

Borgstrøm's Word Lists: East Sutherland and Easter Ross Dialects in the Light of the Scottish Gaelic Dialect Survey

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I paid my first visit to Easter Ross during the spring of 1967.¹ Having travelled there in order to study the Gaelic language of the area,² I immediately observed many important distinctions between the dialect of the area and that of the west of the county as described by Borgstrøm in his volume on Skye and Ross-shire Gaelic.³ Noticeable, too, was the fact that the Gaelic on the east coast of the county shared features with East Sutherland dialects⁴ on the opposite side of the Dornoch Firth which Ross-shire dialects in the west and elsewhere did not. A comprehensive investigation of this whole area was not feasible then when fluent speakers were still extant. Such studies were, however, made possible decades later when the Scottish Gaelic Dialect Survey (*SGDS*) was published (*Fig. 1*).⁵ The volumes in question supply data collected in the field not only in the Easter Ross region where I had worked (*SGDS* Points 154, 155), but obtained also from points to the north and south (*SGDS* Points 152–53; and 156–162 respectively) of my area, as well as from Points 141–151 which represent the dialects of East Sutherland. Data were also obtained from one single point in (eastern) Caithness (*SGDS* 140) and on account of its close geographic proximity to East Sutherland material from here has also been included. The availability of data from the entirety of these points makes it possible now to undertake comparative research into the varieties of Gaelic spoken in this whole region. Though studies such as this based on the data in question will necessarily be limited in scope they will, in many ways, however, prove valuable in defining some parameters for us.

My approach to the present study based on *SGDS* data has been to adhere to a method which I have employed on previous occasions to examine isogloss boundaries in Lewis-Harris dialects; internally in the case of the dialects of Skye; and most recently within Ross-shire as a whole.⁶ This method utilises the 102 item word list which Borgstrøm created in order to examine isogloss

¹ It is with much pleasure that I offer the present paper to my good friend and long-time colleague, Dr John Shaw, on the occasion of his 80th birthday. To him I owe the inestimable debt of having first been introduced by him to the treasure house that is Cape Breton Gaelic, as well as to the friendship of the incomparable Gaelic inhabitants of that island: *Go mba fada beo é Iain agus dúch as a pheann!*

² Seosamh Watson, *Easter Ross Gaelic: Lexicon and Texts with Brief Phonology* (Dublin: Dublin Institute for Advanced Studies, 2022). For the sake of internal consistency, I have excluded data recorded there from the present study; see further Watson, *Easter Ross Gaelic* 16–19.

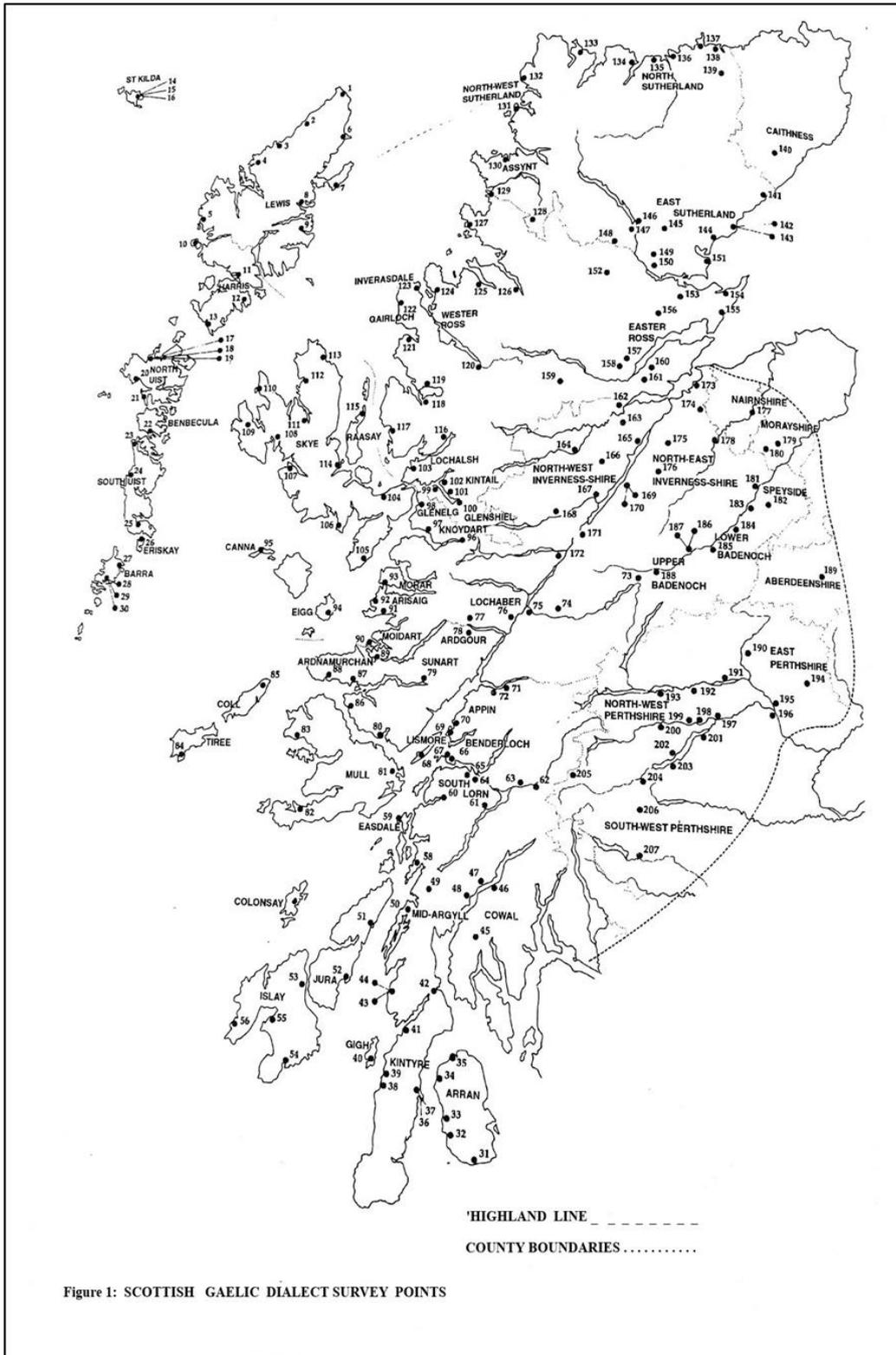
³ Carl Hjalmar Borgstrøm, *A Linguistic Survey of the Gaelic Dialects of Scotland vol. II: the Dialects of Skye and Ross-shire* (Oslo: Norwegian Universities Press, 1942).

⁴ Nancy C. Dorian, *East Sutherland Gaelic* (Dublin: Dublin Institute for Advanced Studies, 1978).

⁵ Cathair Ó Dochartaigh (ed.), *Survey of the Gaelic Dialects of Scotland – Vol. 1: Introductory Essays* (Dublin: Dublin Institute for Advanced Studies, 1997); and *Vols 2–5 – Questionnaire Materials* (Dublin: Dublin Institute for Advanced Studies, 1994).

⁶ Seosamh Watson, 'Borgstrøm's word-list revisited: Lewis and Harris' in *Proceedings of the Eighth Symposium of Societas Celtologica Nordica*, ed. Jan-Erik Rekdal and Ailbhe Ó Corráin (Uppsala:

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Uppsala Universitet, 2007); Seosamh Watson, ‘Liosta Focal Borgström agus Canúintí an Oileáin Sgitheanaigh i bhFianaise *SGDS*’ in *Atlantic Currents: Essays on Lore, Literature and Language; Essays in Honour of Séamas Ó Catháin on the Occasion of his 70th Birthday*, ed. Bo Almqvist, Críostóir Mac Cárthaigh, Liam Mac Mathúna, Séamas Mac Mathúna and Seosamh Watson (Dublin: University College Dublin Press, 2012); and Seosamh Watson, ‘Borgström’s Word Lists and Ross-shire Dialects in the light of the Scottish Gaelic Dialect Survey’ in *Studia Celtica Upsaliensia* (Uppsala: Uppsala Universitet, forthcoming).

boundaries in Western Isles dialects.⁷ The following year he published a volume devoted to the study of Skye and Ross-shire Gaelic, which contained a separate word list constructed specifically to examine western Ross-shire dialects.⁸ In the present study these two lists have been conflated, with the omission of a very few items. These omissions correspond to items not occurring in *SGDS* materials and for which an alternative term displaying the target linguistic features, e.g. *SGDS cuairt* (substituted for Borgstrøm's *goirt*) is unavailable. The final integrated list is shown below in alphabetical order (*Fig 2*).

