Account of the Henry display talk of 05/05/2017 as delivered and submitted by Henry's youngest daughter, Elaine O'Hanrahan, curator of the D.P.Henry Archive.

"Seventeen years ago I entered the Kilburn Building for the first time, clutching a portfolio containing samples of my father's machine-generated artwork. I was hoping to find a sympathetic ear, but, knowing no one, my courage failed me and a few minutes later, I fled the building. So it was really encouraging when David Rydeheard made contact with me some three years ago. My sincere thanks go to Steve Maddock- the 'prime mover' in this scenario, to Steve McCabe and his digitalisation team and above all to David Rydeheard, for his imaginative and determined response to bring the Henry Display project to fruition.

At first glance, Philosophy and Computer Science might seem worlds apart, but my father, on a number of counts, was definitely influenced by what was happening in Manchester's Computer Science department in the early 1950s.

Henry started teaching Philosophy at Manchester University in 1949. When he arrived here, in addition to his passion for Philosophy and for my mother[1], he brought with him two other life-long passions: art and technology. Coupled with this, he had always harboured a hankering to be a mechanical engineer of some sort.

Henry was well aware he came to Manchester at a very exciting time in terms of computer science development. This area especially interested Henry as, whilst serving as an office clerk with R.E.M.E (Royal Electrical and Mechanical Engineers) during WW2, he had been involved with predictors as found in the automatic fire control systems of anti-aircraft guns.

Tom Kilburn, who led the team that developed the Manchester computers, had arrived at Manchester in 1947. My father had a life-long interest in cathode-ray tubes, which were used in the development of these early computers. Henry also referred to his first drawing machine of 1961 as 'baby', just as Kilburn's first computer was called 'The Baby'.

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[1] For a full account of the wartime courtship of my parents, please visit:
http://www.bbc.co.uk/history/ww2peopleswar/stories/74/a2701874.shtml

From 1948 Alan Turing had also been helping to develop the Manchester computers. In 1950 Turing developed a test, the Turing Test, to measure a machine's ability to exhibit intelligent behavior equivalent to, or indistinguishable from, that of a human. This idea was not lost on Henry who imbued his drawing machines with human-like qualities. As he recalled, Henry liked to let them 'do their own thing', or 'decide when a picture is finished' or 'paint what it thinks' or 'teach him something new'."

At this point, Elaine was gently interrupted by Jay Kennedy, a former philosophy student of Henry's[2]. Jay informed the gathering that Henry had told him of a Philosophy Reading Seminar Henry had organised, where Turing first presented his ideas on machine-intelligence, which was to become known as The Turing Test. This detail stunned everyone, Elaine included. Dr. John Shand, another former philosophy student of Henry's, subsequently unearthed written evidence to support Jay's recollection as being founded on fact[3].

Elaine continued:

"Like Henry, Turing was a logician. During the course of 1951-1952, Henry assisted fellow philosopher and logician Dr. Wolfe Mays in creating a 'Jevonsonia' exhibition (October 1952) in the university's Science Library. William Stanley JEVONS in 1866 was Professor of Logic and Moral and Mental

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[2] Jay has since explained (14/05/2017) he was *not* a former student of my father's but got to know Henry only in his last years, when they both lived on Corkland Rd., Chorlton.

[3] Email (06/05/2017)from Dr. John Shand, to Elaine O'Hanrahan, in response to Jay Kennedy's revelation concerning Alan Turing and Henry, made at the Henry Display event of 05/05/2017.

"My old friend Alan Richomme who lives in Jersey, who did philosophy with me as an undergraduate - he later went into programmng - sent me this:

<I looked up Margaret Boden's enormous (1500 pages) Mind as Machine (a history of cog science). She says "soon after the war, he [Turing] wrote a technical report on how to make "thinking machinery" - and there outlined what was later called the Turing Test. But the Official Secrets Act prevented publication. Some of Turing's philosopher contemporaries were aware of his general position. In Oct. 1949, he took part in a Manchester seminar on the "The Mind and the Computing Machine" with the philosophers Dorothy Emmet and Wolfe Mays, and the chemist-philosopher Polanyi. But none of them was persuaded".

In the biblio, she references "Manchester Philosophy seminar (1949)" and says "Notes on a discussion on "The Mind and the Computing Machine", held in the Manchester Philosophy seminar, 27 Oct. Written by a member of the philosophy dept".

She also references 5 papers by Wolfe Mays on the idea of thinking machines from the early 50s, 2 of them written with Desmond Henry!"

Philosophy at Manchester (then Victoria) University. Jevons had invented a mechanical computer for the logical computation of truth tables, which he called *The Logic Piano*. The Philosophy Department borrowed this from Oxford University where it was being stored and Henry helped to restore it to working order. The Logic Piano[4] was displayed as a central part of the exhibition. My father went on to make his own logic machine based on a similar piano design.

In 1951 Turing's interests shifted to mathematical biology and in 1952 to Morphogenesis- the development of pattern and shape in biological organisms. Turing's paper on the chemical basis of Morphogenesis was published as a paper in *The Philosophical Transactions of the Royal Society,* which Henry will have doubtlessly perused, since he shared a similar interest to Turing's, regarding organic shape and form. Among Henry's many books are to be found those by D'Arcy Thompson (*On Growth and Form*) and by Theodore Cooke (*The Curves of Life*), describing spiral formations. Henry likened the abstract patterns produced by his drawing machines to 'weirdly organic forms' and the names he conferred to some of his machine- drawings reflect this- *Medusa, Marine Flea.*

It was in 1952 that Henry purchased his first Sperry Bombsight Computer from an army surplus warehouse in Shude Hill. It was an analogue computer designed to calculate the accurate release of bombs onto their target. The bombsight represented the kind of mechanical technology Henry was familiar with and enjoyed the most, as it involved cams, differentials and gear trains. *Nine years later* in 1961, he transformed the bombsight into his first drawing machine in order to capture "the mechanical dance" (Henry) of the machine's innards in motion, on paper.

The electro-mechanical drawing machines Henry created during the 1960s, based around adapted analogue computers, correspond to his obsession with clockwork and mechanics- the transparent interface prior to the opaque interface of later modern digital computers. So it is most fitting that this display figures in the Kilburn Building. Most appropriately, in 2012 a new

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[4] It would appear the existence of Jevons' *Logic Piano* was a revelation to those present. Elaine is currently compiling material from the D.P. Henry Archive, in relation to the *Jevonsonia* exhibition, for forwarding to Jim Miles at Manchester University. The correspondence also reveals Jevons' daughter donated correspondence between Jevons and a number of prominent 19th century logicians, to the Philosophy Department at Manchester University.

course was created at Oxford University to commemorate Turing's birth: Computer Science and Philosophy.

By 1949 my father had gone from being a Huddersfield boy with no A levels and seven years in the armed forces, to a Philosophy graduate from Leeds University to a Philosophy lecturer at Manchester University. This was no mean feat, which owed much to the post-war team at Manchester's Philosophy Department: Professor Prior, Wolfe Mays and Dorothy Emmett. The fact I, a young child in the sixties, can recall the names of his philosophy colleagues throughout his long career at Manchester, demonstrates their importance in his life.

Finally, a huge thank-you to all who have supported me in promoting my father's achievements in the field of machine-generated art- it's been a very exciting journey so far and who knows what the future may hold??"

David Rydeheard then asked for questions and comments from those gathered. Jay Kennedy reminded us all of the significant contribution my father had made to the study of Medieval Logic, which Jay explained had links with computer science.

The general consensus seems to be that this occasion has given rise to a number of new lines of inquiry in relation to my father, Alan Turing and William Stanley Jevons.