Episode Book

EPISODE #6529

How Typesetting Shifted From Metal to Software

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SYNOPSIS

For over five centuries, typesetting was a specialized manual craft defined by physical lead sorts, meticulous redistribution, and later, towering line-casting machines like the Linotype. But the arrival of PostScript, Aldus PageMaker, and digital fonts collapsed thousands of trade shops in just a decade. The trade's disappearance reveals what happens when a protected mechanical skill dissolves into consumer software, scattering editorial layout, kerning choices, and visual judgment among designers, authors, and everyday computer users.

TRANSCRIPT



Corn

Every page you've ever read was arranged by a person, and I'd put money on you never once thinking about who. Daniel's follow-up to our typography episode goes straight at that — the history of typesetting as a trade, from movable type through desktop publishing, what happened to the people who did it, and who does it now. And underneath all of it, his real question: what is the creative work that sits between writing something and presenting it, and how much does it change what we actually receive?



Herman

Which is a better question than it looks, because the honest answer is that the craft spent five hundred years trying not to be noticed. That's not a metaphor — it's the founding aesthetic of the profession. Beatrice Warde gave a lecture in nineteen thirty, the Crystal Goblet, where she said type well used is invisible as type, just as the perfect talking voice is the unnoticed vehicle for the transmission of words and ideas. Beautiful line. Economically it's a suicide note.



Corn

A trade whose success condition is that nobody notices it has a hard time at contract renewal.



Herman

Nobody ever called the typesetter into the office to be thanked for a paragraph they sailed through. The complaints all came the other way. So when the tools finally arrived that let everyone else do the job, there was no constituency to defend it.



Corn

Daniel's framing is the arc — movable type, mechanization, phototypesetting, the desktop publishing rupture, and then the afterlife. I want to start where the physical work was, because I think you can't feel the loss unless you know what the job actually felt like in the hands.



Herman

Then start with the case. Not the courtroom — the wooden tray with the compartments. A compositor worked from a case full of sorts, which are individual pieces of metal type, each one carrying one letter, cast backwards so it prints the right way round. You picked sorts out with your right hand and set them left to right into a composing stick held in your left — and remember, you're looking at everything upside down and mirrored, because the type is backwards.



Corn

Reading mirrored, upside-down text, all day, at speed.



Herman

Fluently. That was the baseline skill, not the impressive one. And there's a lovely reputed relic of it — a lower-case q, mirrored, looks like a d, and a b looks like a p. Mind your p's and q's is, on one telling, literally shop-floor advice. Don't grab the wrong sort.



Corn

I always assumed that was about manners in a pub.



Herman

So did everyone, which is why the etymology survives on folk charm alone. But it fits the actual work, because the physical world of the case was full of near-doubles. And changing font size? There was no dropdown. You physically swapped the sorts in the case for a different size of metal. A size change was a furniture-moving operation.



Corn

Then the really forgotten part, I think, is what happened after printing. Everyone imagines the compositor setting the page. Nobody imagines him taking it apart again.



Herman

The most expensive thing in the shop was the type itself, so after the printing was done you cleaned the forms with solvent and redistributed every sort back into its compartment in the case. The trade called it sorting, or dissing. And if you were sloppy — if a p went into the b compartment — you didn't find out today. You found out weeks later, when somebody else's job came out with a wrong letter in the middle of a page, and there was no undo.



Corn

Your typo has a dormancy period.



Herman

It has a delay fuse, yes. I find that beautiful as a picture of the work — the error travels forward in time and lands on a different person. Modern typesetting errors are at least immediate. You see the river running through your justified text while you're still looking at it.



Corn

Rivers — you're getting ahead. Hold that for the design section, because I want to hear you say "socks on a clothesline" with the enthusiasm it deserves.



Herman

Noted, and I will deliver. But first the machines, because the machines are where the trade starts its long contraction. Ottmar Mergenthaler's Linotype, patented in the eighteen eighties. It's a line-casting machine — the operator types on a ninety-character keyboard, the machine assembles brass matrices, which are molds of the letterforms, into a line, and then casts the entire line as one solid piece of metal, a slug, from molten type metal.



Corn

Molten metal, at typing speed.



Herman

At three to five times hand-composition speed, which is the number that changed everything. A multi-page daily newspaper suddenly needed a manageable number of operators — small towns could have a real paper. And the matrices were reusable; the machine distributed them back up into the magazine automatically. The Linotype was called the eighth wonder of the world by some at the time, and honestly, watching a keyboard produce solid lead slugs, I get it.



Corn

The Monotype split the job differently, didn't it.



Herman

Monotype separated the thinking from the casting — the keyboard punched a paper tape, and the tape drove a separate casting machine. Which sounds like a detail and is actually a whole philosophy: you could correct at the tape stage, recast just the bad lines. Ludlow was the third way, hand-set matrices but otherwise hot metal. By the early twentieth century these systems were near-universal in big newspapers and publishing houses.