Before proceeding, it is necessary to repeat two caveats noted in connection with my aforementioned studies on Lewis-Harris and elsewhere, first, that Borgstrøm's word lists contain precious little morphological information and virtually nothing with regard to lexicon, syntax or sociolinguistics; and second, that Borgstrøm – to whom we unquestionably owe so much – laboured in the field a couple of decades before the *SGDS* collectors. Nevertheless, the speech communities we are dealing with essentially remained in the intervening period a conservative rural population – a fact readily verifiable by means of a comparison between the data recorded in the two separate survey projects. Such limitations notwithstanding, I am confident that the analysis provided here will prove a useful step forward in our understanding of the dialects of the Eastern Scottish Highlands.⁹

<i>ainm</i>	<i>cuairt SGDS, for goirt DOH</i>	<i>mèirleach</i>
<i>airgead</i>	<i>cuimhne</i>	<i>naoi</i>
<i>aithne</i>	<i>doras[t]</i>	<i>oidhche</i>
<i>a-null</i>	<i>dorais[t]</i>	<i>oirre</i>
<i>àrd</i>	<i>druim</i>	<i>olc</i>
<i>bainne</i>	<i>dùirn</i>	<i>pac SGDS, for mac DOH</i>
<i>càirdean</i>	<i>each</i>	<i>rìgh</i>
<i>ceangail</i>	<i>faiceadh</i>	<i>seachdain</i>
<i>ceann</i>	<i>falbh[aidh]</i>	<i>tairbh</i>
<i>cearc</i>	<i>feadhain</i>	<i>teamga[idh]</i>
<i>ceart</i>	<i>fheàrr</i>	<i>thill</i>
<i>ceathrar</i>	<i>greim</i>	<i>thubhairt</i>
<i>cinnteach</i>	<i>grian</i>	<i>tionndadh</i>
<i>cloiche</i>	<i>ìosal</i>	<i>treabhadh</i>
<i>chuinnean</i>	<i>leac</i>	<i>tric</i>
<i>coirce</i>	<i>lean[aidh]</i>	<i>tuiteam</i>
<i>creid[sinn]</i>	<i>meadhg</i>	

Fig. 2. Combined word list based on Borgstrøm 1940 and Borgstrøm 1941

SGDS data relating to each item in the list above have been examined in order to identify linguistic innovations which will, as noted, generally be located in the category of phonology. On any occasion where data from two or more of the points exhibit the same innovation, an

⁷ Carl Hjalmar Borgstrøm, *A Linguistic Survey of the Gaelic Dialects of Scotland vol. I: the Dialects of the Outer Hebrides* (Oslo: Norwegian Universities Press, 1941), 235–243.

⁸ Borgstrøm, *Dialects of Skye and Ross-shire*, 144–147.

⁹ The Gaelic dialects of the Eastern Highlands are, of course, distinguished from many western speech forms in that the former stand at an important linguistic interface with Scots. On this little-studied topic see Seosamh Watson, 'Scots and English loanwords in a Peripheral Gaelic dialect of Northeast Scotland' in Manuela Nevaci, Irina Floarea and Ioan-Mircea Farcaş, *Ex Oriente Lux in honorem Nicolae Saramandu* (Alessandria: Edizioni dell'Orso, 2021), 1127–1160.

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isogloss is recognised, the sum total of isoglosses linking each pair of *SGDS* points is calculated, and the whole then displayed in a table setting forth the total number of isoglosses connecting each individual pair of points.¹⁰ Here follows a presentation of the individual linguistic features (1–55) on which the judgment is based, along with a brief indication of how common the feature in question has been found to be in Easter Ross as a whole, (Pts 152–162 – designated ER) and in East Sutherland and Caithness (Pts 140–151 – designated ES) based on its presence in items on the word list. A comprehensive listing of the innovative features identified, relating these to the same word list, is given in Appendix 1 beside the particular linguistic innovation in question.

DEVELOPMENTS IN VOWELS

Stressed short vowels

- | | |
|--|---|
| 1. Raising | <i>ainm</i> ES (largely); <i>airgead</i> ES (largely); <i>aithne</i> ES (largely); <i>a-null</i> ES (largely), ER (partly); <i>bainne</i> ES (partly); <i>rathneach</i> ER, ES (partly); <i>tionndadh</i> ER, ES (partly). |
| 2. Lowering | <i>ceann</i> ER, ES; <i>cearc</i> ER (partly), ES (partly); <i>ceart</i> ER, ES; <i>ceangail</i> ER (partly), ES (partly); <i>each</i> ER, ES; <i>'s fheàrr</i> ER, ES; <i>seachdain</i> ER (largely), ES (largely); <i>teanga(idh)</i> ER (partly), ES (partly); <i>tairbh</i> ES (partly). |
| 3. Preceded by approximant / semivowel | <i>each</i> ER, ES; <i>feadhain</i> ER (partly); <i>mèirleach</i> ER, ES (partly); <i>tionndadh</i> ER (partly), ES (partly). |
| 4. Rounding | <i>àrd</i> ES (partly); <i>'s fheàrr</i> ES (partly); <i>mèirleach</i> ES (partly); <i>ceangail</i> ER (partly), ES (partly); <i>ceart</i> ES (partly); <i>falbh</i> ES (partly); <i>feadhain</i> ER (largely); <i>treabhadh</i> ER (partly); ES (partly). |
| 5. Rounding and raised | <i>bainne</i> ES (partly). |
| 6. Unrounding | <i>cluinntinn</i> ER (largely), ES; <i>cuimhne</i> ER (largely), ES (largely); <i>doras</i> ER (largely), ES; <i>druim</i> ER (partly), ES; <i>oidhche</i> ER, ES. |
| 7. Advancing | <i>druim</i> ER (largely), ES; <i>tairbh</i> ER (partly), ES (partly). |
| 8. Retraction | <i>creididh</i> ER (partly), ES (partly); <i>feadhain</i> ER, ES (partly); <i>greim</i> ER (largely), ES (largely); <i>teanga(idh)</i> ES (partly), ER (partly). |
| 9. Retraction with raising | <i>airgead</i> ES (partly); <i>càirdean</i> ES (partly). |
| 10. Diphthongisation | <i>a-null</i> ER (partly), ES (partly); <i>ceangail</i> ER (partly), ES (largely); <i>ceann</i> ER, ES; <i>tionndadh</i> ES (largely); <i>cluinntinn</i> ER (largely), ES (partly); <i>cuimhne</i> ER (largely), ES (partly); <i>druim</i> ER (largely); <i>greim</i> ER, ES; <i>feadhain</i> ER (partly), ES (partly); <i>teanga(idh)</i> ER (partly), ES (partly); <i>mèirleach</i> ER (partly), ES (partly); <i>treabhadh</i> ES (partly). |
| 11. Lengthening | <i>a-null</i> ER (largely), ES (largely); <i>àrd</i> ER, ES; <i>càirdean</i> ER (largely), ES; <i>ceangail</i> ER (partly), ES (partly); <i>cinnteach</i> ER (partly), ES (partly); <i>cluinntinn</i> ER (partly) ES (largely); <i>cuimhne</i> ER (partly), ES (largely); <i>druim</i> ER (partly); <i>dùirn</i> ER (partly), ES (partly); <i>'s fheàrr</i> ER, ES; |

¹⁰ Where, very occasionally, an informant has supplied an alternative response which also constitutes an innovation, the *SGDS* point in question is credited with both innovations. Certain linguistic innovations, of course, are seen in this study at one point only and, though they may constitute isoglosses with points in regions outside Ross-shire, are of no assistance in this geographically limited enquiry. Their connections with such regions are, however, noted with relevant references in Appendix 2 below.

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mèirleach ER (largely), ES (largely); *thill* (/ *fill*) ER (largely), ES (largely); *tionndadh* ER (largely), ES (largely).

12. Independent nasalisation

faiceadh ER (largely), ES (largely).

13. Svarabhakti with clear vowel

ainm ES (partly); *airgead* ES (partly); *tairbh* ES (partly).

Stressed long vowels

14. Diphthongisation

rìgh ER (largely), ES (partly); *iosal* ER, ES.

15. Final unhiotical consonant added

naoi ER (partly).

Stressed diphthongs

16. Centralisation of second element

cuairt ER (partly) ES (partly); *grian* ER (partly), ES (partly).

17. Reduction of first element to labial glide

cuimhne ES (partly).

Unstressed short vowels

18. Development to [a/a] in contact with historical labial fricative

seachdain (Early Irish *sechtmain*) ER, ES.

19. Development to [a/a] in contact with velar fricative

cinnteach ER, ES; *raithneach* ER, ES; *mèirleach* ER, ES.

20. Final apocope

aithne ER (partly), ES (largely); *bainne* ER (largely), ES; *corca/coirce* ER, ES; *cuimhne* ER (largely), ES, *oidhche* ER (largely), ES; *oirre* ER (largely), ES.

