The Emotions of Alan Turing:

Article · August 2014

DOI: 10.4018/ijse.2014010104

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The Emotional Turing

The Emotional Alan Turing:

The boy who explained Einstein's Theory of Relativity aged 15½ for his mother

Huma Shah

Systems Engineering, The University of Reading, UK

The Emotional Alan Turing.

This paper makes no apology for its reading like *book reports*. It draws mainly on the reminiscences of Sara and John Turing, Alan Turing's mother and elder brother respectively, as well as from Andrew Hodges' extensive research on the man, his work and his impact gathered for the definitive Alan Turing biography. Alan Turing was a complex, talented man bereft of one stable and loyal companion throughout his life. He was the boy who explained Einstein's Theory of Relativity aged 15½ for his mother, and the *outcast who gave us the modern world* (Sunday Times, 2011).

The Emotional Alan Turing:

The boy who explained Einstein's Theory of Relativity aged 15½ for his mother

Alan Turing lived for 41 years 11 months and 15 days. What might he have accomplished had he lived longer and not reported, as his elder brother felt, "foolishly but typically" (John Turing, 2012, p. 163) a burglary in his Wilmslow Cheshire UK home in January 1952 (Hodges, 1992, p. 454). It is probably not 'politically correct' to wonder had the police investigated the case of the missing items, rather than become side-tracked by Turing's lifestyle, might Turing have bestowed an even grander and influential legacy to the world through his multi-faceted and cross disciplinary endeavours. To the familiar reader I make no apologies for this paper, in Part 1 of a special issue of the international journal of synthetic emotions, bringing together reminiscences of his mother and elder brother, as well as drawing from Andrew Hodges' thorough research into the man. For the unfamiliar Sara Turing's book about her son (centenary edition 2012), Hodges' biography (1992), and Coopers and van Leeuwen collected works of Turing with commentaries (2013) are highly recommended to unearth *Turing the emotional man*.

Alan Turing is rightly placed by Time Magazine as one of the '100 most important scientists and thinkers' of the last century (Time magazine, 1999). His reach is well into this, the 21st century. Turing lived to understand human thought processes and their applicability to *engineering a machine to think*. He died an emotionally complex man. As a child, he had "an extraordinary gift for winning the affection of maids and landladies" (in Sara Turing, 2012: p. 22). As an adult he was unpretentious, at times moody; he could be generous to his own detriment – the instance of lending money to Arnold Murray, the acquaintance and lover who brought about the burglary and Alan's downfall (Hodges, 1992; John Turing, 2012). Alan Turing

could also leave a grown man in tears (his research student Robin Gandy) through criticism (Hodges, 1992, p. 453). A scientist with a good sense of humour Alan cared little about how his scruffy appearance at times might seem to others (John Turing, 2012).

Turing was born *ahead of his time* – he considered things we now take for granted. For example, he understood the vital nature of storage capacity: he pointed out the limited storage capacity of the machines in his period caused them to appear useless outside of their specific design purpose (Turing, 1950: p. 447). Turing experienced "mechanised search" in his Second World War codebreaking and "boldly hypothesized" that conducting various kinds of search would be an 'intellectual activity' decades before the appearance of Google's search engine (Copeland, 2004, p. 354). Search for relevant data and information is now "one of the central tenets of AI" (ibid). For example, IBM's Watson reverse question-answer machine, which successfully beat two humans in a 2011 TV general knowledge quiz show (Shah, 2011), uses *deep search* to support or dismiss a hypothesis (Feldman, 2012). Turing also regarded chess as a suitable pass-time for machines to learn from human contact before IBM's Deep Blue beat chess grandmaster Gary Kasparov in a sensational man vs. machine match in 1997. Turing also married mathematics with biology to study the growth of living organisms, an area known as morphogenesis (Hodges, 1992). It is this genius of a man's *imitation game*[1], (see Fig. 1), Turing's "criterion of thinking" (Hodges, 1992, p. 450) that has influenced the direction of the author's research and collaborations. Simply philosophising about Turing's ideas on machine intelligence is inadequate; with renowned cyberneticist Kevin Warwick the author has implemented over 250 practical Turing tests in which machines have attempted, and sometimes succeeded, in convincing human judges they were engaging with another human (see Shah &

Warwick, 2010ab; Vallverdú, Shah & Casacuberta, 2010; Shah, 2013; Warwick & Shah, 2013ab).

