Particle or Wave? Both. Essay
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In November last year I was sat in a pub in Dublin reading an article about how scientists had successfully beamed 'entangled' particles from an orbiting satellite to ground stations located 700 miles apart: 'As it soared over China, the satellite created pairs of photons with properties that were linked through quantum entanglement. It then beamed these simultaneously to ground stations in Delingha, Lijiang and Nanshan.'[1]. I was visiting Dublin for a conference on the theme *Using Letterpress*. On returning to my job, using letterpress, I found a large box waiting for me. The box had travelled approximately 700 miles from Oslo to Glasgow and contained a funny (peculiar) typeface. Unbeknownst to me the working name of the typeface was *Anti-Matter (Non-Type)*.

Is it possible to design a typeface that can simultaneously span space and time? Maybe they all do? Is it possible to create a lack of typeface, or 'non-type' one that isn't there?

Printing from wooden blocks (xylography) has probably existed for a couple of millennia, the oldest existing block-printed fragment that we know of being from China, dating as early as 220AD.[2] Despite this ancient precedent, woodtype (letters or related symbols manufactured individually, generally in hardwood for durability) only really got going in the early nineteenth century. The evolution of styles was rapid, mirroring the speed of industrialisation and articulating a spirit of the age in the explosion of a new and inventive genre of type design. Sadly, the significance of this new world of letters was subsequently cast in the shade. It seems to be generally assumed that these Victorian letterforms were the bastard children of educationally impoverished cack-hands, dizzied by the spinning wheels of industrial manufacture, their senses overtaken by the pandaemonium of the free market. Most mid 20C texts on typography are rightly concerned with the reform of the page but deal with the seemingly inconsequential birth of a whole genre of letterforms in this way, if at all. Here is a favourite example:

> After the fine printing of earlier centuries, when the craftsman was also an artist, the use of type degenerated during the Victorian age until it was handled with almost complete and uniform misunderstanding… As the walls of the Victorian parlour were muffled with layer upon layer of tasselled hangings, prints, pictures, stags' heads, wax flowers, brackets, plates, swords and a hundred other knick-knacks, so was the white space of Victorian printing paper crammed with every conceivable kind of grotesque and distorted type…[3]

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[1] Ian Sample, Scientists make quantum leap towards a secure new kind of internet, The Guardian, 15 June,

[2] Shelagh Vainker in Anne Farrar (ed), Caves of the Buddhas, 1990, British Museum Publications

[3] Michael Middleton, Soldiers of Lead, An introduction to layout and typography for use in the Labour Party, 1948, The Labour Party

Similarly, in *An Essay on Typography* (1931) Eric Gill states that: 'The business of poster letters has not yet been extricated from the degradations imposed upon it by an insubordinate commercialism.' But Gill's admonishment is more nuanced; it continues: 'Mere weight and heaviness of letter ceases to be effective in assisting the comprehension of the reader when every poster plays the same shouting game.'[4]

So rather than disregard all of the types themselves, Gill's take suggests the culprit is their use. In her book *Nineteenth Century Ornamented Typefaces*, Nicolette Gray writes:

> We suffer today from the lucidity and insistence with which the principles of book typography have been explained to us. Having learnt our lesson we tend to apply it indiscriminately to all forms of lettering. "Typography is the efficient means to an essentially utilitarian and only accidentally aesthetic end. . . . If readers do not notice the consummate reticence and rare discipline of a new type it is probably a good letter." Mr Morison has stated the austere doctrine in its most extreme form, but his idea is the logical root behind all doctrines that the primary purpose of all lettering must be legibility, that its only perfect attribute is simplicity.[5]

This is clear expression of how we might have missed the wood for the trees in trying to calculate the significance of the contribution made during the Victorian wood-type era. Even the aforementioned, doctrine-inclined Mr Morison (arch-instigator of Times New Roman) whilst warning in the clearest possible terms that: 'No printer should say, " I am an artist... I will create my own letter forms."'[6] and espousing the need to stay well clear of 'bright typography' does make the distinction between the aims of different media. Probably in order to make sure his aims for high-typography (book) aren't mistaken for low-typography (ephemera) he is quite clear. On 'bright typography' (presumably encompassing a range of 'wrongs' from creative Victorian to early Modernist) he remarks: "Cunning of this sort is desirable, even essential in the typography of propaganda, whether for commerce, politics, or religion, because in such printing only the freshest survives inattention."[7]