DEVELOPMENTS IN CONSONANTS

Pre-aspiration

21. Single consonants realised as [h, h']

faiceadh ER (partly); *leac* ER (partly), ES (partly); *mac(/pac)* ER (partly), ES (partly); *tric* ER (partly); *tuìteam* ER (partly), ES (partly).

22. Single consonants realised as [x]

faiceadh ER (partly); *leac* ER (partly); *mac(/pac)* ER (partly); *tric* ER (partly).

23. Clusters realised as devoicing of sonant before stop

cearc ER, ES (largely); *corca/coirce* ER, ES (largely); *olc* ER, ES (largely).

Depalatalisation

24. Initial

leanaidh ER (partly).

25. Single consonants

faiceadh (-ic- > [k] ES (partly).

26. Single consonants

seachdain (-ain > [n]) ER, ES (largely).

Clusters

27. Initial

creid- ER, ES (largely); *greim* ER, ES (largely); *tric* ER, ES (largely); *triùir* ER, ES (largely).

28. Medial

càirdean ER (largely), ES (largely); *mèirleach* ER (largely), ES.

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29. Final *iosalcuairt* ER (largely), ES (largely); *dùirn* ER (largely), ES (partly).
 30. Unstressed final *thubhairt* ER (partly), ES (largely).

Reduction

31. Development to single retroflex consonant *àrd* ER (partly), ES (partly); *càirdean* ES (partly); *mèirleach* ER (partly), ES (partly).
 32. Same development in unstressed final *thubhairt* ER (partly), ES (partly).
 33. Reduction of 3-element final sibilant cluster to two elements *ceart* ER (partly), ES (partly); *cuairt* ER (partly), ES (partly).
 34. Loss of fricative in svarabhakti position *falbhaidh* ER, ES (partly).
 35. Loss of historical voiceless fricative *aithne* ER, ES; *ceathrar* ER, ES; *raithneach* ER, ES.

Loss of fricative / sonant

36. Loss of fricative *feadhain* ER (partly), ES (partly); *thubhairt* ER (partly), ES (partly).
 37. Loss of sonant *teangaidh* ER (largely), ES.

Vocalisation

38. Vocalisation of fricative / sonant *ceangail* ER, ES; *feadhain* ER (largely); *tairbh* (in svarabhakti position) ER, ES; *thubhairt* ER, ES.
 39. Vocalisation of stop following nasal *cinnteach* ER (partly), ES (partly).

OTHER DEVELOPMENTS

40. Change of sonant category [ɲ > ŋ'] *aithne* ES (partly); *bainne* ES (partly); [ŋ > v, ʎ] *teangaidh* ER.
 41. Change of stop category ([t' > k']) *tionnd-ail*, *tionnd-adh* ES (partly).
 42. Epenthesis of final – g [k] *raithneach* ER (partly), ES (partly).
 43. Retroflexion of historical non-palatalised lateral *falbhas*, *iosal*, *olc* ES (partly).

MORPHOLOGY

Nouns

44. Gen. sg. not distinguished *cloiche* ER (partly), ES (partly); *doraist* ER (partly), ES (partly).
 45. Spread of pl. morph –an *ta(i)rbh(e)an* ER (partly), ES (partly).

Adjectives

46. analogical formation *iosal* (for *iseal*; based on *sìos*, *shìos*) ER, ES.

Pronouns

47. Depalatalisation, velarisation, devoicing *oirre* (**oi-** > [ɛ]:) ER (partly), ES (partly); **-rr-** > **depalatalised**): ER (largely), ES (largely); > velarised [R]: ER (partly); **devoiced** [r, R]: ER (partly), ES (partly); **final -e** > [i]: ES (partly).

Verbs

48. Future Independent termination *falbh-aidh* (*mi*): **[-a]** (following deletion of final element): ER (partly), ES (partly); **[-i]** (following deletion of *-bh*): ER (partly), ES (partly); **[-u]** (arising from *-bh-* following deletion of final element) ER (partly).
49. Future independent termination *creid-as/ falbh-as/ leanas* (*mi*): **[-əs]** separate morph added following deletion of *-bh*: ER (partly), ES (partly).
50. Conditional dependent *faiceadh* (**termination -adh** >[**u/əv**]) ER 153, 154, 155, 156; ES. > [**ək**] ER 157, 158, 159, 160, 161, 162.

Verbal nouns

51. Stem change *treabh-* (**verbal stem** > [ɔ]): ER (largely), ES.
52. Terminations *tionnd-*; **-a(i)n**; ER (largely), ES (partly); **-ail** ER (partly), ES (partly); **-adh** > [**u**] ES (partly).
53. Terminations *treabh-* **-adh** > [**u/əv/əw**] ER (partly), ES (largely); > [**ək**] ER (partly).

LEXICON

54. *corca* ER, ES.
55. *clàistinn* (replacing/ in addition to *cluinntinn*): ER partly.

Method of analysis

With the median number of correspondences between points calculated as (58/59), those points providing a total correspondence of (69) or above may be considered as in the highest quartile. The table below (*Fig. 3*) shows those points in the top quartile, together with a note of the points with which each is in accord.

Easter Ross	East Sutherland / Caithness
152: ER 156	142: ES 143, 144, 145
153: ER 156	143: ES 142, 144, 145
154: ER 155	144: ES 142, 143, 151
155: ER 154, 156	145: ES 142, 143, 146, 147, 148, 149
156: ER 152, 153, 155, 160	146: ES 145
157: ER 158, 159	147: ES 145
158: ER 157, 159, 160, 162	148: ES 145
159: ER 157, 158	149: ES 145, 150
160: ER 156, 158, 161, 162	150: ES 145, 149
161: ER 160, 162	151: ES 144
162: ER 160, 161	

Fig. 3. Sequences of points in highest quartile of correspondences

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As to the question of how best to portray the results of this study I am reliably informed that a so-called 'heat map' will summarise the outcomes clearly and succinctly (see *Fig 4*).¹¹

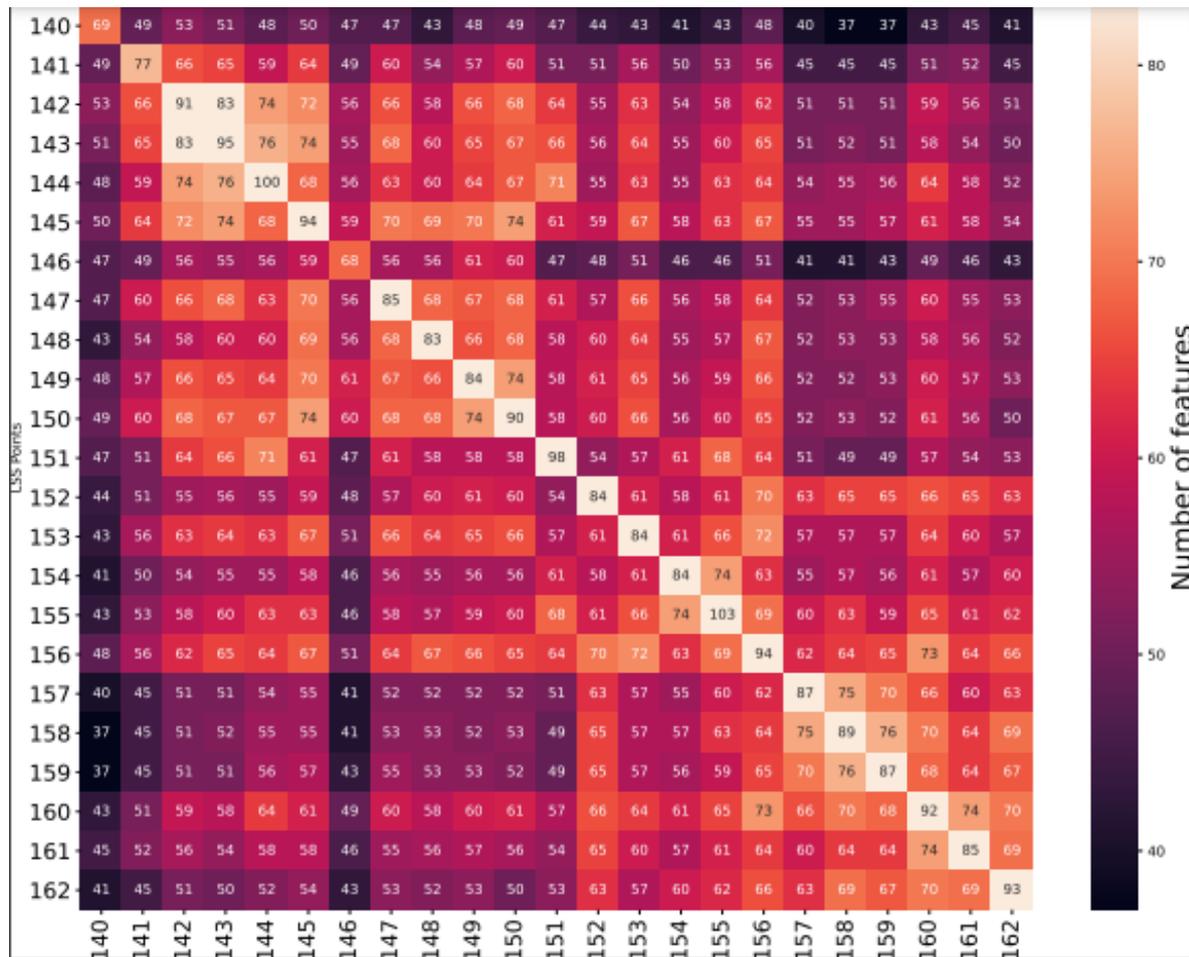


Figure 4: Degrees of relationship between the various SGDS points portrayed as a heat map.

