Typography versus Hitler—The Book Production War Economy Agreement

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http://cforster.com/2013/06/book-production-war-economy

This post is a summary of some things I learned trying to understand what the logo above means, after I discovered it on the copyright page of *Introducing James Joyce* (1942). *Introducing* is a brief selection of Joyce's works (including selections from *Dubliners*, *Portrait*, *Ulysses*, and *Finnegans Wake*) selected and introduced (very briefly) by T. S. Eliot.

The Book Production War Econcomy Standard

The British War Economy Standard was established as a way of saving paper during the Second World War and economizing book production. Indeed, even as the war drove up *demand* for books1, the supply of books was constricted drastically. This reduced supply of books owes to a number of factors (a reduced labor force as individuals enlisted; a shift in printing capacity to military projects, etc.), but chief among them was the rationing of paper.2 In England,

> Paper was rationed, beginning in March 1940, when publishers were allowed only 60 percent of what they had used in 1938-39. The proportion fell to 37.5 percent by January 1, 1942, when the Book Production War Economy Agreement took effect. The scheme

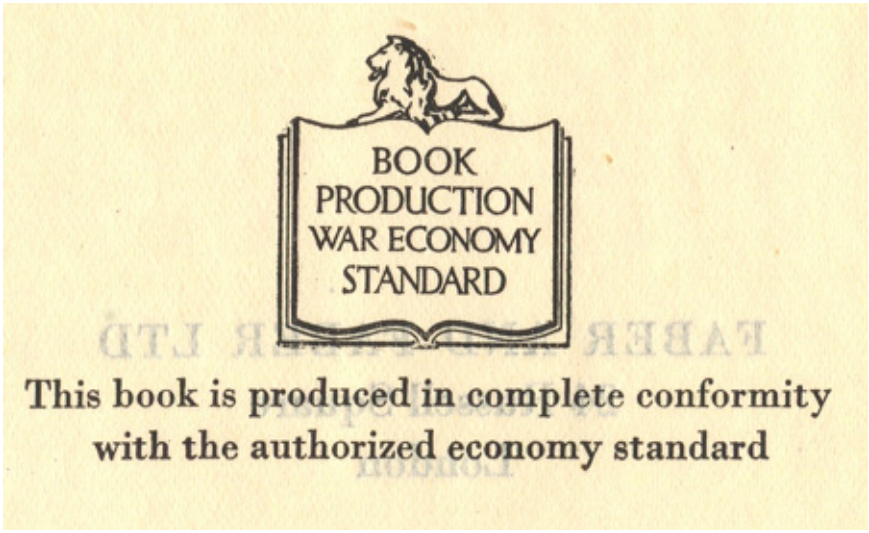


Figure 1: Book Production War Economy Standard Logo

> mandated smaller type, less white space, and inferior papers and bindings. It resulted in some remarkably ugly books, but it conserved raw materials. (Rose 351)

While rationing occurred in the United States, under the direction of the War Production Board, rules for paper use seem to have been comparatively liberal.3 In Britain, by contrast, a more severe shortage led to the Book Production War Economy Agreement—an agreement between the British government and publishers which apportioned paper among publishers (based on their 1938-39 usage4) and spelled out standards for paper conservation. Valerie Holman's *Print for Victory* tells the story of books in England during the second World War in detail, and includes extension discussions of the BPWEA. As an appendeix, she includes some of the details of the BPWEA. It is my chief source in this post; its a great work with truly excellent illustrations.

The BPWEA included a variety of measures for reducing, and rationalizing, paper use. For instance, as the war continued, a process