Corn

And then the metal itself disappears. Cold type.



Herman

Phototypesetting, from the early sixties. Fonts became spinning glass or film disks, one per typeface, flashing characters in front of a light source onto photosensitive paper. No metal at all. And the early machines were astonishingly primitive by our standards — there's a Fairchild system where the typesetter typed a line on a keyboard with no display. No screen. Nothing to look at. Then typed the same line a second time to verify it, and if the two matched, a bell rang and the machine punched the paper tape.



Corn

A bell. The verification protocol for the entire visual output of the document is a bell.



Herman

If it rang, the line was presumed right, twice-typed agreeing being the safety check. Then the machine spat out a galley — black type on photo paper — which human beings cut up with blades and pasted onto a mechanical board with hot wax, to be shot as film and made into offset plates. And then CRT machines came along, fonts on magnetic disk, then laser imagesetters like the Monotype Lasercomp, and each step the operator gets further from the physical letter and closer to a screen.



Corn

And the logic itself becomes software. TeX.



Herman

Nineteen seventy-eight, Donald Knuth, and I love his two stated goals because they're so uncompromising: to let anybody produce high-quality books with minimal effort, and to give exactly the same results on all computers, at any point in time. Reproducibility as a first principle. LaTeX followed in the early eighties through Leslie Lamport, and LaTeX2e in ninety-four — and that's the hinge for the whole episode, because from here the typesetting decisions live in code. The judgment becomes a document that runs.



Corn

Which sets up the rupture perfectly, because the code layer arriving and the trade dying are the same event viewed from two sides. Nineteen eighty-five.



Herman

Frank Romano's account of this is the best there is — he was there. At peak there were about four thousand trade typesetting firms across North America. Four thousand companies whose entire business was setting type for printers, publishers, ad agencies. Over a hundred and fifty thousand typesetting machines sold between nineteen fifty and ninety-five. And the nineteen eighty-four Macintosh on its own, Romano says, was just an interesting typographic tool. It took the nineteen eighty-five stack — the Linotype type library licensed in, Adobe's PostScript, PageMaker, the three hundred dpi LaserWriter for proofing and the twelve hundred dpi Linotron imagesetter for final output — to change the typographic world.



Corn

So the service bureau is born, designers can proof on a laser printer and send a disk out for high-res output, and—



Herman

And Romano's next sentence is the brutal one. Pretty soon graphic designers were composing pages with type themselves, selecting fonts and sizes, and without realizing it, bypassing the typesetting services. And then — direct quote — the same designers who attacked proofs with a plethora of changes suddenly lowered their standards.



Corn

The clients who tortured the typesetters became their own mediocre typesetters overnight.



Herman

From eighty-five to ninety-five the number of typesetting services declined until only a few remained, and those few specialized in XML encoding and proofreading. The survivors are the ones who became something else.



Corn

Romano's era arithmetic, though — I know you've been waiting to do this aloud since you read it. Go on.



Herman

It's a countdown. Handset typesetting began in fourteen forty and ended in nineteen seventy — five hundred and thirty years, and still practiced in artisanal quarters. Machine typesetting, eighteen eighty-six to nineteen seventy-six — ninety years, barely in practice. Phototypesetting, nineteen fifty to about nineteen ninety — forty years, totally gone. Laser imagesetting, nineteen seventy-eight to two thousand eight — thirty years, replaced by direct-to-plate.



Corn

Each container lasts a fraction of the one before it.



Herman

And his verdict on the whole thing: typesetting did not go away; it just moved to a different place. Which is exactly the counter to the obituary version of this story. The Last Typesetter essay — the framing Daniel's prompt is really pointing at — puts it sharply: in nineteen eighty-three typesetting was a career. Union-protected, multi-year apprenticeship. Then PageMaker shipped, and overnight the craft became artisan, and there was no math that would ever make it make business-sense again. But the higher-order skill, the vision of how a page's message is rendered, did not become irrelevant. Just the hot lead part did.



Corn

And when everyone could set type, the difference between good and bad typography went from an industry concern to—



Herman

A public epidemic. Bad kerning everywhere. Rivers running through justified text. Orphaned words dangling at the tops of columns like socks left on a clothesline. I delivered that as promised.



Corn

You did. Slightly too pleased about it. But there's a real fight buried in there, because Romano says the designers lowered their standards and quality collapsed into software, and the essay says the experts became more necessary than ever, just not as typesetters. Both agree the floor dropped out. They disagree about whether the skill recovered its standing.



