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PROFESSORS, POLYMATHS AND CREATIVITY

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PROOF

Henri Cartier-Bresson—who failed his baccalaureate three times, did not attend a university and abandoned his course at a Parisian art academy in favour of a chancy career as a self-trained roving photographer—was nevertheless offered many honorary doctorates in later life by universities, including Oxford University. Refusing one such offer, he quipped: “What do you think I’m a professor of? The little finger?”

Given Cartier-Bresson’s universally recognised artistic stature—as the “eye of the century” in the words of his biographer Pierre Assouline⁽¹⁾—his remark strikes me as being more than a witticism: it has bite and resonance for all creative people. In the first place, it obviously suggests his lack of faith in formal education, as compared with self-education—certainly in the field of photography, and perhaps more widely too. Secondly, it mocks any obsession with craftsmanship, the technical aspect of photography: another facet of Cartier-Bresson, who employed a single Leica camera as a rule and no flash and who left the printing of his negatives to others. As long as the “little finger” clicks the button at the decisive moment, that is enough, he implies. Lastly, the remark seems to go further still, by hinting that professors—in other words formally trained specialists—are anathema to spontaneity and art. As Cartier-Bresson also remarked: “Photos take me, and not the other way round.”

Yet, despite his genuine antipathy for specialisation, in practice Cartier-Bresson chose to function pretty much as a specialist. For nearly four decades from about 1931—except when he was a prisoner-of-war in the early 1940s—he focused virtually all of his energy on photography and photojournalism as a dedicated professional working on assignments for major magazines and newspapers, latterly via the Magnum photo agency he had helped to found in 1947.

His only significant departure from photography was a brief flirtation with feature films (working under Jean Renoir) and documentary film-making (mainly about the effects of war). Otherwise, he kept any tendency towards polymathy or versatility under strict control. For example, as a writer Cartier-Bresson produced very little, even about his own photographs, except for his famous essay in *The Decisive Moment* (1952)—notwithstanding his love of the written word and a considerable literary style. In art, he destroyed his early paintings; he returned to painting and drawing only in his late sixties, after he had almost abandoned photog-

1. Pierre Assouline, *Henri Cartier-Bresson: A Biography* (London: Thames & Hudson, 2005).

raphy, pursued drawing with intensity and eventually held exhibitions of his drawings and paintings in London, New York, Paris and many other cities. There is little doubt that he admired painting more than photography; no photographs hung on the walls of Cartier-Bresson’s Paris apartment near the Louvre, only drawings and paintings. Perhaps he sometimes regretted not sticking longer at his 1920s art-school training under André Lhote, which he credited with developing his passion for geometry and composition in photography. But like his friend in India, the self-trained film director Satyajit Ray, who abandoned art school to become a commercial graphic designer in the 1940s, Cartier-Bresson felt he didn’t have it in him to become a great painter—or, for that matter, a film director. Assisting the great Renoir in the 1930s opened his eyes to his own true abilities and the need to channel them in a particular direction. “Renoir”, he said candidly, “was like a great river of warmth and simplicity”—qualities wonderfully captured in Cartier-Bresson’s photo-portraits of Renoir—“but Jean knew very well that I would never make a feature film. He saw that I had no imagination.”⁽²⁾

Exceptional creativity has long had an uneasy relationship with both formal education and polymathy. Considering formal education first, in 2000-02 the broadcaster and arts administrator John Tusa interviewed on BBC radio about a dozen figures well known in the arts concerning their creative process, and later published the conversations in full in his collection, *On Creativity*.⁽³⁾ They were: the architect Nicholas Grimshaw; the artists Frank Auerbach, Anthony Caro, Howard Hodgkin and Paula Rego; the photographer Eve Arnold and the film-maker Milos Forman; the composers Harrison Birtwhistle, Elliott Carter and Gyorgy Ligeti; the writers Tony Harrison and Muriel Spark; and the art critic and curator David Sylvester. Their formal education varied greatly, from ordinary schooling in the case of Arnold and Sylvester to Carter’s doctoral training in music and subsequent academic appointments. There was nothing in what they said of their careers to indicate that a basic education, let alone a university degree, is a requirement in order to be a creative person, Tusa concluded.

