Episode Book

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Why Easy-to-Read Fonts Must Break Harmony

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SYNOPSIS

Visual harmony makes modern typefaces look beautiful, but uniformity causes letters to blur together for low-vision readers. Exploring the creation of Atkinson Hyperlegible by Applied Design Works for the Braille Institute, this discussion unravels the critical difference between legibility and readability. It examines why deliberately inconsistent letterforms succeed for low acuity, how kerning masks those quirks, and what research reveals about why dedicated dyslexia fonts fail to produce measurable reading improvements.

TRANSCRIPT



Corn

Nineteen twenty-seven. That's the year the Braille Institute was founded by a man who lost his sight at twenty-three — and ninety-two years later, that same institution would commission a typeface that Claude now hands people when they ask for something easy to read.



Herman

Which is a sentence I did not expect to be saying about fonts today, and yet here we are.



Corn

Daniel's prompt this week. He asked Claude to change the font in his recording app — the one he uses for ASR fine-tune sentences — and he said, in his words, "whatever is going to be the easiest to read." Claude went with Atkinson Hyperlegible. Daniel thinks it's a beautiful font. But he's poking at something underneath that: is his "beautiful and easy to read" the same as anybody else's, and what actually distinguishes a font built for readability from one that's just pretty?



Herman

And the answer starts with a distinction almost nobody makes, including people who talk about fonts constantly — legibility versus readability. Legibility is a property of the typeface itself: how easily you can tell individual characters apart. X-height, stroke width, serifs, the shapes of the letters. Readability is about how the type is set — size, line spacing, contrast, line length — and, this is the part I like, Google's own glossary says readability also depends on the reader: your visual acuity, disabilities, health factors, even what the text says.



Corn

So a font can't actually be built for readability. It can be built for legibility, and then somebody has to set it.



Herman

That's the reframe, yes. A font "built for readability" is really built to maximize per-character distinctiveness, and it's trusting the typesetter for everything else. Which is exactly what Atkinson Hyperlegible did. It was commissioned in twenty nineteen for the Braille Institute's centennial, designed by a studio called Applied Design Works — two designers, Elliott Scott and Craig Dobie — and named after the founder, J. Robert Atkinson. It won a Fast Company Innovation by Design Award, and in twenty twenty-four it went into the Cooper Hewitt's permanent collection. The Smithsonian keeps a font the way they keep chairs.



Corn

Museum-grade reading.



Herman

But here's the tension the whole episode turns on. The font is legible because it deliberately violates the design principle that makes typefaces beautiful. Elliott Scott put it exactly: "embedded at the core of traditional type design is visual harmony." Regularity of shape is what we perceive as harmony. And that sits in direct conflict with one of the main problems for people with low vision, which is telling each letter apart.



Corn

So the pretty fonts are pretty because they're uniform, and uniform is the enemy.



Herman

For a low-vision reader, yes. Scott again: "The problem is that modernist typefaces often sacrifice legibility because their characters are usually quite uniform." Helvetica is the textbook case. Max Kohler has a nice rundown of it — Helvetica has the classic lowercase L, uppercase I, the numeral one, and the exclamation point, all nearly identical. C, G, O, zero, and Q are a cluster. B and eight. And the lowercase b, d, o, p, q.



Corn

A whole serif of identical twins.



Herman

So Atkinson — Kohler's line is that "Atkinson trades some consistency between letterforms for better letter differentiation." The Braille Institute lists six design principles on its page: unambiguous letterforms, clear uprights for the one, capital I, lowercase i and l, distinct pairs like E versus F and p versus q, open counters, spurs and tails, and then what they call "special circles" that reflect the Institute's braille heritage.



Corn

The circles are the sentimental touch.



Herman

A little. But the concrete decisions are where it gets fun. They added serifs to the uppercase I — but not to the T. And the uppercase E got a significantly longer middle bar than the F. Normally you'd want those two letters to rhyme; that's how type families work. Here they went the other way on purpose, so the E and the F can't collapse into each other for someone with blurred vision.



Corn

I'd been reading that font for a year before I noticed the E. Which I suppose is either a compliment or a diagnosis.