Alan Turing was born not on 21 June 1912 as is incorrectly stated in his elder brother John's afterword, *My brother Alan*, in his mother's biography (in Sara Turing, 2012: p. 145-166), but on Sunday 23 June 1912 at Warrington Lodge, Paddington (Sara Turing, 2012: p. 9), now The Colonnade Hotel in Maida Vale, London UK[i]. The Church of St. Saviour, on Warwick Avenue around the corner from his birthplace, was the place of Alan's christening, on 7 July 1912 (Sara Turing, 2012: p. 9). Less than 42 years later, on Tuesday 8 June 1954 his housekeeper Mrs Clayton found Alan, then a leading academic at Manchester University, dead in his home. There were no smart or mobile 'phones in the 1950s, John, Alan's elder brother learnt of Turing's death late that day, having taken his daughter to the cinema (in Sara Turing, 2012: p. 164). John travelled up to Manchester the next morning to identify his younger brother's body, their mother being away on holiday at the time in Italy, missing the inquest on her return (ibid). Could this tragic end have its roots in Alan's beginnings embedded in them a childhood of separation from his parents? Or was it his reckless naiveté and disregard for legal punishment for homosexual acts in 1950s Britain?

Turing's father was in the Indian Civil Service at the time of Turing's birth until he resigned in 1924 (Sara Turing, 2012: p. 21). His elder "sardonic" brother John wrote:

> "my father took all decisions of consequence in the family … he decided that he and mother should return alone to India, leaving both children with foster parents in England. Probably it was the right decision for me, for I had given my parents a bad fright with my dysentery in India … but it was a harsh decision for my mother to have to leave both her children in England, one of them still an infant in

> arms. This was the beginning of the long sequence of separation from our parents, so painful to all of us and most of all to my mother" (in Sara Turing, 2012: p. 146).

An *emotional being* we can imagine Alan's distress. His mother described her younger son as having "slight rickets" as a small child. Accordingly, the best view was to "leave him in England" (p.9). Having both the Turing boys in a boarding school in the UK probably provided them with stability, while the mother bore a heavy heart, and the youngest son mournful. A 10 year-old Alan in 1922 must have grieved as his parents departed leaving him at Hazelhurst school:

> "… in September his parents saw Alan back to Hazelhurst, and as they drove away in their taxi, Alan rushed back along the school drive with his arms flung wide in pursuit. They had to bite their lips and sail away to Madras" (in Hodges, 1992 p.11).

Sara Turing wrote of such scenes:

> "The autumn saw the boys back at school – John back to Marlborough where he had gone the previous term and Alan back to Hazelhurst; we returned to India, but he hated those partings as much as we did and we were left with the painful memory of his rushing down the school drive with arms flung wide in pursuit of our vanishing taxi." (Sara Turing, 2012, p.17).

The mother believed Alan "soon settled down" (ibid), perhaps more to reassure herself of Alan's feelings. Sara Turing glowingly and proudly wrote of Alan as being a "very pretty and engaging small boy … extremely vivacious and forthcoming" and "a very clever child … with a wonderful memory for new words", having "delightful phrases" such as "for so many morrows" (p. 9). She

did admit her son Alan had "greatly missed my husband and myself and his brother John" (away at another prep school) on her return from India in the summer of 1921. She found Alan a changed child: from "making friends with everyone" to "unsociable and dreamy" (p.16). Sara decided to teach Alan herself "for a term" and by so doing she would give her son attention and companionship, to "get him back to his former self" (ibid). By 1922, Alan was showing his future absorption with chess taking it up and creating "interest in the game among his fellows" (p.19).

Turing's biographer Andrew Hodges described the 14 year-old Alan starting at "one of the original English public schools" (Hodges, 1992, p.20). Hodges says the school, Sherborne, was an educational establishment that "divided the intellectual world into Classical, Modern, and Science, in that order" (p. 23). Turing's entry to Sherborne was around the time of the General Strike in 1926. Undeterred by the strike's effects causing travel disruptions, Alan made it to the school: he telegrammed the school ahead and cycled from Southampton with an overnight hotel stay on his journey (in Sara Turing, 2012, p. 24). This is one instance where Alan showed his ingenuity. He was recognised as an original and interesting character in the school; he proved to be a "delightfully ingenuous and unspoilt", but not a 'normal boy' (p.25). Alan's schoolmasters noted his untidiness with little interest in his personal appearance (p.27), but a very evident precociousness: Aged just 15½ to help his mother appreciate the topic Alan wrote a "précis of one of Einstein's books on Relativity" (p. 29). She wrote of this: "I am sure it never occurred to him that there was anything unusual in a boy of fifteen elucidating Einstein on Relativity" (p. 30).

