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2019

Lahey, Stephanie J. “Identifying Offcut Zone Parchment in Medieval Manuscripts”. Manuscripts: From Fragments to Books – From Identification to Interpretation, 68–70. Paris: ManuSciences, 2019. [Proceedings of ManuSciences’19, Franco-German spring school organized by EphéNum – Digital Humanities at École Pratique des Hautes Études, Paris Sciences et Lettres Université; Bundesanstalt für Materialforschung und -prüfung, Berlin; and Centre for the Study of Manuscript Cultures, Universität Hamburg.]

Identifying Offcut Zone Parchment in Medieval Manuscripts

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Keywords: Parchment, Offcuts, Statistical modelling, Linear regression

Parchment, the writing support of most extant early European codices, is made from speciallytreated animal skin via a complex, multi-stage process. In the medieval west, production entailed slaughtering and flaying an animal (typically a domestic ruminant), soaking the hide in a highly alkaline slaked-lime solution, then scraping it over a rounded beam to remove hair and connective tissue. Next, the hide was laced onto a frame, known as a *herse* or *harrow*, for drying under progressive tension while being scraped, planed, and sanded. When acceptably smooth and thin, the newly-created parchment sheet was cut from the herse [1]. Since directional forces during the end stage of production exaggerate the hide’s irregular silhouette, drawing attachment points into jagged prolongations between scooped hollows, the sheet tended to be trimmed by removing strips along the periphery. The purpose was two-fold: trimming whittled the sheet into rectangular format, but also removed the prepared hide’s imperfection-laden edge (*Fig. 1*) [2][3]. The resultant poor-quality scraps, or *offcuts*, saw use in a wide variety of contexts, including book production.

My doctoral dissertation (in progress) examines the use of this conspicuously low-end parchment in manuscripts produced in later medieval Britain. Medieval makers and consumers recognised distinct grades of parchment [4][5] and, with writing support constituting one of the largest components of a codex’s cost [3][6], ugly-but-cheap offcuts likely appealed to economising impulses. Yet how widespread was recruitment of offcuts as writing support? Was the practice confined to specific settings, or associated with particular languages or genres? How might use of this material inform our understanding of book production contexts or of readership? Since investigating such questions first requires a reasonably reliable strategy for identifying offcuts, the initial stages of my dissertation focussed on establishing offcut diagnostic traits.

BL, Lansdowne 348, ff. 53v–54r BL, Lansdowne 348, f. 28v BL, Hargrave 433, f. 8r Bodleian, Bodley 672, f. 163r

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Figure 1. Selected offcut traits (*left to right*: edge gap, wheal, grain, tool marks)

Existing research on offcuts ascribes an upper size limit of *ca.*150 mm, and notes some basic characteristics: edge gaps and small format (relative to adjacent bifolia); atypical stiffness, thickness, thinness, weakness, or translucency; hair follicles; discolouration; striations; tool marks; holes; keratinisation; poor ink adhesion; and certain medieval repairs (*i.e.* sewn-up tears, patches, scarfing) [2]. Thus, to begin my investigation, I compiled a list of over 300 manuscript codices produced in England

between *ca*.1250 and *ca*.1500, and measuring 150 mm or less along their longest dimension. Each codex was assessed for offcut traits *in situ*, bifolium by bifolium, yielding a core set of 127 manuscripts exhibiting target traits on at least 10% of their bifolia.

Guided by observation and the relevant literature [7], I refined and augmented the feature list to yield twenty-one potential traits, coding them as either categorical or continuous variables: small format; edge gaps; keratinisation; plaque-type blemishes; wheals (a.k.a. 'sheep-windows'); grain; striations; hair follicles; holes; tool-marks; hyalinity; delamination; poor ink adhesion; rough or greasy surface texture; atypical thickness, thinness, stiffness, or limpness; discolouration; and medieval repairs. Revisiting the core manuscript set, I reassessed every bifolium (n = 7917), recording traits and assigning a 'verdict' (rating of confidence in its offcut status). Preliminary linear regression analysis using SPSS shows that many hypothesised offcut traits — *viz*., holes, hyalinity, plaque-type blemishes, delamination, rough or greasy texture, thickness, thinness, limpness, and repairs — exhibit low diagnostic strength, and thus do not reliably identify offcuts. Discolouration (approaches significance) and hair follicles (weakly significant) also prove unreliable markers. Instead, the most robustly diagnostic features seem to be edge gaps, grain, and striations, along with keratinisation, wheals, poor ink adhesion, tool marks, and small format (*Table 1*).

Coefficients[1]

	Unstandardized		Standardized				Unstandardized		Standardized		
	B	Std. Error	Beta	t	Sig.		B	Std. Error	Beta	t	Sig.
(Constant)	-.011	.019		-.590	.555	(Constant)	-.011	.019		-.590	.555
Small	.408	.091	.110	4.503	.000	Delam.	.062	.107	.015	.576	.565
Gaps	.781	.081	.263	9.614	.000	InkAdh.	.194	.034	.144	5.796	.000
Kerat.	.454	.069	.208	6.600	.000	Rough	.057	.041	.035	1.392	.165
Plaques	.266	.159	.042	1.667	.096	Greasy	.079	.048	.040	1.656	.098
Wheals	.645	.096	.168	6.696	.000	Thin	.074	.040	.046	1.841	.066
Grain	.582	.051	.300	11.447	.000	Thick	-.018	.035	-.014	-.529	.597
Striation	.511	.058	.230	8.742	.000	Stiff	.071	.026	.075	2.705	.007
Follicle	.275	.137	.049	2.002	.046	Limp	.020	.040	.013	.512	.609
Holes	-.022	.082	-.007	-.266	.790	Discolour.	-.130	.068	.047	1.901	.058
Tooling	.985	.207	.114	4.764	.000	Repairs	.023	.088	.006	.267	.789
Hyalinity	-.021	.060	-.009	-.347	.729						

1 Dependent variable: Verdict

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Table 1. Results of preliminary linear regression analysis and t-test.

Having established a reliably diagnostic set of offcut traits, subsequent stages of my project will focus on identifying correlations between extent of offcut use in a manuscript and other attributes such as genre, date, ornamentation, *mise-en-page*, paratexts, etc. In addition, the diagnostic traits appear to be amenable to physical analysis and imaging methods such as spectroscopy and instrumental analysis techniques [8]. These approaches may be useful in verification of initial findings by identifying offcut parchment in ways that reduce human error and clarify whether some ostensibly offcut traits actually arise from environmental or other factors (*e.g.* related to source animal species). The development of an IIIF-friendly application to expedite initial assessment and facilitate future scholarship may also be possible.

Acknowledgements

This work was financially supported by the Social Sciences and Humanities Research Council of Canada | Cette recherche a été financée par le Conseil de recherches en sciences humaines du Canada.

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