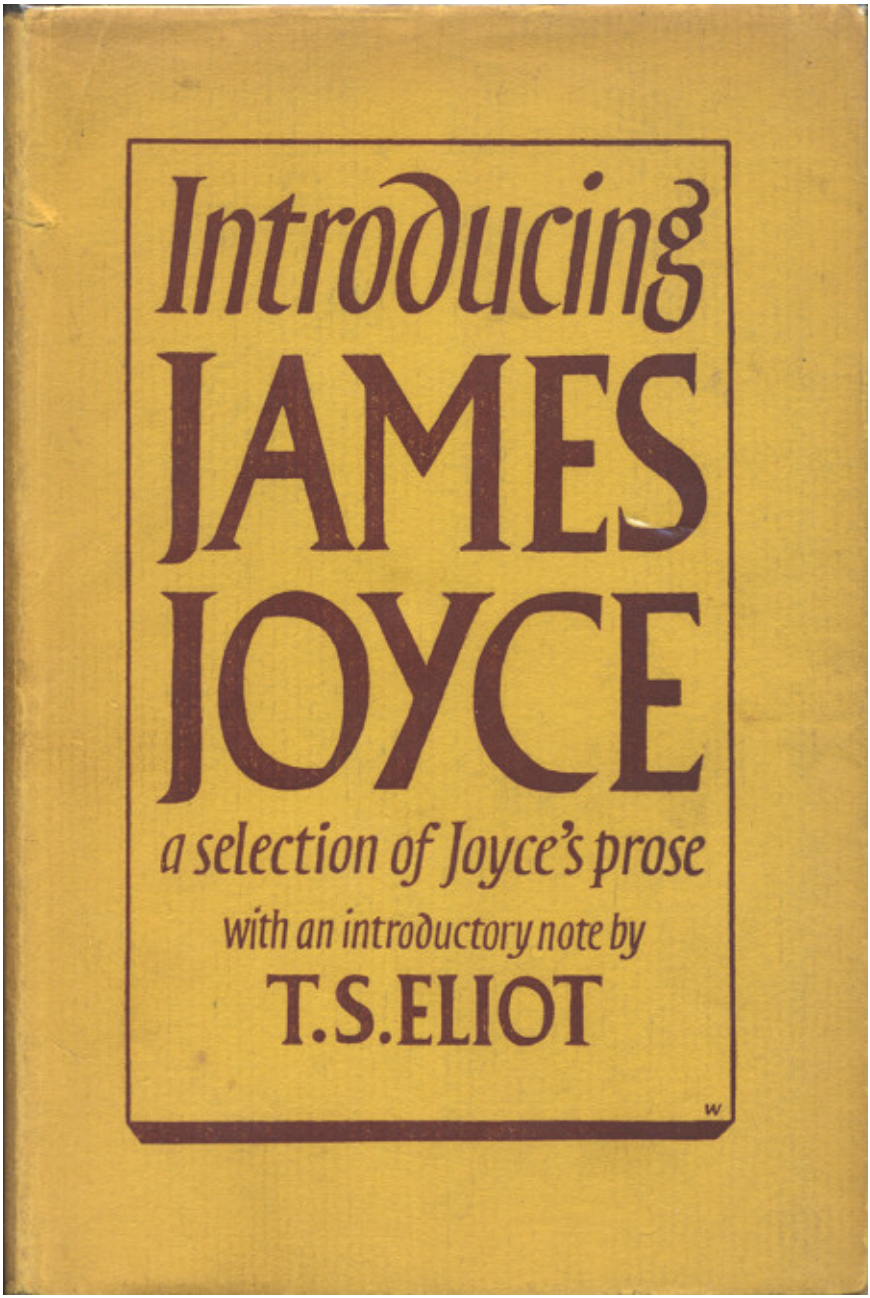


Figure 2: "Introducing James Joyce" Dust Jacket"

evolved for prioritizing certain types of books over others (by affording an additional paper ration for books deemed "essential," see Holman 83*ff*). But it also included rules for making the most efficient use of each page: "Publishers decided to focus their attention on the printed page, looking at books not as they were, but as they might be if less white space surrounded the text and the type size was reduced so that more could be printed on less paper" (Holman 72).

