of them went down in the annals of history. Among contemporary mathematicians only a minority are recognized as outstanding. Judging from this, should we not look at “mediocrity” with an ordinary mind?

*(This article, translated by Fung Kit CHAN, originally appeared in Chinese in the house programme of the play staged by the Hong Kong Repertory Theatre in July 2005 in Hong Kong. The play script of “Proof” written by David Auburn won the Pulitzer Prize and the Tony Award in 2001.)*