Herman

And the essay's resolution is the migration thesis — the craft knowledge went three directions. Designers absorbed it. Journalists absorbed some of it. Authors, suddenly setting their own manuscripts in their living rooms, absorbed the rest. And the full-time typesetter dissolved. Not overnight, over about a decade, but completely. It draws on Richard Sennett's Craftsman for the distinction: the difference between a skill and the



Herman (continued)

institutional container built around that skill. Containers look permanent until they are not. The skill outlives every container it has ever occupied.



Corn

It's the same shape as what we talked about with voice dictation, when transcription went from a specialist trade to something everyone carries in a pocket — the work didn't vanish, it diffused. You were more optimistic about that one than I was.



Herman

I was, and I still am, but here I think the diffusion has a sharper edge, because of where the judgment went. Look at who does the work now. The role fragmented into book designers, production editors, production artists — HarperCollins has designers responsible for all stages of interior book design from manuscript to bound books. Simon and Schuster's associate production editors in children's publishing manage forty-five to sixty titles a year each.



Corn

Sixty titles. One person. A compositor in nineteen fifty would have handled a fraction of that volume — slowly, in metal, with a bell to tell him he'd typed a line correctly.



Herman

And the listing that tells you the most is the plainest one: Red Line Editorial's production artist, and the job is book production using established templates and styles. That's the structural change in one sentence. Most modern typesetting is systems work — templates, style sheets, master pages. The craft decisions were made once, by someone, in a template, and then executed hundreds of times by someone cheaper.



Corn

The template is the new typesetter. And it's a typesetter who made all its decisions before you were hired.



Herman

Before the manuscript existed, sometimes. Which is why the pay looks the way it does. Boydell and Brewer were advertising an assistant production editor at twenty-two thousand seven hundred fifty pounds, full training provided. Red Line's production artist sits in the upper thirties in dollars. The craft that commanded a union-protected apprenticeship now sits at the bottom of the publishing salary ladder — and the concentration means the person deciding what books feel like is deciding it for a hundred books at once, invisibly, in advance.



Corn

I want to name the corporate afterlife too, because it's almost too neat. Mergenthaler's machine company — through Linotype-Hell, Heidelberg, Monotype — and in August twenty twenty-three Monotype discontinued Linotype dot com, effectively closing the business that began with the eighteen eighty-six machine.



Herman

A hundred and thirty-seven years after the slug, the URL was the last thing left.



Corn

Which is roughly the shape of the trade before everything changed.



Hilbert

Hilbert's Anteater Trivia. Tamanduas can release a pungent secretion from glands near their rear when threatened. I have sat through many contract renewals, and I understand the impulse.



Corn

I'd keep that one away from the anteaters, for the record. Anyway — the migration story leaves Daniel's other question open, and it's the one I actually care about most. If the skill migrated, what does the skill consist of? What makes a page easier to read? Because the short answer starts with something uncomfortable.



Herman

The authorities don't agree. On almost any of it. Take line length — the measure, in the trade. Robert Bringhurst, whose Elements of Typographic Style is the closest thing the field has to scripture, says forty-five to seventy-five characters is satisfactory, sixty-six is ideal, forty to fifty for multi-column work. Emil Ruder, the Swiss typographer, said fifty to sixty. The WCAG accessibility guideline says eighty or fewer. And a two thousand five literature review in Visible Language said don't exceed about seventy. Four authorities, four numbers.



Corn

Sixty-six ideal, eighty fine, fifty-six, seventy. That's not a consensus, that's a weather forecast.



Herman

And I think that spread is the most important thing in the whole design discussion, because it tells you this was never a formula. It was judgment — judgment about the typeface in play, the leading, the reader, the material. Bringhurst will happily tell you that in a well-set bibliography, lines of eighty-five or ninety characters pose no problem, because the reading is discontinuous. The number bends to the use.



Corn

So when somebody tells you they've found the scientifically correct line length...



Herman

They've found a preference study. That's the honest caveat in all of this: the research that exists on line length — and it goes back over a century — is overwhelmingly about reading speed and preference. I can't point you to a peer-reviewed study that ties a specific typographic treatment to a measurable gain in comprehension. The people who claim typography demonstrably improves comprehension are outrunning the evidence.



Corn

Which is a strange footing for a craft to stand on. Five hundred years of accumulated judgment, defended by everyone who practices it, and the measurement layer is speed and liking.



Herman

It's not nothing — reading speed and preference and comfort are real outcomes. But the craft's real claim has always been experiential rather than experimental: the reader finishes the page and doesn't know why it went down easy. Which takes us right back to Warde. Her goblet image is that you can serve wine in a crystal goblet or a solid gold cup. The gold cup is the more impressive object. The crystal goblet lets you see the wine. Typography that calls attention to itself, she argued, is failing the text.



Corn

And the dependencies are where the actual skill lives, because nothing is set independently. Measure and leading are coupled — as the line gets wider, the leading has to grow to carry the eye back to the start of the next line — and word space is a third leg on the same stool. Change the measure, and you've signed yourself up to revisit the other two.