Measuring Paper Use

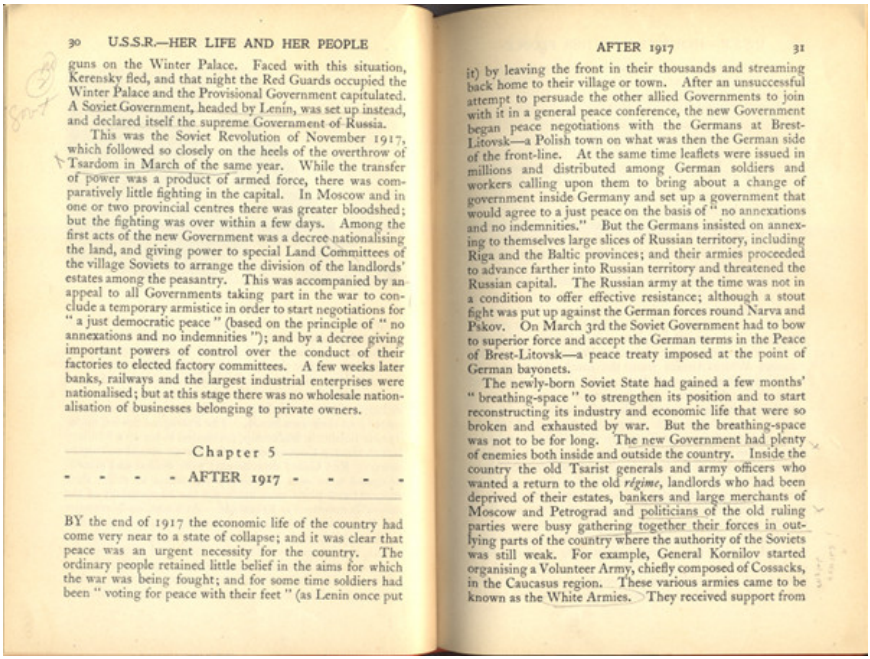
The BPWEA established rules for the maximum weight of paper and boards for binding.The weights both are based on the weight of a ream of quad crown—40"x30"—sheets. Which is not an easy measure to imagine, unless you happen to have a paper factory handy. It also required:

- "preliminary matter" must not exceed four pages (introductions, tables of contents, and so on may be regarded as part of the text, not preliminary matter)
- Chapter Headings and Breaks "must not be extravagantly displayed and must start not lower on the page than the height of the third line of the text on a full page. There must be no blank page between chapters. In fiction, chapters must be run on with a gap of not more than eight lines…" (qtd. in Holman 271).

For instance, this volume, *USSR: Her Life and People*, published in 1943 under the BPWAE, shows a chapter break that is decidedly not extravagant:

Additionally a book must meet one of two "typographical standards":

1. *Type-to-page Ratio and Maximum Type Size*: "The percentage of type-area to the page-area (untrimmed) must not be less than 58 per cent" (Holman 268). Additionally, this provision



30 U.S.S.R.—HER LIFE AND HER PEOPLE

guns on the Winter Palace. Faced with this situation, Kerensky fled, and that night the Red Guards occupied the Winter Palace and the Provisional Government capitulated. A Soviet Government, headed by Lenin, was set up instead, and declared itself the supreme Government of Russia.

This was the Soviet Revolution of November 1917, which followed so closely on the heels of the overthrow of Tsardom in March of the same year. While the transfer of power was a product of armed force, there was comparatively little fighting in the capital. In Moscow and in one or two provincial centres there was greater bloodshed; but the fighting was over within a few days. Among the first acts of the new Government was a decree nationalising the land, and giving power to special Land Committees of the village Soviets to arrange the division of the landlords' estates among the peasantry. This was accompanied by an appeal to all Governments taking part in the war to conclude a temporary armistice in order to start negotiations for "a just democratic peace" (based on the principle of "no annexations and no indemnities"); and by a decree giving important powers of control over the conduct of their factories to elected factory committees. A few weeks later banks, railways and the largest industrial enterprises were nationalised; but at this stage there was no wholesale nationalisation of businesses belonging to private owners.

Chapter 5

- - - - AFTER 1917 - - - -

BY the end of 1917 the economic life of the country had come very near to a state of collapse; and it was clear that peace was an urgent necessity for the country. The ordinary people retained little belief in the aims for which the war was being fought; and for some time soldiers had been "voting for peace with their feet" (as Lenin once put

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it) by leaving the front in their thousands and streaming back home to their village or town. After an unsuccessful attempt to persuade the other allied Governments to join with it in a general peace conference, the new Government began peace negotiations with the Germans at Brest-Litovsk—a Polish town on what was then the German side of the front-line. At the same time leaflets were issued in millions and distributed among German soldiers and workers calling upon them to bring about a change of government inside Germany and set up a government that would agree to a just peace on the basis of "no annexations and no indemnities." But the Germans insisted on annexing to themselves large slices of Russian territory, including Riga and the Baltic provinces; and their armies proceeded to advance farther into Russian territory and threatened the Russian capital. The Russian army at the time was not in a condition to offer effective resistance; although a stout fight was put up against the German forces round Narva and Pskov. On March 3rd the Soviet Government had to bow to superior force and accept the German terms in the Peace of Brest-Litovsk—a peace treaty imposed at the point of German bayonets.