In sequence along the top left-bottom right axis are recorded the total number of words out of a possible 141 items (see Appendix 1) in which one or more of the innovations identified for study here have taken place, with the figures forming the top left – bottom right axis itself indicating the total number of innovations which feature at a particular point, without reference to its neighbours. Displaying the data twice, as here, on either side of the axis produces a mirror image, a format which serves to highlight the existence of the clusters or 'hot spots' which we seek.

The heat map shows that there are no clusters linking Easter Ross points with any in East Sutherland; and that clusters brought to light in each of these two regions separately are quite limited in size, e.g. Easter Ross 154–56, 157–59, 160–62. The West Sutherland clusters which are visible are clearly of a different order. Take, for instance, the case of one pair of points (142–43) within a particular cluster (141–45): each point shows a very high correlation one to the other but, at the same time, they are neighbours to points (141, 145) whose correlations with the other points do not fall within the highest quartile. As for East Sutherland, some

¹¹ I am indebted to Prof. Darach Watson, Nils Bohr Institute, University of Copenhagen, for his kind advice and assistance in the preparation of this map.

‘clusters’ in this region, will only be admissible if we allow the participation of points from a lower percentile.

On the basis of the analysis performed on these, admittedly limited data, therefore, Wester Ross appears as a distinctive linguistic territory within which clusters of points are linked together through sharing high numbers of innovations. East Sutherland, on the other hand, does not present the same clear-cut picture.

The isoglosses involved here are, it will be recalled, set forth in the section of this paper detailing the various linguistic innovations (numbered 1 to 55) revealed by our word list as occurring at various points within Easter Ross and East Sutherland together. While the constraints of this paper do not allow us to provide a spatial presentation of all of these, a few examples are provided in Appendix 3 (*Figs 5–10*).

It is worth drawing attention to just a few of the phenomena which can be abstracted from the heat map. In the first instance, the East Caithness point (Pt. 140) shows an extremely low correlation with all the other points in the other two counties examined here. Secondly, there exists a high correlation between Easter Ross Pts 154 and 155, both of which are contained within the research area studied by my own monograph.¹² Thirdly, of the three most easterly E. Sutherland points, (Pts 146–52) far inland, Pt 146 shows a consistently low correlation with all of the Easter Ross points. Finally, we find a high correlation between East Sutherland Pt 144 and Pt 151, both of which are compared and contrasted by Dorian in her East Sutherland monograph.¹³ In more general terms, an overview based on the data recorded in *SGDS* for its points in Easter Ross and East Sutherland (including part of Caithness), as applied to the items in Borgström’s combined word lists, suggests a clear distinction between the two regions. Within each of these there are small areas which show a higher correlation with nearby points, the more so in Easter Ross.

APPENDIX 1

Survey of selected traits as represented at *SGDS* points for East Ross-shire and East Sutherland

PART 1: VOWELS

INHERITED SHORT STRESSED VOWELS

Vowel raised

<i>ainm</i>		ES 140, 141, 142, 143, 144, 145, 146, 150
<i>airgead</i>		ES 140, 141, 142, 144, 146, 149, 150
<i>aithne</i>	ER 152, 153, 154, 155, 156, 158, 159, 160, 162	ES 145, 147, 149, 150

¹² Watson, *Easter Ross Gaelic*.

¹³ Dorian, *East Sutherland Gaelic*. 1978; see also Nancy C. Dorian, *Investigating Variation: The Effects of Social Organization and Social Setting* (Oxford: Oxford University Press, 2010).

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<i>a-null</i>		ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>bainne</i>		ES 140, 141, 142, 143, 144
<i>raithneach</i>	ER 155, 157, 158; ES 142, 143, 151	
<i>tionndadh</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 144, 148, 151
<u>Vowel lowered</u>		
<i>ceangail</i>	ER 152, 153, 154, 155, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150
<i>ceann</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>cearc</i>	ER 153, 162; ES 146, 147, 148, 149, 151	
<i>ceart</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>each</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>('s) fheàrr</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>mèirleach</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 147, 151
<i>seachdain</i>	ER 152, 153, 154, 155, 156, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>teanga(idh)</i>	ER 152, 155, 156	ES 148, 149, 151
<i>tairbh</i>		ES 140, 142, 143, 144, 145, 146, 149, 150
<u>Vowel preceded by approximant / semivowel</u>		
<i>each</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>feadhain</i>	ER 153, 155, 156, 161, 162	
<i>mèirleach</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 147, 150, 151
<u>Vowel rounded</u>		
<i>àrd</i>		ES 142, 143, 144, 151
<i>fheàrr</i>		ES 142, 143, 144, 151
<i>ceangail</i>	ER 154, 155, 158, 160, 161, 162	ES 140, 151
<i>ceart</i>		ES 142, 143, 144, 151
<i>falbh</i>		ES 143, 144
<i>feadhain</i>	ER 153, 155, 156, 157, 158, 159, 160, 161, 162	
<i>mèirleach</i>		ES 142, 143, 144, 151

SEOSAMH WATSON

treabhadh ER 156, 157, 158, 159, 160, 161, 162 ES 148

Vowel rounded and raised

bainne ES 140, 141, 142, 143, 144

Vowel unrounded

cluinntinn ER 152, 153, 156, 157, 158, 159, 160, 161 ES 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

cuimhne ER 152, 153, 156, 157, 158, 159, 160, 161 ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150

doras ER 152, 153, 154, 155, 156, 157, 160, 161 ES 140, 141, 142, 143, 144, 145, 146, 147, 149, 150, 151

druim ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162 ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

oidhche ER 152, 153, 156, 157, 159, 160, 161 ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

Vowel advanced

cluinntinn ER 153, 156, 160 ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

cuimhne ER 153, 161 ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150

druim ER 152, 154, 155, 156, 160, 161, 162 ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

tairbh ER 162 ES 141, 147, 148

Vowel retracted

creididh ER 152, 154, 155, 159 ES 151

feadhain ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162 ES 144, 145, 146, 147, 148, 149, 150, 151

greim ER 154, 155, 156, 157, 158, 159, 160, 161, 162 ES 141, 142, 143, 145, 147, 149, 151

teang(aidh) ES 140, 141, 146

Vowel retracted and raised

airgead ES 143, 145, 147, 148

càirdean ES 142, 143, 144, 151

+ diphthongisation

a-null ER 157 ES 140

ceangail ER 152, 158 ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150

ceann ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162 ES 140, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

cluinntinn ER 152, 154, 155, 156, 157, 158, 159, 160, 161, 162 ES 140, 146, 149

BORGSTRØM'S WORD LISTS

<i>cuimhne</i>	ER 152, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 148, 151
<i>druim</i>	ER 152 154, 156, 157, 158, 159, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>feadhain</i>	ER 157, 158, 159, 160, 161, 162	ES 144, 149, 150
<i>mèirleach</i>	ER 156, 160	ES 144, 149, 150
<i>teang(aidh)</i>	ER 153, 156, 160	ES 142, 143, 144, 147, 149, 150, 151
<i>tionndadh</i>		ES 140, 141, 142, 143, 145, 146, 149, 150
<i>treabhadh</i>		ES 140, 147
<u>+ lengthening</u>		
<i>a-null</i>	ER 152, 153, 154, 155, 156, 158, 159, 160, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>àrd</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>càirdean</i>	ER 152, 153, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>ceangail</i>	ER 155, 161	ES 151
<i>cinnteach</i>	ER 154, 155, 156, 157, 158, 160, 162	ES 150, 151
<i>cluinntinn</i>	ER 153	ES 141, 142, 143, 145, 147, 148, 150, 151
<i>cuimhne</i>	ER 153, 160	ES 142, 143, 144, 145, 146, 147, 149, 150
<i>druim</i>	ER 153, 154, 155, 160, 161, 162	
<i>dùirn</i>	ER 152, 153, 156, 157, 158, 159, 162	ES 140, 145, 147, 148, 149, 151
<i>fheàrr</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	
<i>mèirleach</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 142, 143, 144, 145, 146, 149, 150, 151
<i>thill/fill</i>	ER 152, 153, 154, 155, 156, 158, 159, 160, 161, 162	ES 140, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>tionndadh</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 144, 147, 148, 151
<u>+ independent nasalisation</u>		
<i>faiceadh</i>	ER 152, 153, 156, 157, 158, 159, 160, 161	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