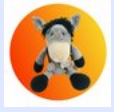
Herman

Cyrus Highsmith's way of putting it, via the Google Fonts knowledge base: consider line height, measure, and word space together. Which is exactly the kind of three-way coupling that a template hard-codes and a compositor used to re-derive per book. That's the concrete difference between the migrated craft and the original — not knowledge lost, but decisions batched.



Corn

So the answer to Daniel's last question — how the work between writing and presenting changes our experience of the same information — is that it changes it constantly, measurably in speed and comfort, invisibly in everything else, and it's currently being decided by whoever built your template. And I'd rather that person existed somewhere.



Herman

The judgment didn't disappear. It got concentrated into fewer, earlier, less visible decisions. Same number of forks in the road, fewer people holding the forks.



Corn

"Setting type by hand" — you keep saying that like the stick was simple. It wasn't.



Herman

You have an opinion about the composing stick?



Hilbert

"Stick" is the wrong word, Herman. I've got one on the desk here, left-handed, brass adjustable. The measure on it — that's the whole argument you two have been circling for half an hour. You set the screw to a line length, and after that every single line has to justify to that measure. Every one. You get to the end of a line short, you add spaces. You're over, you pull a space out or break a word. That screw is doing what your template does, except a man could turn it back. Nobody's turning anything now.



Corn

He's been holding that screw metaphor since the first segment.



Hilbert

It's not a metaphor, Corn, it's a screw. And I'll tell you what else. Your p's and q's story is folk etymology and I'm tired of hearing it. It comes from the alehouse chalkboards — publicans tallying the pints and quarts. I know the printing story is cuter. The printing story is always cuter. I mentioned that to my neighbour, Yoram, when he was in here about the noise, and he thought the composing stick was a phone accessory. He'd held it. There's no helping some people.



Herman

The pints and quarts version is real, though contested — you know that's as unsourced as ours.



Hilbert

Mine has the better smell of beer, which is how you spot the true one. I never set a line of type in my life with it. It holds down the galleys on the left corner of the desk, and it stays there. It's the only thing I own that shows anyone what the invisible work looked like. People pick it up and their hands go quiet. That's worth more than the setting.



Corn

The corner it stays on — is there a wrong corner?



Hilbert

Obviously. Left. It's a left-handed stick, this is a left-handed desk. A man at the union hall gave me forty shekels for a second one once and I let him, which I regret.



Herman

Yoram held a composing stick and thought it was a phone accessory. That's the Last Typesetter essay's whole epidemic in one man.



Hilbert

Yoram is a good neighbour and a terrible typographer. The stick cost me thirty at a clearance in the old print district. Everything about that business ends in a clearance.



Corn

Fair, and I'll even take the pints and quarts origin under advisement. Though you've got to admit, for a man who never set a line of type, you're very certain about the screw.



Hilbert

I'm certain about what I own. The rest of you are certain about everything else. That's how we got here.



Herman

He's got the corner of it. Pun resisted, and it took effort.



Corn

Barely. Where were we — the misconception, before we wrap. Mine's the obvious one, and it's the one the whole obituary framing rests on: that typesetting died with desktop publishing.



Herman

It didn't die — the role dissolved and the skill migrated into designers, production editors, and templates. More typesetting happens in a day now than happened in a year in nineteen eighty-three; there's just no full-time dedicated person called a typesetter attached to it.



Corn

The font was the physical thing — the case of sorts, the size, the metal.



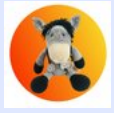
Herman

The typeface is the design; the font was the container it shipped in. Even the vocabulary preserves the migration. And on the evidence question, the misconception worth killing is that good typography is proven to boost comprehension — the defensible claims are speed, comfort, and preference. The comprehension case is a craftsman's conviction, not a finding.



Corn

Which leaves the open question I'd send everyone home with. If the skill outlives every container it's ever occupied — hand, machine, film, laser, software — then the real question isn't where it went. It's what container it's in now, and what happens when the container is a template that nobody's allowed to turn back. Romano's own closing line was that we cannot assume any industry or technology will last forever — he said it about his trade, and I'd say it about the thing that replaced his trade too.



Herman

Somewhere, someone is deciding what every book next year feels like, in a style sheet, years before the manuscripts arrive. I'd like that person to know they're a compositor. Herman Poppleberry, signing off for myself and Corn.



Corn

Producer credit to Hilbert Flumingtop at the desk — left corner. If you want more of this, try episode ten, How ASR Went From Frustration To ... Whisper Magic; episode nineteen, AI Images; and episode twelve, The AI Breakthrough. This has been My Weird Prompts. If the show's earned it, leave us a review wherever you listen; it helps people find us.



Herman

You can find the archive at my weird prompts dot com. We'll see you tomorrow.

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