The newly-born Soviet State had gained a few months' "breathing-space" to strengthen its position and to start reconstructing its industry and economic life that were so broken and exhausted by war. But the breathing-space was not to be for long. The new Government had plenty of enemies both inside and outside the country. Inside the country the old Tsarist generals and army officers who wanted a return to the old *régime*, landlords who had been deprived of their estates, bankers and large merchants of Moscow and Petrograd and politicians of the old ruling parties were busy gathering together their forces in outlying parts of the country where the authority of the Soviets was still weak. For example, General Kornilov started organising a Volunteer Army, chiefly composed of Cossacks, in the Caucasus region. These various armies came to be known as the White Armies. They received support from

Figure 3: An Opening from "USSR: Her Life and People," showing a Chapter Heading

specifices maximum type sizes and leading; thus a book measuring 8.75" by 5.625"—a demy octavo—or larger can have type no larger than 11 point, with 1 point leading. A small book (smaller than crown ocatvo, 7.5" by 5in") must have type set no small than 11 pt, with (!) no leading. (The agreement includes exceptions for Children's and Educational Books, as well as for books under 64 pages).

2. *Minimum Words per Page*: Alternatively, one could meet the typographic standards by demonstrating a minimum number of words per page. The type-area must be a minimum of 55 (rather than 58) percent of the page; but one must also meet a minimum number of words per page based on format (e.g. 478 words per page for a page measuring 8.75" by 5.625"; 375 for a crown octavo volume, etc). It also includes a procedure for estimating words per page.

A book had to meet *one* of those two typographical standards—meaning, in effect, a publisher could choose to have wider margins but guarantee a certain number of words per page (the second standard), or a publisher could decide to have smaller margins (a larger type-area and type-to-page ratio) and stick with specified contraints for type size and leading.

Additionally, there were other exceptions: for works printed for export; for books printed as part of a pre-existing multivolume set or series, etc.

Did these contraints produce, as Rose suggests, "some remarkably ugly books"? The effects of these requirements were significant enough that one member of the Publisher's War Emergency Committee worried that the standard was making books unreadable: "We must at all costs study the eyesight of readers," he wrote in a letter to the Board of Trade at the beginning of 1943, "Already I have received complaints from our own Services and from the American Services that the type used in many of our books is too small" (qtd. in Holman 74).

What does this look like in practice? Here is a page from *Introducing James Joyce*:

One can feel the difference in the book: it is very thin; the boards are light (it has an unusual degree of bend for a book published in boards, feeling halfway between a hardcover and paperback). It has very little preliminary matter: the book has a blank free endpaper, a half-title page (with blank verso), and a title page (with copyright information and BPWEA statement on the verso) before the main text begins. The paper is indeed thin; if you look closely you can see through the page, to the type on the opposite side of the page.

And what about the typographical standards? The page measures 7 inches by 4.75 inches. According to the BPWEA, it must have a minimum of 332.5 words per page. That calculation is made by multiplying the total area of the page by 10 words per square inch; the BPWEA specifices a slightly different requirement of words/in^2 for other formats. Per the BPWEA, estimatation of the number of words per page for a volume must be based on a count of 10 consecutive lines, taken from 10 random pages. For *Introducing Joyce* I got an average of 106.5 words per ten lines; 35 lines per page, means an average of 372.75 words per page. This figure is well above the BPWEA requirement; I imagine that the excerpts from *Finnegans Wake* contribute to surprisingly large number (they have very few paragraph breaks or short lines, and so have consistently full lines).

Introducing Joyce also meets the type-to-page ratio. By my measurement, the type area is 62.5% of the page area.

For comparison, consider this page from *Boot and Saddle in Africa*, published in 1943 (when the BPWEA was in full swing), but published and printed in the US.

It's copyright page declares that "This book has been manufactured in this form in compliance with orders of the War Production Board for the conservation of paper and other materials necessary for the prosecution of the War." Yet, these requirements were far less strin-

apprehensions of all kinds, whether through sight or hearing or through any other avenue of apprehension. This word, though it is vague, is clear enough to keep away good and evil which excite desire and loathing. It means certainly a stasis and not a kinesis. How about the true? It produces also a stasis of the mind. You would not write your name in pencil across the hypothenuse of a rightangled triangle.