+ svarabhakti with tonic vowel

ainm ER 152, 156, 157, 158, 159,
160, 161

airgead ES 140, 146, 147, 148, 150

tairbh ER 152, 157, 158, 159, 162

INHERITED STRESSED LONG VOWELS+ diphthongisation

rìgh ER 152, 154, 155, 156, 157,
158, 159, 160, 161, 162

ìosal ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
157, 158, 159, 160, 161, 162 146, 147, 148, 149, 150, 151

+ final unhistorical vowel

naoi ER 158, 159

INHERITED STRESSED DIPHTHONGS+ centralisation of second element

cuairt ER 157, 158, 159, 160, 161, ES 144
162

grian ER 162 ES 140, 146

Reduction of first element to labial glide

cuimhne ES 142, 143, 144

INHERITED SHORT UNSTRESSED VOWELSdevelopment of [a]-type vowel in second syllable

seachdain ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
157, 158, 159, 160, 161, 162 146, 147, 148, 149, 150, 151

cinnteach ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
157, 158, 159, 160, 161, 162 146, 147, 148, 149, 150, 151

raithneach ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
157, 158, 159, 160, 161, 162 146, 147, 148, 149, 150, 151

mèirleach ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
157, 158, 159, 160, 161, 162 146, 147, 148, 149, 150, 151

final apocope

aithne ER 154, 155 ES 140, 141, 142, 143, 145, 146,
147, 149, 150, 151

bainne ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
160, 161 146, 147, 148, 149, 150, 151

corca (/coirce) ER 152, 153, 154, 155, 156, ES 140, 141, 142, 143, 144, 145,
157, 158, 159, 160, 161, 162 146, 147, 148, 149, 150, 151

BORGSTRØM'S WORD LISTS

<i>cuimhne</i>	ER 152, 153, 154, 155, 156, 157, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>oidhche</i>	ER 152, 153, 154, 155, 156, 157, 158, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>oirre</i>	ER 153, 154, 155, 156, 157, 160, 161	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

PART 2: CONSONANTS

PREASPIRATION

Preaspiration realised as h

<i>faiceadh</i>	ER 157, 158, 159, 162	
<i>leac</i>	ER 152, 153, 154, 155, 157, 158, 159	ES 149, 150
<i>pac (/mac)</i>	ER 155, 157, 158, 159	ES 145
<i>tric</i>	ER 154, 155, 157, 158, 159	
<i>tuiteam</i>	ER 152, 157, 158, 159, 160, 161, 162	ES 145

Preaspiration realised as ch

<i>faiceadh</i>	ER 152, 160, 161
<i>leac</i>	ER 160, 161, 162
<i>mac/pac</i>	ER 161, 162
<i>tric</i>	ER 152, 156, 160, 161, 162

Preaspiration realised as devoiced consonant before stop

<i>cearc</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 147, 148, 149, 150, 151
<i>corca (/coirce)</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 147, 148, 149, 150, 151
<i>olc</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150

PALATALISATION AND DEPALATALISATION

Palatalisation: Final

<i>triùr > triùir</i>	ER 154	ES 140, 144, 151
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Depalatalisation: Initial

<i>leanaidh</i>	ER 160, 163
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Depalatalisation: Medial

<i>faiceadh (-ic- > [k])</i>	ES 145, 151
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Depalatalisation: Final

<i>seachdain</i> (-ain --> [n])	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150
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Depalatalisation: ClustersInitial clusters

<i>creid-</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 147, 148, 149, 150
<i>greim</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 147, 148, 149, 150, 151
<i>tric</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 147, 148, 149, 150, 151
<i>triùir</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 145, 147, 148, 149, 150, 151

Medial clusters

<i>càirdean</i>	ER 153, 155, 156	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>mèirleach</i>	ER 152, 153, 154, 155, 156, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

Final clusters

<i>cuairt</i>	ER 152, 153, 154, 155, 156, 161, 162	ES 140, 141, 142, 143, 145, 147, 148, 149, 150, 151
<i>dùirn</i>	ER 152, 153, 156, 157, 158	ES 145, 148, 150

Final cluster of unstressed syllable

<i>thubhairt</i>	ER 152, 153, 154, 155, 156	ES 140, 141, 142, 143, 145, 147, 148, 149, 150, 151
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REDUCTIONCluster > single retroflex consonant

<i>àrd</i>	ER 154, 155	ES 144, 151
<i>càirdean</i>		ES 144, 151
<i>mèirleach</i>	ER 155	ES 144, 151

Final cluster of unstressed syllable > single retroflex consonant

<i>thubhairt</i>	ER 155	ES 144, 151
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Final three-element cluster [rst] > reduced to two elements

<i>ceart</i>	ER 155, 160	ES 144, 151
<i>cuairt</i>	ER 154, 155	ES 144, 151

BORGSTRØM'S WORD LISTS

Historical voiceless fricative lost

<i>aithne</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>ceathrar</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>raithneach</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

Loss of -bh- in svarabhakti

<i>falbhaidh</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 141, 142, 143, 144, 145.
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Loss of fricative

<i>feadhain</i>	ER 153, 154, 155, 156	ES 144, 145, 148, 149, 150
<i>thubhairt</i>	ER 154	ES 145, 146, 147, 148

Loss of sonant

<i>teang(aidh)</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 162	ES 142, 143, 144, 145, 146, 147, 148, 149, 150, 151.
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Vocalisation of sonant

<i>ceangail</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
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Vocalisation of fricative

<i>feadhain</i>	ER 155, 156, 157, 158, 159, 160, 162	
<i>thubhairt</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>tairbh</i>	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

Vocalisation elsewhere: voiceless stop after nasal > voiced

<i>cinnteach</i>	ER 156, 159, 161, 162	ES 140, 141, 142, 143, 144, 145, 147, 151
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CHANGE OF CONSONANT CLASS / TYPE

<i>aithne</i> [ɲ > ɲ']		ES 145, 148, 150
<i>bainne</i> [ɲ > ɲ']		ES 145, 148, 150
<i>teangaidh</i> [ɲ > v, ʎ]		ES 140, 142
<i>raithneach</i> epenthetic final -d [k]	ER 155	ES 144
<i>iosal, olc, falbhas</i> retroflexion of historical non-palatalised lateral		ES 144, 151
<i>tionnd-adh, tionndadh</i> change of class in palatalised stop ([t' > k'])		ES 143, 151

PART 3: MORPHOLOGY

NOUNS

Final vowel of genitive singular lost

cloiche ER 152, 153, 156, 159, ES 145, 146, 148, 149,
162 150

Genitive singular not distinguished

cloiche ER 154, 155, 157, 158, ES 142, 143, 144, 145,
159, 160, 162 151

dorais(t) ER 154, 155, 159 ES 144, 145, 146, 148,
150, 151

Spread of plural morph -an

ta(i)rbh(e)an ER 153, 154, 155 ES 141

ADJECTIVES

Analogical re-formation

iosal (for *iseal*; based on *sìos*, *shìos*) ER 152, 153, 154, 155, ES 140, 141, 142, 143,
156, 157, 158, 159, 144, 145, 146, 147, 148,
160, 161, 162 149, 150

PRONOUNS

oirre (*oi-* > [ɛ]) ER 153, 154, 155, 156, ES 143, 144, 145, 147,
160 148, 149, 150, 151

oirre (*-rr-* > depalatalised) ER 152, 153, 155, 156, ES 141, 142, 143, 144,
157, 158, 159, 160, 161 145, 147, 148, 149, 150

oirre (*-rr-* > velarised [R]) ER 155 ES 144

oirre (final *-e* > *-i*) ES 140, 146

VERBS

Future independent

falbh-aidh (*mi*) termination [-a]) ER 152, 161, 162 ES 149, 150
(arising from *-abh*) > [a/a] + [ə] (< *-aidh*) with final element deleted

falbh-aidh (*mi*) termination [-u] ER 157, 158
(arising from *-bh-*) > [u] + [ə] (< *-aidh*) with final element deleted

falbh-as (*mi*) termination [-əs] ER 155 ES 151
(arising from *-bh*) > ø + [əs]
replacement by alternative fut. indep. morpheme