A much larger sample of the exceptionally creative—nearly 100 individuals—were interviewed by the University of Chicago psychologist Mihaly Csikszentmihalyi over a longer period and published in a general-

2. Quoted in an obituary of Henri Cartier-Bresson, *Guardian*, 5 August 2004.

3. John Tusa, *On Creativity: Interviews Exploring the Process* (London: Methuen, 2003).

interest book.⁽⁴⁾ Unlike Tusa's subjects, Csikszentmihalyi's interviewees included, as well as those eminent in the arts, many scientists, mostly working in universities, some of whom were Nobel laureates. School days were rarely mentioned by any of the interviewees as a source of inspiration. In some cases, they remembered extracurricular school activities, for example the literary prizes won by the writer Robertson Davies or the mathematical prize won in a competition by the physicist John Bardeen (one of the inventors of the transistor, and the only double Nobel laureate in physics). Some inspiring individual teachers were also recalled, though chiefly by the scientists. But overall, Csikszentmihalyi was surprised by how many of the interviewees had no memory of a special relationship with a teacher at school.

"It is quite strange how little effect school—even high school—seems to have had on the lives of creative people. Often one senses that, if anything, school threatened to extinguish the interest and curiosity that the child had discovered outside its walls", writes Csikszentmihalyi. "How much did schools contribute to the accomplishments of Einstein, or Picasso, or T. S. Eliot? The record is rather grim, especially considering how much effort, how many resources, and how many hopes go into our formal educational system."

Leaving school and moving on to higher education and professional training, one finds the pattern of experiences less clear-cut. Some exceptionally creative achievers receive little or no formal education after school, like Cartier-Bresson, but this has become relatively unusual in recent decades, with the worldwide expansion in higher education; almost inconceivable for scientists. Among Tusa's sample of late 20th-century creators (which excludes scientists), three of them—Arnold, Spark and Sylvester—received no institutional training in their field, and indeed had no further formal education. Only three of them—Carter, Caro and Harrison—took university degrees; Carter alone went on to do a doctorate. Auerbach, Grimshaw, Hodgkin and Rego went to art schools. Birtwhistle and Ligeti trained at academies of music. Forman went to film school.

Might it be that too much training and education can be a handicap for the truly creative? The psychologist Dean Keith Simonton studied the educational level of more than 300 exceptionally creative

4. Mihaly Csikszentmihalyi, *Creativity: Flow and the Psychology of Discovery and Invention* (New York: HarperCollins, 1996).

individuals born in the period 1450-1850, that is, before the introduction of the recognisably modern university system—post-Darwin, but pre-Einstein, so to speak. In an academic study, Simonton shows that the most celebrated creators—including Beethoven, Galileo, Leonardo da Vinci, Mozart and Rembrandt van Rijn—had attained an educational level equivalent to approximately half way through a modern undergraduate programme.⁽⁵⁾ Those with more (or less) education than this had a lower level of creative accomplishment, generally speaking. Not too much weight should be put on Simonton's discovery, given the difficulty of estimating the educational level of some highly creative historical individuals, and of comparing levels of education in different societies at different periods. However, his finding is supported by the regularity with which highly creative individuals lose interest in academic work during their undergraduate degree course and choose to focus instead on what fascinates them.

Simonton's finding may also provide a clue as to why, in higher education, the post-war increase in the number of PhDs has not led to more exceptionally creative research—if Simonton is correct that the optimal education for exceptional creativity does not require a PhD. In the sciences, the 20th-century expansion of higher education at the doctoral level produced a proliferation of new research specialisms and new journals catering to these specialisms. "Since 1945, the number of scientific papers and journals in highly industrialised societies—particularly in the United States—has risen almost exponentially, while the proportion of the workforce in research and development and the percentage of gross national product devoted to it have grown more modestly", the sociologist of science J. Rogers Hollingsworth wrote in the science journal *Nature* in 2008, after spending several decades studying innovation in different societies. "Yet the rate at which truly creative work emerges has remained relatively constant. In terms of the scale of research efforts to make major scientific breakthroughs, there are diminishing returns."