Herman

It's the compliment. Mark Wilson wrote the piece on it in Fast Company, and he nailed the paradox: "stare too long at its quirks, and Atkinson Hyperlegible almost feels like it has an identity crisis, as if a dozen fonts were smashed together to make one. But typed out on a page, it's been treated with careful kerning that the average eye just kind of accepts."



Corn

Kerning is doing the apology tour for every broken rule.



Herman

That's the aesthetic recovery, exactly. The letterforms are inconsistent by design, and the spacing between them smooths it over so your eye doesn't trip. Legible because it's inconsistent, acceptable because of the spacing.



Corn

And how did they test it? Beyond the designers squinting.



Herman

They built a prototype with, in their words, "every legibility trick we knew of," and the Braille Institute tested it with low-vision participants — students and clinicians — using reading-speed and retention tests. Characters got tweaked, rethought, even flipped during development and a public preview. The designers wore glasses that simulated conditions like macular degeneration. Kohler makes the point that the only strictly mathematical part was colour contrast ratios — everything else was visual judgment, informed by the testing.



Corn

A font developed by wearing other people's eyes.



Herman

There's a detail in the provenance too. Applied Design Works started by looking for an existing typeface they could just adopt. They experimented with Times New Roman and Frutiger first, and concluded that the homoglyph confusion was baked in — any font optimized for uniformity has the problem by construction. And the reason the Institute needed it at all: most of their students are not fully blind and don't read braille. The font serves the low-vision majority, not the population people assume when they hear "Braille Institute."



Corn

Which answers Daniel's question about why Claude picked it, in a way. He asked for easiest to read, and Claude reached for the font whose entire thesis is character differentiation.



Herman

A mechanism-based answer, not a taste-based one. The model didn't say "this is pretty" — it said "this is engineered so letters don't collapse into each other." Which happens to converge with the expert consensus. And then there's the irony: people online keep praising it for being pleasing. There was a comment this year from someone who said they'd been "obsessed" with it and weren't sure why, it was "just so pleasing."



Corn

The font built to stop caring about beauty, collecting compliments for its beauty.



Herman

It is funny.



Herman

Okay, second half. The harder question — how much of "easy to read" is universal versus personal?



Corn

My guess before you tell me: more universal than people think. The eye is the eye.



Herman

Largely right. There was a nineteen ninety-four study out of the New England College of Optometry that found letter and line spacing, contrast, color, and type style matter more than point size. Horizontal compression hurts you more than losing vertical height does. Black on white was easiest across every age from nineteen to eighty-one. Those aren't preferences — they're shared perceptual facts about the human eye.



Corn

So the typesetter is carrying more of the load than the font.



Herman

Often, yes. On the typeface side, what helps at distance and low acuity is fairly settled: wide letter shapes, open inner counters, a large x-height, generous spacing, weight that's neither too heavy nor too light. Serif versus sans, though — basically a wash. There's a study that varied only the serif size, at zero, five, and ten percent of cap height, and the five percent serifs were slightly more legible at acuity thresholds, probably because serifs add a bit of inter-letter space. But reading speed showed no effect of serifs at all.



Corn

Every argument I've ever overheard about serifs, settled by nobody.



Herman

Settled into a shrug, yes. The concrete font-versus-font number I'd offer: an eye-tracking study with forty-eight participants, average age about twenty-five, reading off LCD displays, found Verdana read faster than Georgia — about nineteen point six characters per second versus eighteen point one. The attribution was Verdana's larger x-height, wider characters, and uniform stroke width. And reading speed went up with font size, no surprise.



Corn

One and a half characters a second. Over a page, that's real time.



Herman

It adds up. Now the part where preference and performance split, which is the most useful thing in this whole literature. In the Dyslexie font studies — Dyslexie being one of the big "fonts for dyslexia" — participants preferred Arial and Times New Roman over Dyslexie, and performed identically, and preference was not related to reading performance at all.



Corn

So "I like this font" and "this font helps me" are different measurements that sound identical at dinner.