Replacement by alternative future independent morpheme

creideas ER 155

BORGSTRØM'S WORD LISTS

<i>leanas</i>	ER 155	
<u>Conditional dependent</u>		
<i>faiceadh</i> (termination <i>-adh</i> > [u/əv])	ER 153, 154, 155, 156	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>faiceadh</i> (termination <i>-adh</i> > [ək])	ER 157, 158, 159, 160, 161, 162	
<u>Verbal noun</u>		
<i>tionnd-</i> (+ termination <i>-a(i)n</i>)	ER 152, 153, 154, 156, 157, 158, 159, 160, 161, 162	ES 146, 147, 148, 149, 150
<i>tionnd-</i> (+ termination <i>-ail</i>)	ER 155	ES 142, 143, 145
<i>tionnd-</i> (+ termination <i>-adh</i> > [u])		ES 144, 151
<i>treabh-</i> (verbal stem > [ə])	ER 152, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>treabh-</i> (+ termination <i>-adh</i> > [u/əv/əw])	ER 153, 154, 155, 156	ES 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151
<i>treabh-</i> (+ termination <i>-adh</i> > [ək])	ER 157, 158, 159, 160, 161, 162	

PART 4: LEXICON

<i>clàistinn</i> (instead of/ as well as)	ER 152, 153, 155	
<i>cluinntinn</i>)		
<i>corca</i> (/coirce) (final apocope)	ER 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162	ES 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

APPENDIX 2

Linguistic innovations not shared with other Eastern Ross-shire or Eastern Sutherland points
but having connections outside these areas

<i>a-null</i>	(diphthongised stressed vowel)	ER 157.	Pts 1–9; 127–130
<i>ceathrair</i>	(palatalised final)	ER 154.	e.g. Pts 1–15; 17–30; 92–116 etc; cf. Borgstrøm (1940: 242)
<i>ceart</i>	(diphthongised vowel)	ER 155	Pts 167–72
<i>cinnteach</i>	(voiced stop following sonant)	ER 156	cf. Borgstrøm (1940: 238)
	(diphthongisation of stressed vowel)	ER 157	cf. Borgstrøm (1940: 238)
<i>each</i>	(diphthongised vowel)	ES 140	Pts 9–13; 91–98; 116–140; 165, 167–169 etc.
<i>iosal</i>	(epenthetic <i>-t-</i> after <i>-s-</i>)	ES 141	Possibly arising from sibilant – lateral transition
<i>leac</i>	(diphthongised vowel)	ES 141	Pts 116–118; 165–68; 171–75 etc.
	(preaspiration of <i>-c</i> realised as preceding [x])	ER 162	Pts 116–18, 165–68, 171–73 etc.
<i>thill</i>	(diphthongised vowel)	ER 157	Pts 125, 126; cf. Borgstrøm (1940: 238); Pts. 125–26, 128, 130, 169