A more likely explanation of this discrepancy, however, is that in contemporary society exceptionally creative scientists and artists differ in the periods of training they require, because of the changed nature of the scientific enterprise, as compared to that of the late 19th century and before. Exceptionally creative artists do not require doctoral training

5. Dean Keith Simonton, *Genius, Creativity and Leadership: Historiometric Enquiries* (Cambridge MA: Harvard University Press, 1984).

now any more than they did in Leonardo's day—but this is not true of their equivalents in science, who must master a greater breadth of knowledge and techniques before they can reach the frontier of their discipline and make a new discovery.

Scientists also need to be much better students than artists, in terms of their performance in school and university examinations. Simonton notes that: “the contrast in academic performance between scientists and artists appears to reflect the comparative degree of constraint that must be imposed on the creative process in the sciences versus the arts.” Whether this fact has the tendency to squeeze out of the system a potential Darwin, Einstein or Crick in favour of the merely productive academic scientist is an endlessly discussed subject, to which no one has yet given a satisfactory answer. What is generally accepted, though, is that the huge growth in size and competitiveness of higher education in the second half of the 20th century and after, did not increase the number of exceptionally creative scientists.

Where does polymathy fit in? Consider the life and work of a widely admired modern polymath, Michael Ventris (1922-56), described in a biography of him.⁶ His decipherment of Linear B, Europe's earliest readable writing, in 1952—an interdisciplinary breakthrough cutting across art and science that was dubbed the “Everest of Greek archaeology”—illustrates well the strengths and the weaknesses of specialisation and polymathy. Ventris's decipherment required both self-training and exceptional creativity, but no PhD, nor even an undergraduate degree.

The challenge of reading the ancient Minoan scripts excavated at Knossos in 1900 by the archaeologist Sir Arthur Evans—which Evans dubbed Linear A and Linear B—attracted the attentions of dozens of scholars during the first half of the 20th century. However the key figures in the decipherment were Emmett Bennett Jr, Alice Kober, Sir John Myres, John Chadwick and Ventris. Bennett was an epigraphist, with wartime experience of cryptography, who had written a doctorate on Linear B under the archaeologist Carl Blegen at the University of Cincinnati in the late 1940s; soon after this, Bennett moved to Yale University. Kober was a classicist with a PhD in Greek literature from Columbia University, who had developed a consuming interest in Linear B in the mid-1930s. The ageing Myres was professor of ancient history

6. Andrew Robinson, *The Man Who Deciphered Linear B: The Story of Michael Ventris* (London: Thames & Hudson, 2002).

at Oxford University until 1939 and was widely considered a leading authority on the ancient Greeks; in addition, he had become the custodian and editor of the Linear B tablets after the death of his friend Evans in 1941. Chadwick had an undergraduate degree in classics from Cambridge University but no PhD; after wartime service as a cryptographer and work in Oxford on the staff of the *Oxford Latin Dictionary*, he became a lecturer in classics at Cambridge in 1952, the year he began collaborating with Ventris.

Unlike Bennett, Kober, Myres and Chadwick, Ventris never went to university and had no professional training in classics other than at Stowe school, where his passion to decipher Linear B began as a fourteen-year old. Instead, he underwent training as an architect at the Architectural Association School in London in the 1940s—interrupted by war service—before beginning to practise architecture professionally, with a keen commitment to modernism. (Family friends included the architect and designer Marcel Breuer, the sculptor Naum Gabo and the painter Ben Nicholson.)

Bennett, Kober, Myres and Chadwick were all older than Ventris; were better trained than Ventris in classical studies; and had more opportunity than Ventris to concentrate on the problem of ‘cracking’ Linear B. Yet they all failed, whereas Ventris succeeded. One is compelled to ask why?

