

- A lot of people in this room study how scripts change over time.
 - My day job is studying how sounds change over time.
 - For example, English spelling used to be logical.
- Today I'm going to share with you my epiphany that the science of spoken language
 - can also be a useful way of looking at my lifelong hobby, the art of calligraphy.
- The key is that both spoken and written language originated in highly skilled movement.
 - You've all seen the movements involved in writing,
 - but just in case you haven't seen the movements inside your mouth, here's a video.
 - [SHOW VIDEO: https://www.youtube.com/watch?v=UHlm_6uK7LA]
- So what makes those sounds change over time?
- One source of change is gestural mechanics, meaning that movements tend to change a little over time. (i in livre, 1r line 3)
 - For example, there used to be a diamond at the top and bottom of this 'i', but now there's only a diamond at the top, the diamond at the bottom has combined with the downstroke so that now there's only a tick.
- A second source of sound change is aerodynamics. Of course, (t and v in vertus, 1r line 2)
 - for our purposes today, the big issue is not airflow, but ink flow.
 - So you've dipped your quill and shaken it off properly.
 - What do you do to get the ink flowing? What's the best doodle?
 - It's thin diagonal strokes, going up or down.
 - And I think that's why we see so many letters beginning with that stroke.
 - We see it at the top of this 't', and also on the foot.
 - You can even see it at the beginning of the 'v'.
- And a third source of sound change is perceptual matching. (s in dames, 1r line 1; also add s in Wilhelm)
 - In spoken language, that's when you make a very similar sound using totally different movements.
 - Here, we can see it happening with 's'.
 - In the earlier bookhand, you do it with these movements: 1, 2, 3, 4 and sometimes 5, 6, 7 ...
 - And if you want it to be properly pointy you have to force yourself to do in separate strokes.
 - When you conform to the Gothic aesthetic, this stroke (left vertical) really looks like the spine of the letter.
 - So you can see why people decided that to do it in two strokes like the number 13.
 - The movements are totally different, but it looks sort of similar.
- The underlying principle behind all those changes is that things that happen by accident once in a while
 - eventually become things that you do on purpose every single time.
- And that's why this manuscript is so interesting because the script it's written in is a halfway point.
 - It's called Batarde because it's the bastard child of formal bookhand and very informal cursive.
- I think this particular scribe is taking the accidental effects from cursive,
 - and using very formal techniques to do them on purpose.
- For example, cursive d is made in one stroke: down, up, and swoosh. (3-stroke d in 24r last lines)
 - Because you can make these upstrokes if you're continuing from a downstroke.
 - You can't start with an upstroke, the ink won't flow,

- but if you're writing small - and a lot of cursive is small -
 - you can go upwards once the ink is already flowing.
- So that's cursive. But here, you can see that these two strokes don't quite align at the bottom,
 - so they must be separate strokes.
- And here you can see that the hairline is separately applied.
 - So he's doing the 'd' in three strokes.
 - He could do it in one stroke, but he wants to get it right every single time.
- I think he's also doing his *o* in two strokes. (*o* in *nous*, 72r line 3)
 - I'm basing this not just on the misalignment here, but also on the angularity of the strokes.
- Long downstrokes always have a tendency to be heavy, and that's what we get with 'f' and long 's'. (heavy *s*, in 24r top lines)
 - I'm not 100% sure, but I think he makes this in two strokes, instead of one heavy stroke.
- Those were all cases where things don't quite join up, but sometimes (*r* in *apres*, 1r line 4 - compare *par* just underneath)
 - he takes extra trouble to make things join up.
 - I know that looks like a 'v', but that's an 'r' in 'apres'.
 - You can see from the 'r' in 'par' that it might be closed once in a while,
 - But he's decided to do it on purpose.
 - And we've also seen unnecessary enclosure and alignment in 'd' and 's'.
- And look at the tail of *s* in *soit*. (24r last lines)
 - In cursive that hairline happens when you lift the pen off the paper quickly,
 - but he's doing it by twisting the pen very gradually until he gets that pointy bit,
 - then he takes the corner of the pen and extends the hairline
- Even something as simple as this *u*, I tried to do for months and kept failing
 - until I realised a few days ago that he is doing the hairline with the corner of the nib. (u in *livre*, 1r line 3)
- This is unnecessarily careful work, but look what he gets for it.
 - This beautiful even texture, a whole new aesthetic of pointy enclosures and fluid hairlines.
 - We can see a formal script emerging from the cursive.
- I think this is always how new formal scripts emerge.
 - I'm not saying this just because of Latin palaeography class,
 - this seems to be how Chinese scripts develop as well.
 - They start out as the easy/sloppy way to do the previous script, and then they get formalised.
- So I know why this is interesting from the point of view of calligraphy and linguistics,
 - but I don't know if it's interesting to palaeographers.
- The only thing that occurs to me is that we usually classify scripts as formal or cursive
 - using letter shapes or general aspect.
 - I haven't heard of many people trying to detect formal technique
 - by counting strokes or looking for pen manipulation.
- But I think now that we have digital images,
 - that's also a useful way of looking at how carefully the scribe is working.
- If you can give me any suggestions on how to develop this project further, I would be very grateful.