First love came into Alan Turing's life fleetingly in his teens. In 1927 Alan became aware of another pupil a year ahead of him at Sherborne, Christopher Morcom, with whom Alan was

able to dissipate his loneliness: Alan "worshipped the ground" Morcom "trod on" (Hodges, 1992, p. 35). Christopher Morcom's death in February 1929, due to complications from contracting TB as a child, had a lasting impact on the teenaged Alan: "poor old Turing is nearly knocked out by the shock … they must have been awfully good friends" (p. 46). While Christopher had become friendly with the young Turing, Alan had "surrendered half his mind, only to have it drop into a void" (ibid). Had this loss affected Turing to contact Christopher via a clairvoyant? Later on in manhood Alan made it known he was familiar with "disturbing phenomena" that "deny all our scientific ideas" such as "extra sensory perception, telepathy, precognition, and psycho-kinesis" (Turing, 1950, p. 453-454). This was during his defence of machine thinking countering *the argument from extra-sensory perception* in his acclaimed *Mind* journal paper *Computing machinery and intelligence*, (Turing, 1950). The work of parapsychologist J.B. Rhine must have impressed Turing; Alan was probably aware of the former's extra sensory perception experiments at Duke University in the US. Alan may also have read Rhine's books, *Extra-Sensory Perception* and *New Frontiers of the Mind*. Turing's curiosity with "dreams and prophecies and coincidences", might have piqued his "open-mindedness" which "had to come before anything else; what *was so* had to come before what it was convenient to think" (Hodges, 1992, p. 416). He channelled his perspicacious temperament throughout his endeavours.

Turing's school reports contrasted the image of a nascent prodigy, the worst effecting his father to be "fortified by *The Times* and a couple of pipes" before he would look at them (Sara Turing, 2012: p. 30). Alan's feelings towards his father's attitude to the bad school reports are recalled by his mother "Daddy should see some of the other boys' reports" (p. 30), and elder brother "Daddy expects school reports to be like after-dinner speeches" (p. 152). In 1930, when

Alan was 18 and preparing for Cambridge his father thought it best that he remain at Sherborne for an extra year to secure a scholarship. Alan was shy but he held house-prefect position winning respect "both by brains and character" of his housemaster Geoffrey O'Hanlon (Sara Turing, 2012: p.35). The Headmaster considered Alan a "distinguished and useful member of the community" (ibid). Of Alan's later achievements, the elder brother John wrote of his surprise:

> "The truth of the matter … is that neither of Alan's parents or his brother had the faintest idea that this tiresome, eccentric and obstinate small boy was a budding genius. The business burst upon us soon after he went to Sherborne …. it became apparent that he was far ahead of the other boys in mathematics …" (p.152).

John added that Alan:

> "refused to work at anything except his precious maths and science" (p. 153), causing his father and brother to suffer "successive phases of disbelief, scepticism and recognition as Alan's scholastic achievements smote us in rapid succession … he was a proper job of a swan" (p. 154).

Sara Turing mentioned that her younger son was hardworking and relaxed by running, walking and gardening, but observed Alan "could be abstracted and dreamy, absorbed in his own thoughts which on occasion made him seem unsociable; this was partly because he had no gift for 'small talk' unless spiced with interest or humour" (p.57). Turing was moody, according to his mother for "unaccountable reasons he would be put out and then, without explanation, would depart and walk off his mood. What made him very angry indeed was to be contradicted on scientific points" (p.58). John saw his younger brother as running "the whole gamut" between an eccentric, practical joker and "just plumb crazy", the latter characteristic epitomised by Alan's chaining his drinking mug to a radiator when a codebreaker at Bletchley Park. This was probably

to prevent it being stolen (in Sara Turing, 2012: p. 157), because he had had bicycles stolen previously (p. 60). A dismayed Alan in January 1952 ended one letter about his misfortune with "I have just had my house broken into … it followed shortly on a theft from me at the University. I go about expecting a brick to fall on my head or something disagreeable and unexpected anywhere" (Hodges, 1992, p. 454).