There are many reasons (discussed in the biography). The two most important are: first, the fact that Ventris was knowledgeable in three very different domains—classics, modern languages and architecture; and secondly, that as an architect he did not have the same investment in orthodox thinking about Linear B as the classics ‘professors’. Myres remained hamstrung by the incorrect theories of the extremely influential Evans, long after Evans's death. Kober, though original and brilliantly logical, was temperamentally unwilling to hazard guesses. She wrote of Linear B in 1948: “When we have the facts, certain conclusions will be almost inevitable. Until we have them, no conclusions are possible.” Bennett, though highly intelligent, suffered from scholarly over-restraint, too: he greeted Ventris's 1952 decipherment in public with a “fine set of cautious, non-committal phrases” (as he privately admitted to Ventris). In a sense, Ventris succeeded because he did not have a degree or a doctorate in classics. He had enough training in the subject, but not too much to curtail his curiosity and originality. As his academic collaborator Chadwick nicely confessed after Ventris's premature death in his classic, *The Decipherment of Linear B* (1958):

The architect's eye sees in a building not a mere facade, a jumble of ornamental and structural features; it looks beneath the appearance and distinguishes the significant parts of the building. So too Ventris was able to discern among the bewildering variety of the mysterious signs, patterns and regularities which betrayed the underlying structure. It is this quality, the power of seeing order in apparent confusion, that has marked the work of all great men.

In addition, Ventris conforms to the generally cool attitude to their school days of exceptionally creative people discussed earlier. He was above average at school, but not excellent; in fact he left school before finishing his course. He derived little inspiration from the teaching, although he did have fond memories of one teacher, who taught him classics and accidentally introduced him to Linear B on a school expedition to a London exhibition on the Minoan world in 1936. And he was not interested in group activities, such as team sports, preferring to remain solitary and detached. Like his great French predecessor Jean-François Champollion, who deciphered the Egyptian hieroglyphs in the 1820s, the schoolboy Ventris even worked secretly on decipherment at night—under the bedclothes by the light of a torch after official ‘lights-out’, as one of his fellow boarders in the school dormitory amusingly recalled.

But whereas with Linear B the polymath beat the professors, with the Egyptian hieroglyphs it was the professor who beat the polymath. However, in both decipherments key insights from polymaths and from the professors were crucial to the successful outcome.

Champollion (1790-1832) had specialised in ancient Egypt from his early teens for two decades before his breakthrough with the Rosetta Stone in 1822. In 1831, he became the world's first professor of Egyptology, at the College of France in Paris. His polymathic English rival, Thomas Young, first tackled the Rosetta Stone only in 1814, in his forties, but had probably “a wider range of creative learning than any other Englishman in history”, noted the Science Museum in London on Young's birth bicentenary in 1973. Trained as a physician, Young practised medicine professionally but made discoveries in physics (interference patterns of light beams, which demonstrated the wave nature of light) and physiology (the three-colour theory of vision) that would almost certainly have earned him two Nobel prizes in the 20th century. He also coined the expression ‘Indo-European’ for the language family that includes Sanskrit, Greek and Latin. When pressed to contribute to the *Encyclopaedia Britannica*, Young offered

articles on the alphabet, annuities, attraction, capillary action, cohesion, colour, dew, Egypt, the eye, focus, friction, haloes, hieroglyphics, hydraulics, motion, resistance, ships, sound, strength, tides, waves and “anything of a medical nature”. And he was not boasting: having been an ‘inspector of calculations’ and physician of a London-based life-insurance company in the 1820s, Young knew about annuities. Furthermore, his roles as adviser to the Admiralty on shipbuilding, secretary of the Board of Longitude, and superintendent of the vital *Nautical Almanac* from 1818 until his death, had informed him on ships.

The titles of recent biographies of Young and Champollion encapsulate this crucial difference between them: *The Last Man Who Knew Everything* and *Cracking the Egyptian Code*.⁽⁷⁾⁽⁸⁾ Ever since the 1820s, feelings have run deep concerning their rivalry. They extend well beyond the Anglo-French antagonism and chauvinism emphasised in a 2005 BBC TV dramatisation of Young versus Champollion, “The Mystery of the Rosetta Stone”, or the clash between Enlightenment and Romantic ideals. No one interested in creativity and discovery can be indifferent to this particular rivalry. It belongs not just to Napoleon Bonaparte's era, but also to our current intellectual and creative worlds, with their propensity towards specialisation and their enduring fascination with genius.