— No, said Lynch, give me the hypothenuse of the Venus of Praxiteles.

— Static therefore, said Stephen. Plato, I believe, said that beauty is the splendour of truth. I don't think that it has a meaning but the true and the beautiful are akin. Truth is beheld by the intellect which is appeased by the most satisfying relations of the intelligible: beauty is beheld by the imagination which is appeased by the most satisfying relations of the sensible. The first step in the direction of truth is to understand the frame and scope of the intellect itself, to comprehend the act itself of intellection. Aristotle's entire system of philosophy rests upon his book of psychology and that, I think, rests on his statement that the same attribute cannot at the same time and in the same connexion belong to and not belong to the same subject. The first step in the direction of beauty is to understand the frame and scope of the imagination, to comprehend the act itself of esthetic apprehension. Is that clear?

— But what is beauty? asked Lynch impatiently. Out with another definition. Something we see and like! Is that the best you and Aquinas can do?

— Let us take woman, said Stephen.

— Let us take her! said Lynch fervently.

— The Greek, the Turk, the Chinese, the Copt, the Hottentot, said Stephen, all admire a different type of female beauty. That seems to be a maze out of which we cannot escape. I see, however, two ways out. One is this hypothesis: that every physical quality admired by men in women is in direct connexion with the manifold functions of women for the propagation of the species.

Figure 4: Page 40 of "Introducing James Joyce"

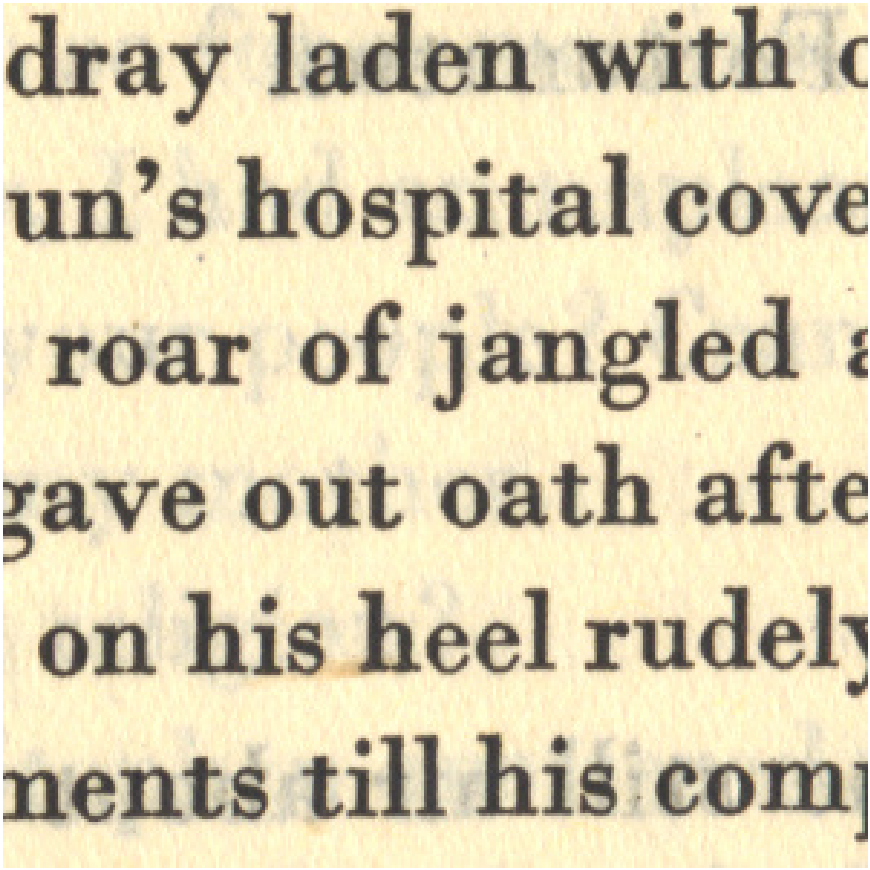


Figure 5: One Inch Square of "Introducing James Joyce"

top of this hill where the ostrich farm owner lived. It was now temporarily unoccupied.