To appreciate letterforms as Nicolette Gray entreats it is necessary to take them seriously, to extract them from the cluttered print-matter of the time and view them as they were drawn, manufactured and sold: letterforms in isolation. Taking this view we gain a secondary reading of the types from the chronology of their design: 'The aim of both founders (manufacturers) and printers was to continuously supply the public with novelties which would attract and please; to succeed in this they had to keep in exact touch with the mood of the moment.'[8] Although sans serif types made their first appearance in 1816, the foundational

[4] Eric Gill, An Essay on Typography, 1931, Sheed and Ward

[5] Nicolette Gray, Nineteenth Century Ornamented Typefaces, new edition 1976, first published 1938, Faber and Faber

[6] Stanley Morison, First Principles of Typography, 1936, Cambridge University Press

[7] Stanley Morison, First Principles of Typography, 1936, Cambridge University Press

[8] Nicolette Gray, Nineteenth Century Ornamented Typefaces, new edition 1976, first published 1938, Faber and Faber

letterforms from which *Anti-Matter* draws its visual cues emerge in the 1830's. Gray gives us more than a suggestion of the connection between time, place and form:

> Flowing italics and jovial lower case letters are out of favour. In their place are compressed fat faces and heavy sans serifs. The new world is earnest and serious and not even letters may be irresponsible or insincere. There is no mistaking the atmosphere of the year of revolutions abroad and the Reform Bill at home. ...These new letters seem to compress into their gaunt angularity the essentials of the evangelical attitude of early Victorian England; the will to face the dreariest facts, unflinching confidence and tyrannical dogmatism.[9]

Type design moved on dramatically in the early 20th century, all the way in fact to a revival/modernisation of many Victorian styles, well documented in the typefaces chosen for the Festival of Britain (1951). Working against the lingering Victorian wood-letters were the combined forces of a newly professionalised, trained class of typographers, the growth and professionalisation of the advertising industry and the related aesthetic impact of 20C Modernism. But wooden types were manufactured for durability and printers were apt to use whatever means and equipment they had to hand. Michael Middleton's *Soldiers of Lead, An Introduction to Layout and Typography for Use in the Labour Party* shows them alive and well in 1946 (fig 1). So whilst the factors of professionalisation and Modernist reform in design certainly played a large part in signaling the end of the wood-type era the most significant factor in culling their day-to-day use was the great mechanic shift from letterpress printing to photolithographic reproduction. It was the move of printers from presses in which the wood-types would fit to presses in which they wouldn't that really consigned these letters and the ill-mannered, cacophonic conventions of their use to the type-dump of printing history. Square peg, no hole.

Leaping forwards to 2016 we find Austrian born, Oslo based type designer Ellmer Stefan, author of our *Anti Matter* typeface, describing his project *The Pyte Foundry* as:

> Paying tribute to the typographic diversity of the 19th century... a "revival in spirit" indulging in stylistic manifoldness and idiosyncratic hyperbolism... This project is a digital protraction of these Victorian vulgarities. For those who fear the "degradation of typographic culture" — here is what I have for you: a set of 52 Display Typefaces conforming to no other standard than that of visual pleasure![10]

Anti Matter takes the idea of degradation or pulling type design apart literally, and places this theme back into the analogue world of wooden letters. The design is based on a modular system developed in the mid 1800s

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[9] Nicolette Gray, Nineteenth Century Ornamented Typefaces, new edition 1976, first published 1938, Faber and Faber
[10] Ellmer Stefan, thepytefoundry.net, 2016

to aid rapid production of letters by sectional die stamping (figs 2 & 3). The relationship between foreground and background is reversed, the letterform being read as the background, the counterform as the graphic element. If letters are the 'atoms of knowledge'[11] then here is where the atom gets split. The shapes that make up each letterform are freed, able to act independently, allowing unusual distances between the constituent parts of our atoms. The design references a particular stage in type manufacture but also draws on the long arc of type history, highlighting the experiments and trials of an era-defining genre whose impact and parallels with the present day's rapid evolution of digital type design remain frequently overlooked. The physical components of the typeface, isolated as sub-atomic graphic particles whilst simultaneously beaming across the page to form its quantumly entangled letters. Particle or wave? Both.

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[11] Dr Frances Robertson, Common Craft: Translation, paper given at KHiO Research Week, 2019