We have no difficulty in comprehending and respecting Champollion's dedication to a single field of study, Egyptology. About Young's versatility, there is a division of opinion, however. Those who appreciate Young, admire his range, his intuition and his far-sightedness. Those who do not, depreciate these very same aspects of his life and work as diletantism, sloppiness and opportunism. For the latter group, Young, far from being an amazingly creative polymath, stands convicted of some cardinal academic sins: lack of focus, lack of rigour and lack of originality. In a word, lack of discipline. Or should that be lack of a discipline? Two centuries after Young, in an age of narrow, and frequently narrow-minded, specialisation in the academy and the professions unthinkable in his time, polymathy probably disturbs us still more than it did the Victorians. We are made uneasy by those who effortlessly bridge several disciplines.

7. Andrew Robinson, *The Last Man Who Knew Everything: Thomas Young, The Anonymous Polymath Who Proved Newton Wrong, Explained How We See, Cured the Sick, and Deciphered the Rosetta Stone, Among Other Feats of Genius* (London: Oneworld, 2006).

8. Andrew Robinson, *Cracking the Egyptian Code: The Revolutionary Life of Jean-François Champollion* (London: Thames & Hudson, 2012).

It is only too natural to treat them as dilettantes or even to try to dismiss them as charlatans.

As for genius, our enduring cult of it means that many of us prefer to believe in the primacy of inexplicable moments of inspiration over the less glamorous virtues of step-by-step, rational, hard work. With Champollion, we have the supporting evidence of an archetypal eureka moment, in Paris in September 1822, when Champollion cried out to his brother: “*Je tiens mon affaire!*”—and then fainted on the floor, so that his brother thought he might have died from over-excitement. In his writings, Champollion generally gave the impression that his breakthroughs came almost exclusively out of his own mind, arising from his indubitably passionate devotion to ancient Egypt. He pictured himself for the public as a ‘lone genius’ who solved the riddle of ancient Egypt’s hieroglyphic writing single-handedly. The fact that Young was known primarily for his work in fields other than Egyptian studies, such as physics and physiology, and that he published on Egypt anonymously before 1823, has made Champollion’s solitary self-image easily believable for most observers. It is a disturbing thought, especially for an academic specialist, that a non-specialist like Young might enter an academic field, transform it, and then move on to work productively in an utterly different field.

In my view, the single most fascinating aspect of the story of the decipherment of the Egyptian hieroglyphs is that it required both a polymath and a specialist to ‘crack’ the code, even if Champollion would never bring himself to admit this in public. Young’s myriad-mindedness provided some key initial insights in 1814-19 (most notably the phonetic basis of some hieroglyphs)—but then his polymathy diverted him and worked against his making further progress. Champollion’s single-mindedness hindered him from arriving at these insights in the same period—but then, once he got started in 1821 (after borrowing from Young’s anonymously published work), his ‘tunnel vision’ allowed him to begin to perceive the system behind the hieroglyphs. Both Young’s breadth of vision and Champollion’s narrowness of focus were essential for the revolutionary breakthrough that Champollion, alone, announced in Paris in 1822.

Since their time, the ever-increasing professionalisation and specialisation of education and domains, especially in the sciences, are undeniable. The breadth of experience that feeds genius is harder to achieve today than in the 19th century, if not downright impossible. Had Darwin been required to do a PhD in the biology of barnacles, and then joined a university life sciences department—rather than circumnavigating

the planet in HMS *Beagle* in 1831-36—it is difficult to imagine his having the varied experiences and exposure to different disciplines that led to his discovery of natural selection. If the teenaged Van Gogh had gone straight to an art academy in Paris in the 1870s, instead of spending years working for an art dealer, trying to become a pastor, and self-tutoring himself in art while dwelling among poor Dutch peasants, would we have his late efflorescence of great painting?

In the words of Young: “It is probably best for mankind that the researches of some investigators should be conceived within a narrow compass, while others pass more rapidly through a more extensive sphere of research.”⁽⁹⁾ Despite the passage of two centuries and the extraordinary advance of knowledge, I think Young’s undramatic but perceptive statement still holds good. The intellectual and creative worlds will always require plenty of specialising professors; but they will always benefit from having at least a few disturbing polymaths.

9. Quoted in Victor L. Hiltz, ‘Thomas Young’s “Autobiographical Sketch”’, *Proceedings of the American Philosophical Society*, vol. 122, (August 1978): 254.