Herman

Different instruments, yes. And that sets up the big turn in the evidence, which I want to get right. "Designed for a specific population" is a claim, not a guarantee. Low vision has a mechanism — reduced acuity and contrast sensitivity make similar shapes collapse, so character differentiation directly targets the deficit — plus iterative testing with the actual population and a published design rationale. Dyslexia fonts mostly have marketing.



Corn

That's a strong split. What's the actual evidence on the dyslexia side?



Herman

Bleak. A meta-analysis of fifteen studies, ninety-one effect sizes, six hundred and eighty-eight readers total, found no consistent effect on reading speed or accuracy — a pooled effect of essentially zero. A systematic review of twelve studies reached the same conclusion and flagged small samples. One single-subject study with elementary students found OpenDyslexic produced no improvement over Arial and Times New Roman, with some negative effects. The Dyslexie paper's own conclusion was that the font "neither benefits nor impedes the reading process of children with and without dyslexia."



Corn

Neither benefits nor impedes. A font that commutes.



Herman

There is one dissent, to be fair — an eye-tracking study in the Annals of Eye Science reported OpenDyslexic did improve reading comprehension in adults, especially dyslexic adults, without changing reading speed. One study against a -analysis. Not settled, but the weight sits clearly on the no-effect side.



Corn

And it makes sense as a mechanism question. Low vision is a problem of the eye. Dyslexia isn't.



Herman

That's my clinician's read, yes. Dyslexia is not primarily a visual discrimination problem — it's phonological, about processing speech sounds and mapping them to symbols. A font can't reach that. Whereas macular degeneration blurs letterforms together, and differentiating them helps. The design intervention has to target the actual deficit.



Corn

Which is why Daniel's instinct was sound — there's enough commonality that organizations can design for populations. But only when the population shares the deficit the font addresses.



Herman

Corn, let me ask you something, because you're the one in this flat who reads more than anyone. Have you ever actually picked a font for yourself? I don't mean our theme. For your own reading.



Corn

I let the app decide and complain about it privately. Which is, I now realize, the entire typography industry's business model.



Herman

That's the invisibility problem. Fast Company's line about Atkinson was that it "hides a secret in plain sight. And that's the point." Good typography is designed to be invisible — you only see it when it fails. There were people online describing the pencil-thin fonts of the mid twenty-tens, saying they had to use reader view just to get through a page. One person said of Atkinson, "I read much faster and strain much less when I use it." And the Institute has a testimonial from someone who set it as their browser default and said they could finally browse the web "without getting a migraine every thirty minutes."



Corn

Fonts get noticed the way plumbing does.



Herman

But here's the counterweight — even invisible, fonts carry semantic load. There's a review of thirty-four studies covering over two hundred qualities and more than six hundred typefaces, supporting typeface-driven perceptions of trustworthiness. A banking-website experiment found trust scores highest for serif and sans serif — around six on their scale — with monospace at about three and script at under two.



Corn

No bank has ever been robbed by a ransom note set in Garamond.



Herman

Script fonts scream birthday invitation, not savings account. And a twenty seventeen study found something subtler: typeface shape didn't change whether readers judged a message trustworthy, but it did change their confidence in that judgment. The font makes you surer of yourself without changing your mind.



Corn

Confidence, supplied separately from content. There's a business model there too.



Herman

One more thing worth landing, because it's current. February of last year, the Braille Institute released Atkinson Hyperlegible Next. The original had four styles and diacritics for twenty-seven languages. Next has seven weights with matching italics, a variable weight axis, support for over a hundred and fifty languages, and a Monospace cut for coders. Munich put it on their U-Bahn platform displays last summer. It's been free under the open font license since twenty twenty-one.



Corn

A hundred and fifty languages of deliberately ugly E's. That's the centennial gift that kept going.



Hilbert

Medieval Pottage Facts. Barbara Hanawalt, in coroners' rolls, found women most often died in accidents at home, by the hearth or at the well, while men died in the fields. The hearth kept its own accounts.



Herman

The coroners' rolls — that's real. That's the same record type Hilbert brought up months ago, and historians really do use them that way.



Corn

Household hazards, ranked by century.