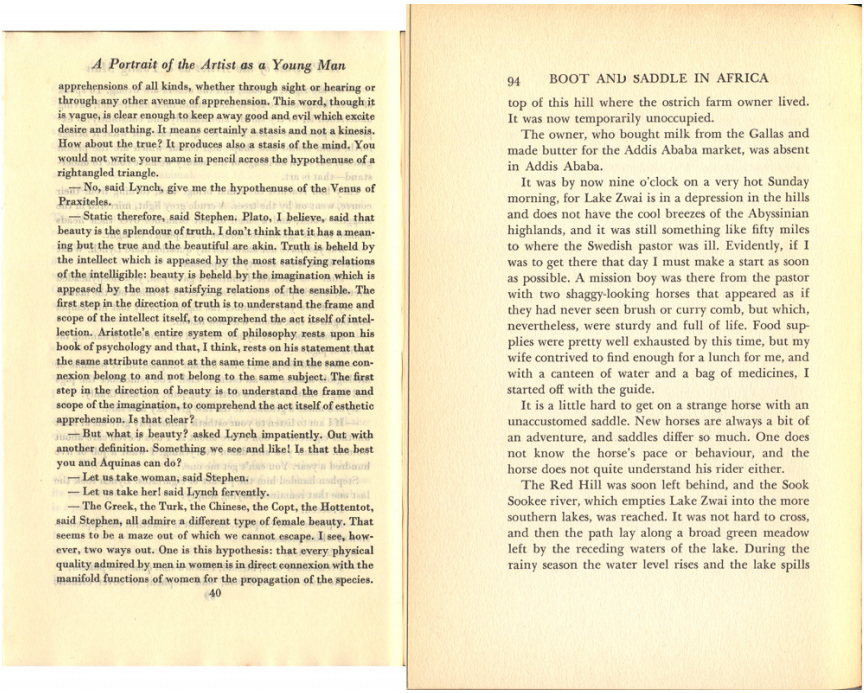
The owner, who bought milk from the Gallas and made butter for the Addis Ababa market, was absent in Addis Ababa.

It was by now nine o'clock on a very hot Sunday morning, for Lake Zwai is in a depression in the hills and does not have the cool breezes of the Abyssinian highlands, and it was still something like fifty miles to where the Swedish pastor was ill. Evidently, if I was to get there that day I must make a start as soon as possible. A mission boy was there from the pastor with two shaggy-looking horses that appeared as if they had never seen brush or curry comb, but which, nevertheless, were sturdy and full of life. Food supplies were pretty well exhausted by this time, but my wife contrived to find enough for a lunch for me, and with a canteen of water and a bag of medicines, I started off with the guide.

It is a little hard to get on a strange horse with an unaccustomed saddle. New horses are always a bit of an adventure, and saddles differ so much. One does not know the horse's pace or behaviour, and the horse does not quite understand his rider either.

The Red Hill was soon left behind, and the Sook Sookee river, which empties Lake Zwai into the more southern lakes, was reached. It was not hard to cross, and then the path lay along a broad green meadow left by the receding waters of the lake. During the rainy season the water level rises and the lake spills

Figure 6: A Page of "Boot and Saddle in Africa"



A Portrait of the Artist as a Young Man

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Figure 7: Pages of "Introducing James Joyce" and "Boot and Saddle in Africa"

gent than their British counterparts. The paper of this volume is heavier (obvious in the image below), and the leading is visibly greater; chapters are started on a new page. By my measurement the type-space takes up only 47% of the page, and so fails the type-to-page requirement. The pages measure 5.5" by 8", placing it in the same category of format as *Introducing James Joyce*—if published under the BPWEA, it should have 10 words per square inch, or 440 words per page. Using the estimatation formula descried in the BPWEA, however, *Boot and Saddle* has an average of 277.2 words per page.

Here are the pages side by side, with scale preserved.

The type-area of *Introducing* is the same size as *Boot and Saddle*,

even though the page itself is much smaller. The type is likewise much smaller.

Computing Paper Use

I was curious whether one could compare the relative amounts of ink per page; a little bit of Python can approximate this. We have images of pages; if we sort the pixels in each vertical column by color, we can compare the total amount of black on one page to another. You could also simply sort the pixels by treating the images as a one dimensional arrays—that is, as just lists of numbers—I found this less helpful because the margins makes it harder to compare the images as a glance.