It may be surprising to learn that Alan had little time for social chat, especially since he based his *imitation game* for machine thinking on conversation (Shah, 2013). Turing's idea of discourse was "a thoroughly disputatious exchange of views" (John Turing, 2012, p. 159). By dressing shabbily, Alan ignored how other people might see this; he achieved a *modus vivendi* in which the reactions of others "counted for so little" (p. 160). The elder brother recalled one instance when Alan, invited to John's home for sherry a party, arrived "dressed like a tramp" and then "vanished within ten minutes without a word of apology or excuse" (p.160). Perhaps it was Alan's speech impediment that prevented him from tolerating interaction; he had a "painful stutter" which his elder brother considered "in a class by itself" accompanying a "high pitched and raucous, unnerving, laugh" (p.161). On his stuttering, his mother reported a friend of Alan saying he had "the most uninhibited stammer I have ever heard" (Sara Turing, 2012, p. 63). She did not understand why it existed, "It is difficult to account for Alan's stammer. In broadcasts there was not a trace of stammering when he had the script before him and knew what he was going to say" (p. 63). Alan was uninterested in doing anything about it: "He turned a deaf ear to the suggestion that to improve his delivery when lecturing he should take lessons in elocution" (p. 63).

As an adult, Alan was "broad, strongly built and tall, with a square, determined jaw and unruly brown hair. His deep-set, clear blue eyes were his most remarkable feature." (p.56). In

contrast to this constitution, Alan was susceptible to faints: “Once having got over-tired on a walking tour he had a narrow escape when he fainted in his bath. Medical examination could find no physical cause for this idiosyncrasy”, something he never outgrew and about which “he tended to be apprehensive” (Sara Turing, 2012, p.63). His brother John noted Alan maintained an “unsightly condition of his hands, with every finger picked raw in a dozen places” (John Turing, 2012, p. 161). John supposed Alan lived “the lot of most geniuses, in some strange world of his own” (p. 160), but the “hands those of a tormented man” (ibid). Was torment a consequence of Alan attempting to live like ‘normal’ men? Britain of Turing’s period was an unwelcome place for homosexuals; it was against the law for men to have sex with other men “full stop”, you would be sacked from employment if you were a politician or a teacher “They were thought to be dangerous…. You did not talk about your sexuality unless you felt very, very secure” (McKellen, 2013, p.3). Alan did try to *be normal*; he once considered marriage to the opposite sex. At the time his elder brother was unaware the younger Turing was a practicing homosexual (John Turing, 2012, p.162), John nonetheless wrote ungraciously of Alan’s engagement to fellow Bletchley Park codebreaker, Joan Clarke: “There was the most absurd and even farcical affair of his ‘engagement’ … to an earnest female mathematician” (p. 161). John contrasted Alan’s fiancé with his own female companions: “My parents were pretty well accustomed to my landing them with the young, attractive and lively young women whom I fell in love with …. And cheered up my father immensely” (p.162). That Joan might have provided valuable companionship to Alan seemed unimportant to John. How must Alan have felt? Was his family’s behaviour towards Joan a factor in Alan calling off the engagement? He may have been embarrassed for himself, and hurt for Joan at his brother and parents’ unspoken views towards his fiancé and cherished colleague.

The death of Alan Turing was a shock. He was found on his bed by his housekeeper on the morning of June 8, nearby a part eaten apple laced with cyanide. His death had come to pass two years after his arrest for "gross indecency with another male" (Leavitt, 2007, p.268). From that point on, suffering the ignominy of a court case followed by chemical treatment to "turn homosexuals into heterosexuals" (Hodges, 1992: p.468), Turing's life "was a slow, sad descent into grief and madness" (David Leavitt, 2007: p.268). Alan signed off one letter "yours in distress, Alan" (p. 269). Yet some of the misery and obligatory visits to his psychiatrist, Franz Greenbaum, and the hormone treatment meted out to him as punishment were now past (Hodges, 1992: p.487), but the "blow" he had suffered to his self were possibly not behind him. For his Bletchley Park work, Alan had been granted an OBE, "saving the nation from disaster" (John Turing, 2012, p.156). Alan had also been elected a member of the august Royal Society in 1951 (Leavitt, 2007:p.261). So what caused him to take such drastic action, with so much fascinating and pioneering work left unfinished? He gave no inclination of suicide: "there was no warning, no note of explanation. It seemed an isolated act of self-annihilation" (Hodges, 1992: p.487). Death caused by poisoning was not disputed at the inquest on 10 June 1954, perhaps more to protect surviving family members from media intrusion. Alan's mother "would not accept the verdict" she felt it was an accident (p. 488). John Turing learned from his younger brother's diaries, given to him to read by the psychiatrist, "Alan had been a practicing homosexual since the age of puberty" (p. 165). John received a further shock learning Alan loathed their mother and his feelings towards her were "scarifying" (p. 165). Perhaps Alan contained pent up emotions, resenting the parting from his parents, especially from his mother, so early on in his life. Alan may have harboured feelings of abandonment and betrayal at being left alone at school, and not being close enough to have the support of his brother, four years elder at