APPENDIX 3

Maps

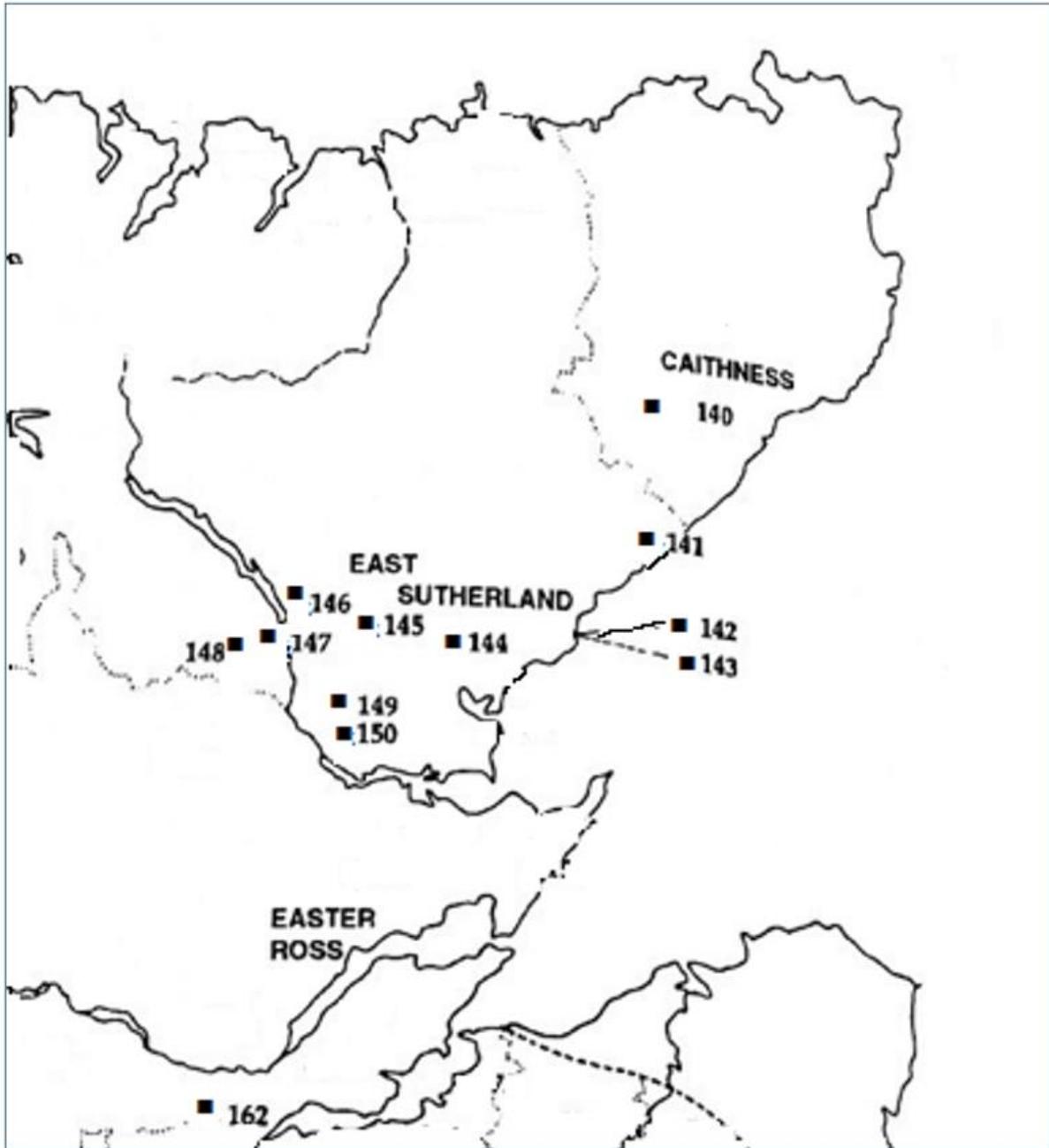


Fig. 5. *airgead, tairbh*: with tonic epenthetic vowel

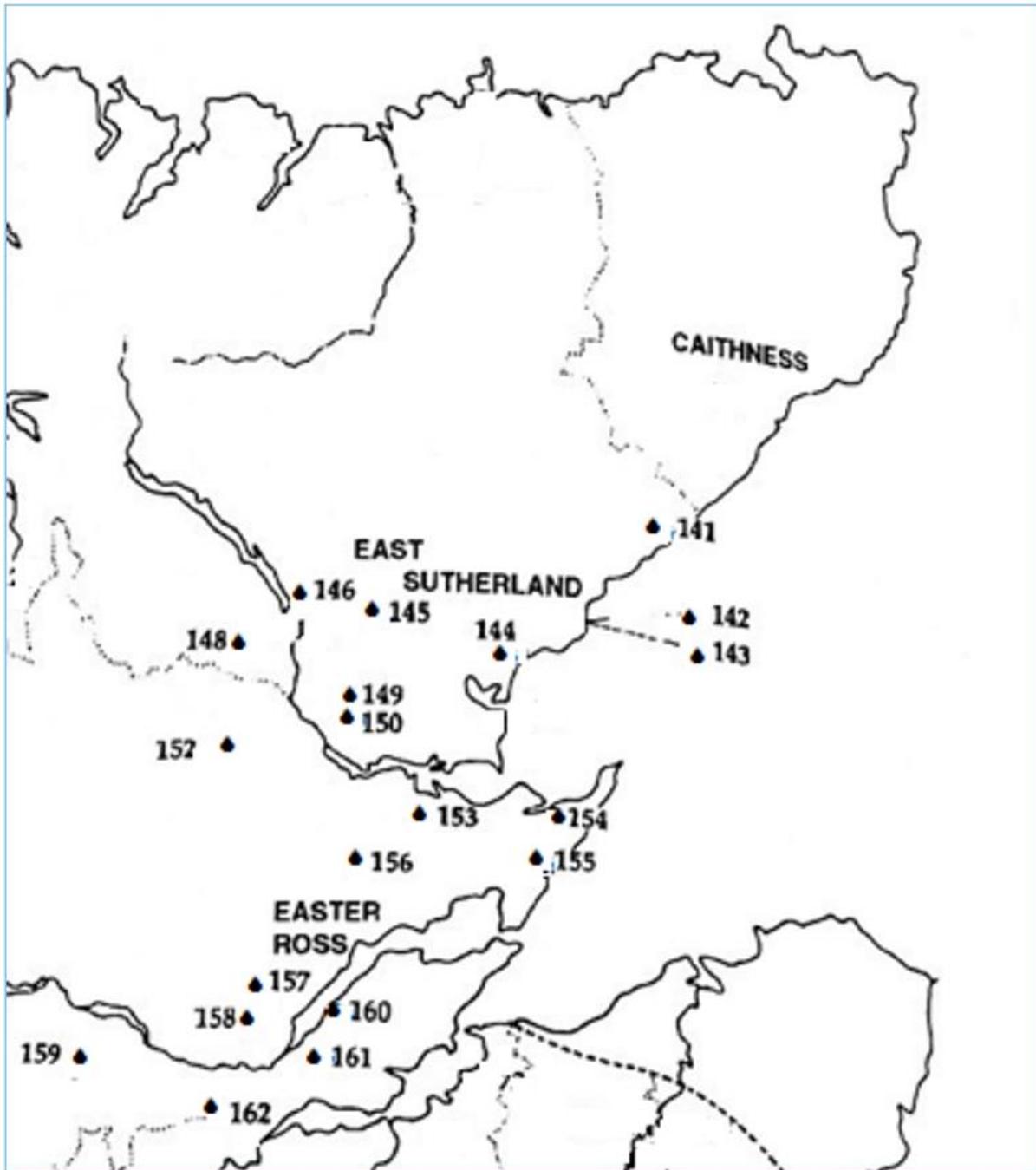


Fig. 6. clach: without genitive singular morphology

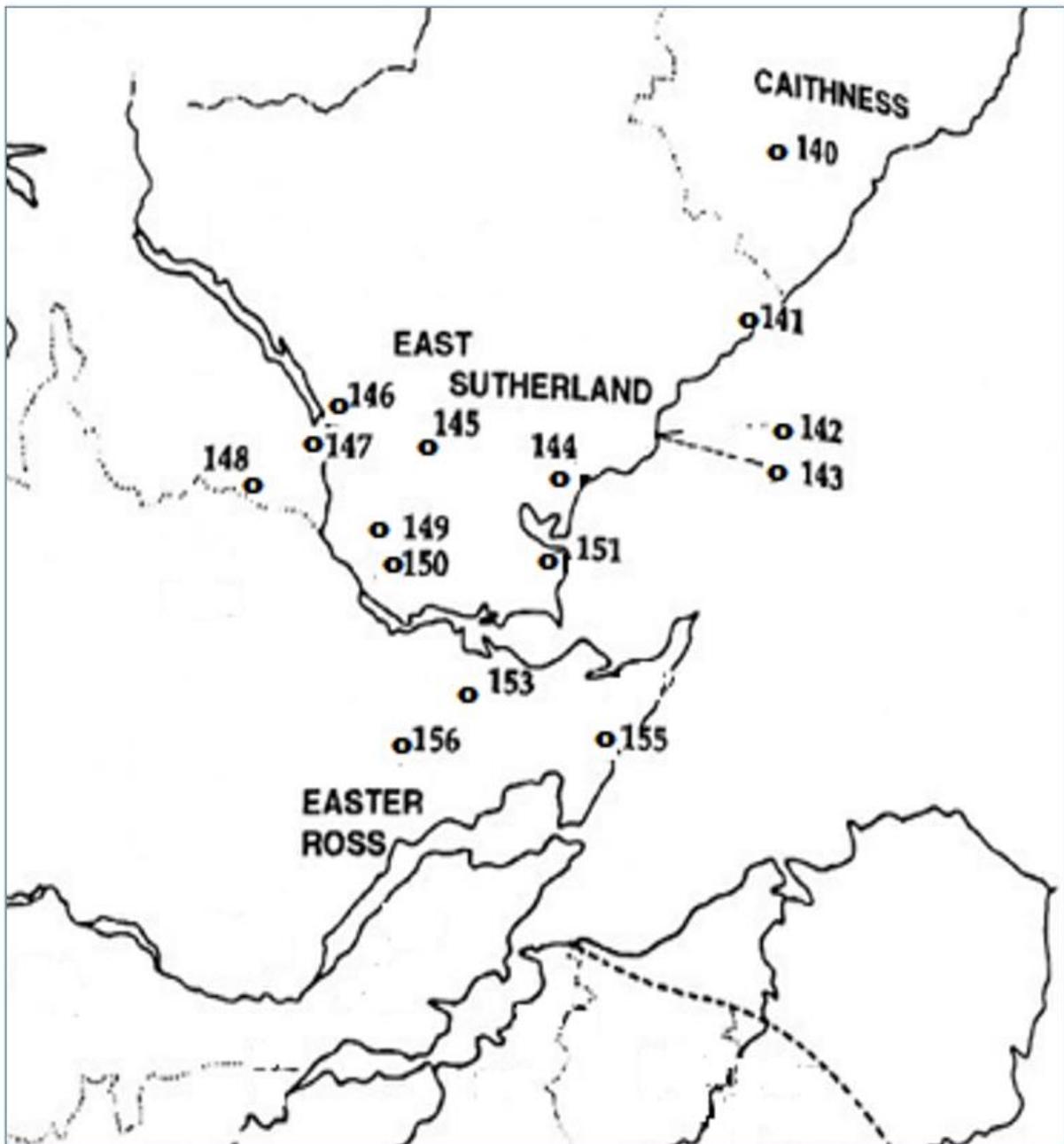


Fig. 7. càirdean: with medial depalatalisation