Here is what the relevant bit of code looks like:

{% highlight python %} # We use the Python Image Library from PIL import Image

Open the image, in PNG format.

image = Image.open('introducing-james-joyce_page90.png')

Load the pixel data from the image into

a list we can manipulate.

pixels = list(image.getdata())

Get the dimensions of the image; Image provides a tuple

(width, height) = image.size

In order to sort by column, we will extract each column

of the image separately and then sort it.

First, loop through each “column” in the image’s width.

for column in range(0, width): # We’ll build a list for just this column. pixelColumn = []

This loop extracts the color values for a column # by adding each pixel, for each “row” within the # current colum to a list. for pixel in range(0, height): pixelColumn.append(pixels[x*width+column])

Now we sort the list we just generated. # The “sorting” I leave to a built-in Python function. pixelColumn = sorted(pixelColumn,reverse=True)

Now our data is sorted, but its in a list, divorced # from the rest of the image. We need to load it back # into the image itself; we use the same loop as before # but moving the now re-ordereddata in the opposite # direction. for pixel in range(0, height): pixels[x*width+column] = pixelColumn[pixel]

And push that altered data back to the Image object,

which we can now show() or save().

image.putdata(pixels)

{% endhighlight %}

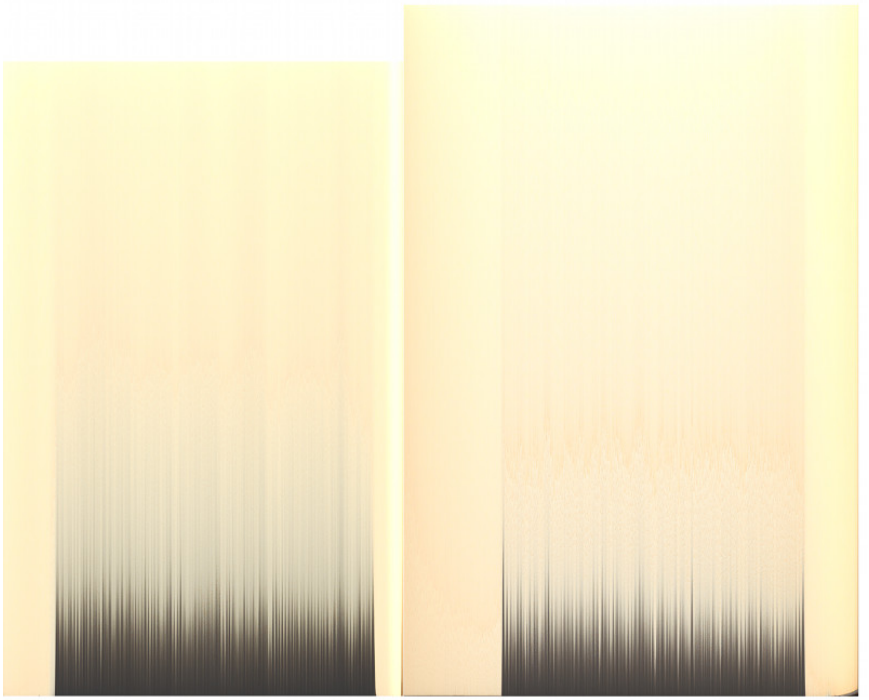

Figure 8: “Introducing James Joyce” and “Boot and Saddle” pages, with Columns sorted of Pixels Sorted by Color

You can see this code, modified to take a command line argument, at github. (You’ll need Python and the Python Image Library installed to run it though.)

Here are the output images for the page of *Introducing James Joyce* and *Boot and Saddle*:

One could boil this down further to a single number using some sort of “average” to try to measure how much of a page is occupied by ink. For instance, using a function described on this StackOverflow thread, the page of *Introducing James Joyce* has a brightness average of 219.938548387, while *Boot and Saddle* is 225.179950898 Those values, I assume, are out of 255—where 0 is completely black

and 255 is completely white.; that greater level of brightness represents the less crowded (or less efficiently used) page. Though the difference in number seems rather slight and certainly doesn't capture the difference in paper use the way the average words per page statistic does.