Marlborough school. And then the tragic loss of his first love Christopher Morcom in his teens. These incidents and more shaped Turing's persona.

He died too young, but Alan was remembered by those who knew him as a generous spirit. His mother had much used items in her home that were gifts from her younger son. One present for a niece brought forth from her the exclamation "What a Christmas" (Sara Turing, 2012: p.64). On another occasion, Alan gave financial help to a friend to revisit Central Africa: "these instances of thoughtfulness reveal the sensitivity hidden beneath his somewhat rough-hewn exterior. Only those who knew him best discerned that underneath he was, in some respects, very sensitive" (ibid). Alan was also a kind man with an "impish sense of humour" (p. 166). As an adult did he feel his mother should have stood up to his father to remain with the baby Alan in the UK, while his father continued employment in India? Alan may have lay blame on his mother for how his later life panned out. If Alan had found one loyal, stable love to connect intimately with, Alan may have felt differently about his mother, and his life may not have ended so soon.

This short paper only provides a glimpse of the man. Alan Turing's values and state-of-mind were not of the ordinary human; this emotionally complicated man was guided towards a different type of decision-making, one that pioneers and pushes fields of study to new frontiers. Alan Turing's story has been given the Hollywood treatment: Benedict Cumberbatch, BBC1's Sherlock Holmes, plays the World War II mathematician/ codebreaker in *The Imitation Game* film (IMDB, 2013). Set for release in the 60th year since Turing's death, the movie's depiction, the words of his late mother, elder brother, and others may do for Turing what he deserved all along, to share a platform with the likes of Einstein. Alan Turing was an emotional polymath,

who was the “outcast who gave us the modern world” (Sunday Times, 2011). For further reading Andrew Hodges *Alan Turing: the enigma* is highly recommended.

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Footnotes

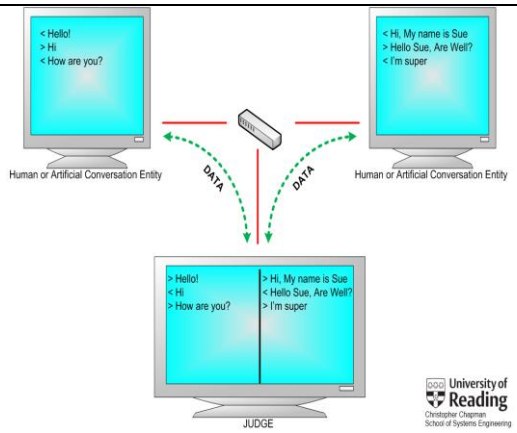
[1]Figure 1 acknowledgement:

C.D. Chapman, Reading University for *simultaneous comparison test*

Harjit Mehroke for *viva voce test*

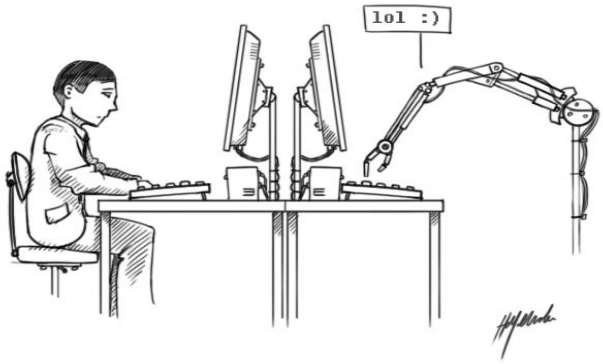
Figure Captions

Figure 1. Turing's Imitation Game



Simultaneous comparison test

Human judge interrogates machine and human in parallel determining which is which



Viva voce test

Human judge interrogates machine and human one at a time identifying which is which

[i] Alan Turing online scrapbook: http://www.turing.org.uk/scrapbook/early.html