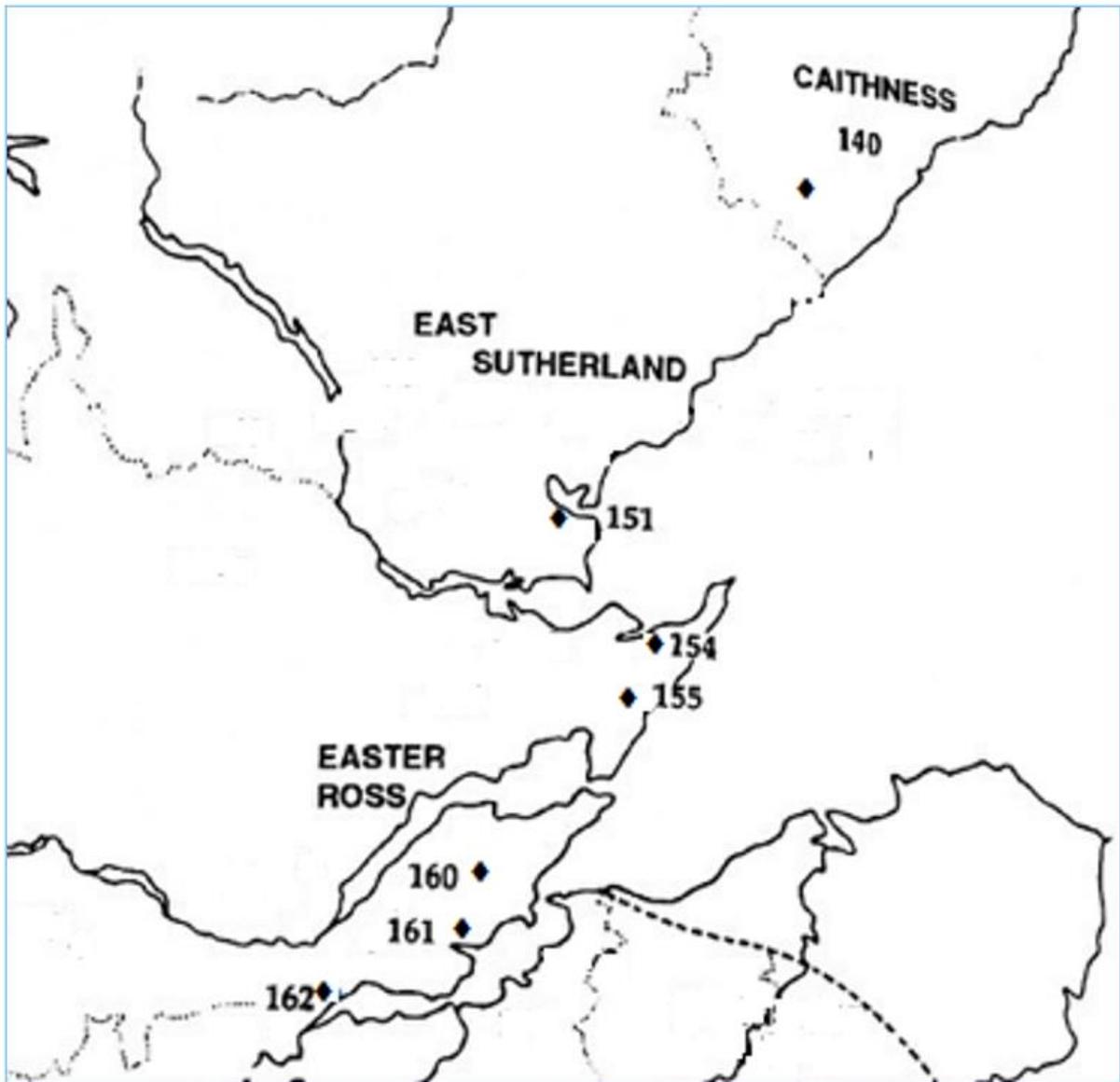


Fig. 8. ceangail: with stressed o-vowel

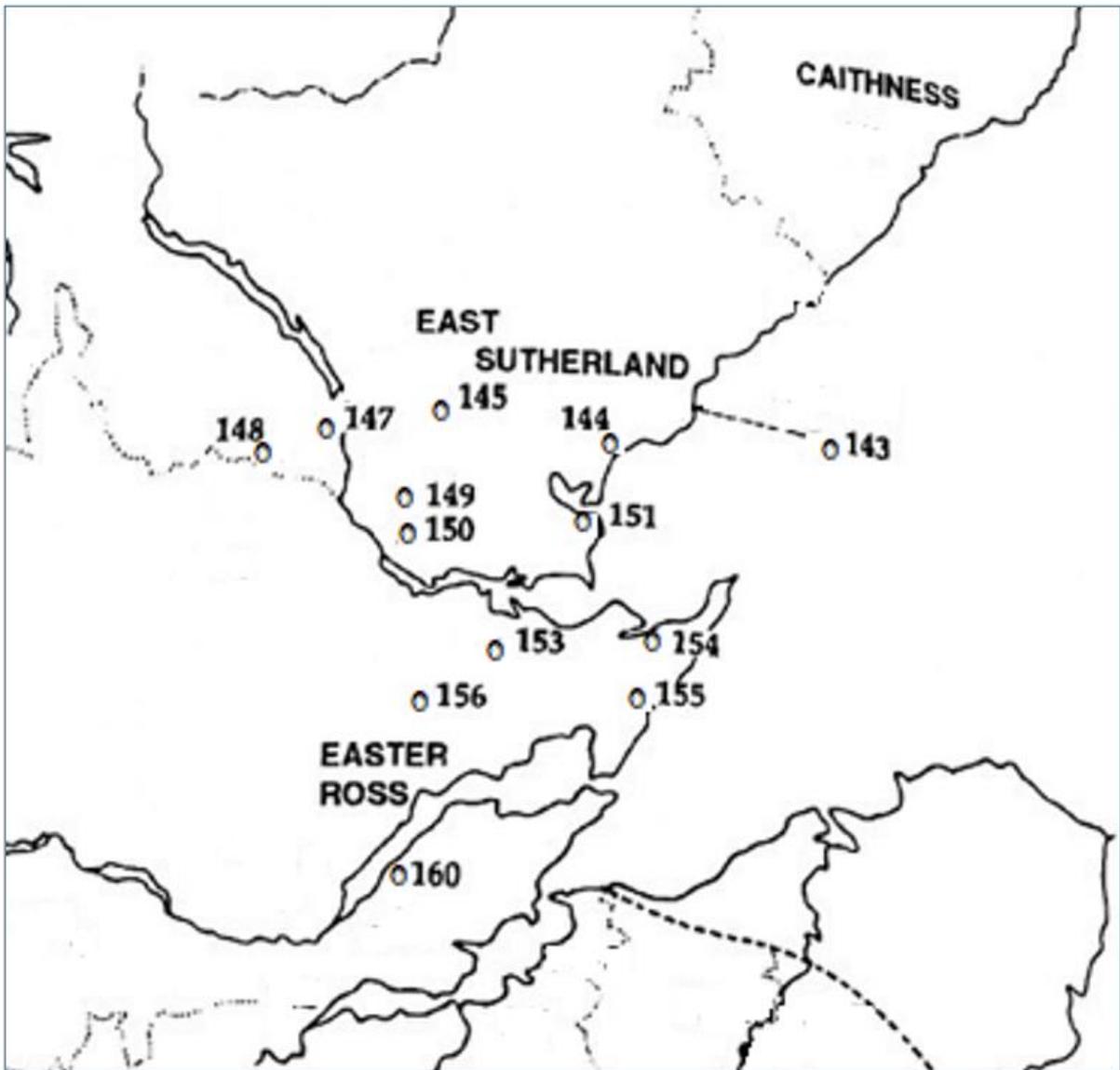


Fig. 9. oirre: with stressed e-vowel

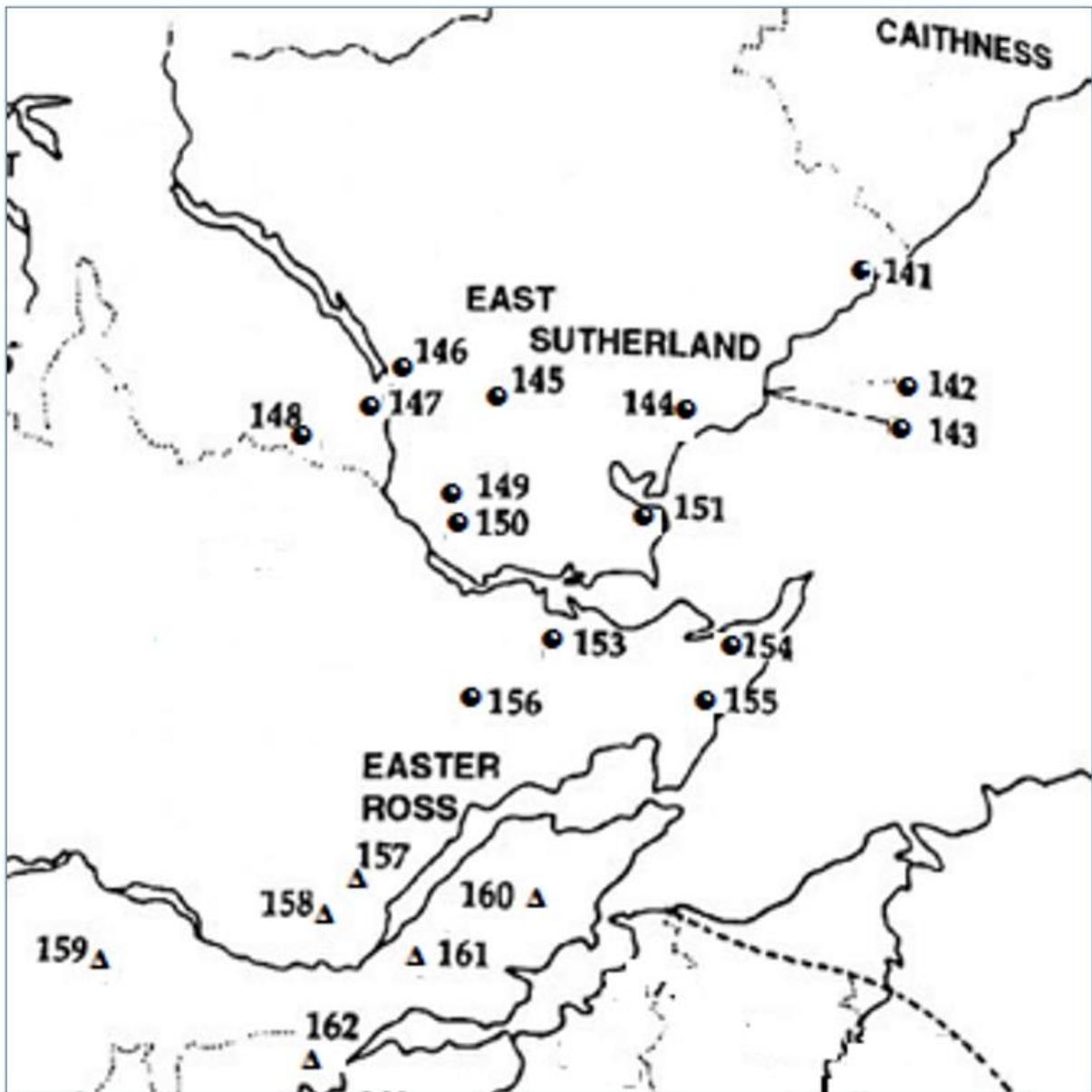


Fig. 10. faiceadh: -u/-əv (●) vs -ək (Δ) termination

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