This is an an odd, and not entirely successful, way of looking at this data; the (admittedly unpleasant to perform) calculationsThe numbing image of some poor clerk or assistant counting blocks of ten lines all day…) the BPWEA recommends better capture the amount of linguistic information compressed into physical space; though the analyses of the brightness of the images do have the advantage of registering something that the typographical standards of the BPWEA calculations do not: the effect of the print bleeding through the thin paper, visible, for instance, in the middle-gray tones in the sorted *Introducing* image.

Book Formats and Reading

Of course, looking at these images, one realizes that book format and expectations have changed quite a bit; while *Introducing James Joyce*, seems cramped on the page, and the paper is clearly *too* thin, it is still far more recognizable than *Boot and Saddle* which feels like a brick beside it—its heft and liberal use of whitespace are actually relatively alien to a reader used to the formats of genre novels, Bantam paperbacks, and Norton Critical Editions. The Penguin paperback format (which, in my estimation, *Introducing* is far closer to than the older format of *Boot and Saddle*) emerged just prior to the period of these restrictions and so is certainly *not* a product of the war. One might hazard, however, that the requirements of the BPWEA helped cement certain expectations for our experience of the page. While, as Rose, contends, these standards produced some ugly books, they also may have improved book design overall. Holman notes, "Although books published in the Second World War are more often remembered for their typographical severity than

for their visual richness, it was a period in which the need to convey information swiftly and succinctly placed a premium on good design" (112).

And indeed, Brandt suggests a very specific salutary effect of the US's own (more limited) paper rationing: Brandt's essay is a sort of ranty screed about how the United States is "culturally" "one of the backward nations of the world" (88), but I'll take his observations on book formats.

> Publishers took as a first step, and a most desirable one, the making of **thinner books**. During the lush twenties publishers adopted the British practice of bulking books, on the theory that bookstore customers would feel that they were getting more for their money if the bulk were greater. The customer naturally was confused by seeing two books at the same price, one twice the thickness of the other; and, unless he were truly discriminating, he tended to buy the bulkier. The bulked book created a real space problem for libraries as well as for the individual collectors. Under weight restrictions, publishers had to yield to the use of lighter papers, with the result that the buyer who was accumulating a library could afford, on a space basis, to buy more books. (102)

(I wish I knew more about the extent to which "bulky books" were a "British practice," and what that history is.) Whether or not space was really the premium Brandt suggests, it does seem plausible that the restrictions of the BPWEA (and the milder American I, of course, have said nothing about continental book publishing, or publishing elsewhere in the British colonies, or in Japan, or North Africa, or the Middle East—all of which was, no doubt, affected. It is worth noting that because of the costs under the BPWEA, some British publishers moved their printing to India. regime) did affect our own present expectations for print formats.

Notes

- 1—"The stress of World War II actually increased demand for books, out of a need for distraction, for understanding the world situation, or for somethign to do during long blackouts. In Halifax, public library loans jumped from 716,000 in 1938 to just over a million in 1945… In February 1940, 62 percent of adults were reading a book, falling to 51 percent in 1941 and 45 percent in 1946-7" (Rose 350-51). I'm not entirely sure what that figure about adults "reading a book" means.

- 2—In part the paper shortage was a function of the fact that most of the paper used in British printing used esparto grass, imported from North Africa, then under French colonial control.

- 3—The early years of the war are described by Joseph Brandt as a boom-time for American book publishers. "Publishers have never before enjoyed either such extraordinary prosperity or such extraorindary difficulties in producing books… Book sales had increased in 1943 form 20 to 30 percent over 1942, even though questions of paper rationing and manufacturing were assuming ever more serious proportions" (101). The chief effects Brandt describes are an attempt to save paper by reducing paper weight. "The War Production Board… issued a curtailed order for the book-publishing industry, which in 1944 was increased. Publishers were permitted to use only 75 per cent of the weight of paper they had used in 1942" (101-102). This is a less drastic reduction and one that applies only to paper weight used in the interest of reducing overall; it does not seem to be put an absolute cap on paper usage, nor does Brandt mention any specifically typographical requirements.

- 4—One rather perverse effect of this accounting is that a publisher who happened to have an especially good year in 1938-39 continued to reap the benefit of that expanded ration

throughout the war yers and beyond. One such publisher was Hutchinson, who had a best-seller with Hitler's *Mein Kampf* that year (see Holman 12, 252-254).

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