Herman

Getting back to fonts, and to Daniel's actual situation. His instinct that "beautiful and easy to read" might not be universal — the evidence says he's half right. The perceptual layer is more universal than people expect. Spacing, contrast, x-height, character differentiation — those work on everyone's visual system roughly the same way. The aesthetic layer is where the variance lives.



Corn

Which is why the Dyslexie studies are the cautionary tale in the other direction too. People preferred the plain fonts. Preference tracked nothing.



Herman

Right — so when Daniel says he finds Atkinson beautiful, that's a real fact about Daniel, and it's a separate fact from whether it helps him read. The pleasant coincidence is that in this case the font he likes is also the one with the mechanism behind it.



Hilbert

Atkinson Hyperlegible Next, ExtraLight weight. Fourteen files, free license.



Corn

Hm.



Hilbert

I've been setting something in it, Herman, and I'll tell you what nobody at the Braille Institute will. The ExtraLight is unusable below about fourteen point. Falls apart. Which tells you the whole family is calibrated around the Regular and everything else is decoration. The six principles on their website get all the attention — the circles, the braille heritage — the circles are the most over-discussed detail in the font. What matters is the tail on the lowercase g. Longer tail, more differentiation, that's the whole trick.



Herman

The ExtraLight complaint is fair, actually. Contrast sensitivity drops with low vision, and a thin weight is the one thing you'd never prescribe.



Hilbert

Right. There's more. I printed the original specimen sheet when it came out — the four styles, on one page — and it's taped inside the cupboard door over the kettle. When a website claims to use Atkinson, I hold it up against the monitor. Herman, you spent ten minutes today on the word "kerning" and I had to trim two of them in the edit.



Herman

I plead guilty to the kerning.



Hilbert

The thing that bothers me is the update. I've been comparing the twenty nineteen release against Next glyph by glyph, and I'd swear the uppercase E's middle bar got shorter. Herman, your E/F distinction from earlier — the long middle bar was the whole thesis of



Hilbert (continued)

the letter. If they trimmed it for visual harmony across seven weights, that's the uniformity creeping back in the side door. Meanwhile the E bar is in my cupboard, and it's the version I trust.



Corn

You keep the original on paper because you don't trust the download.



Hilbert

The download can change. Paper doesn't.



Corn

The specimen sheet as a control group. I have to admire a man with a reference copy of the alphabet taped near the kettle.



Herman

The glyph-by-glyph comparison, though — that's exactly the kind of scrutiny nobody funds. And if the bar really did shorten, it would matter for the low-vision reader more than for anyone else, because the E-F collapse is precisely what the font was built to prevent.



Hilbert

Next is still on the Munich trains. Somebody signed off on it.



Herman

The misconception to leave people with, before we close — I hear it constantly: "designed for a specific population" means good design. No. The low-vision case earned the label with a mechanism and testing with the actual population. The dyslexia-font market mostly has a pooled effect size of zero. The label is a claim about the design process, and you have to check whether the process happened.



Corn

And the second one, since we're correcting people: legible and readable are not the same thing. Legibility lives in the typeface. Readability lives in the setting and the reader. A beautiful font set at nine point in grey on grey is a museum piece you can't read.



Herman

And here's the open question I'd leave Daniel with: nobody has published a peer-reviewed trial of Atkinson Hyperlegible's actual effect on reading speed or comprehension against other fonts. The development testing happened, the design rationale is published, the adoption is real — but the strongest numbers in this whole literature are still Verdana versus Georgia. The font Daniel finds beautiful is resting on rationale and reputation, not on a trial.



Corn

Which is a strange place for a font that exists because of testing to end up. The beautiful thing, though, holds either way — it's beautiful partly because it was designed to stop caring about beauty, and the kerning is what saved it. If you've enjoyed the show, a review wherever you listen helps other people find it — and that's a genuine review, set in any font you like.



Herman

Our producer is Hilbert Flumingtop, who keeps the levels honest and the alphabet honest. If you want more of this, try episode ten, How ASR Went From Frustration To … Whisper Magic. This has been My Weird Prompts — the human-AI collaboration podcast.



Corn

Find us at my weird prompts dot com. We'll be back soon.

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