

3 NETWORKS OF GRANTORS & BENEFICIARIES

The three categories of relationship networks examined in chapter two reflected explicitly made statements in the medieval sources about connections between individuals. The following chapters examine social networks produced from other sorts of connections between medieval persons. Chapter three examines the links between grantors and beneficiaries of charters. Most of the documents in the database record gifts, confirmations, sales, and so forth, of land or other property from one person or institution to another. The enactment of these transactions set in train long-standing relationships. The anthropological and sociological literature on gift-giving and the social relationships engendered in gift-giving is vast. It is not the job of social network analysis to speculate on the exact nature of these relationships, rather to allow us access to these networks in ways which were hitherto impossible. While chapter two's analyses were based on the factoid type 'relationship' in the PoMS database, chapter three's case study is based around the factoid type 'transaction'. The study incorporated only transactions from the following document types: charter, charter/brieve, notification, agreement and settlement, because these for the most part contain evidence about dispositive transactions, like gift-giving. The parameters of the study are as follows:

Table 3.1. Grantor and beneficiary study parameters

Number of documents	4063
Number of transactions	5351
Number of people/ institutions	2225
Average transactions per person	2.4

There are 5351 transactions drawn from 4063 documents involving 2225 persons and institutions, allowing for an average of 2.4 transactions per person (Table 3.1). The vast majority – over 98% – of these documents relevant to the study were charters (Table 3.2). About 55% of the documents were charters issued by or in the name of aristocrats and other laymen, while about a quarter were royal and about a fifth were ecclesiastical, in the sense that they were issued by bishops, abbots, and so forth (Table. 3.3). Together, gifts, concessions and quitclaims made up nearly 60% of all transactions, when confirmations and renewals are added to this the number is over 90% (see Table 3.4).

Table 3.2. Breakdown of document types in study

Charters	3996	98.4%
Charter/ brieves	16	.4%
Notifications	13	.3%
Agreements	26	.6%
Settlements	12	.3%

Table 3.3. Breakdown of documents by H-number

H1/	Royal	1006	24.7%
H2/	Ecclesiastical	793	19.5%
H3/	Private	2225	54.8%
H4/	Agreements, etc.	39	1%

Table 3.4. Breakdown of transactions in study

Gifts and foundations ¹	2248	42%
Confirmations	1106	21%
Renewals	715	13%
Quitclaim & Resignation ²	543	10%
Concessions ³	304	6%
Grants of property (condedo)	131	2%
Sales	72	1%
Obligation	59	1%
Succession	57	1%
Other/ misc.	34	<1%
Institution & ordination of vicarage	31	<1%
Statement ⁴	21	<1%
Inspection	16	<1%
Lease / wadset	14	<1%

¹ Plus one infetment and one gift0agreement)

² And renunciations of claim

³ Including concession (agreements) the following follow same pattern

⁴ Plus acknowledgement and instruction

Figure 3.1. G&B People and Institutions, with gender

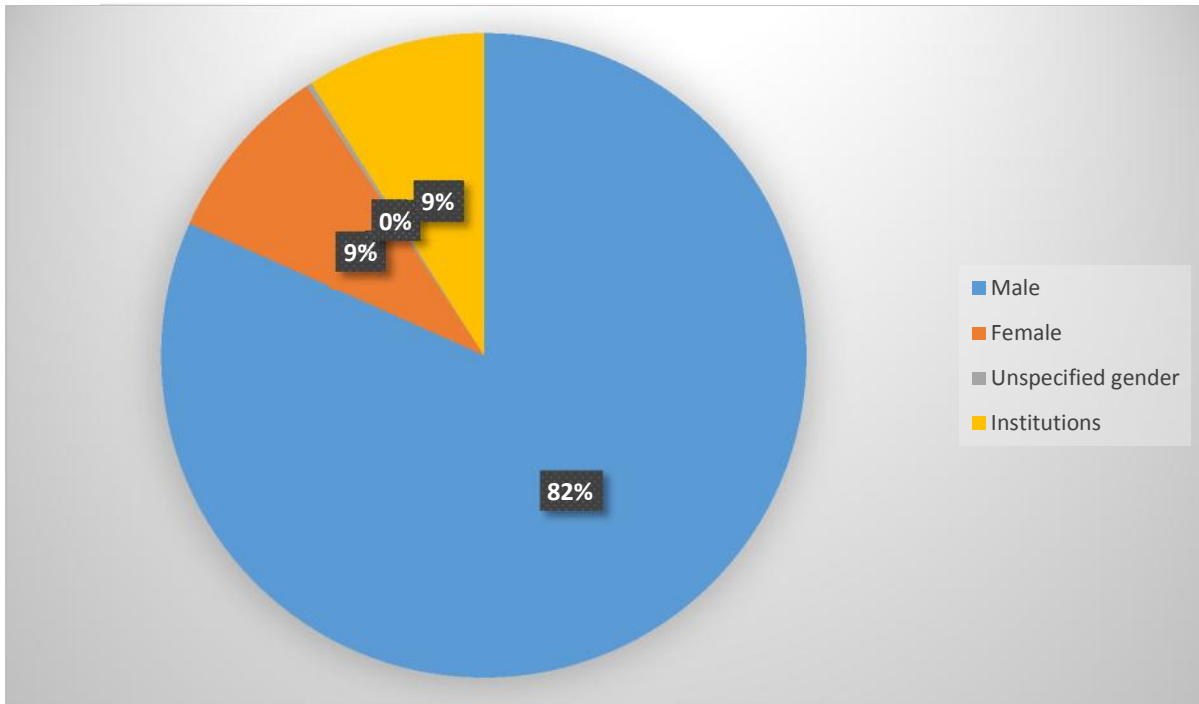
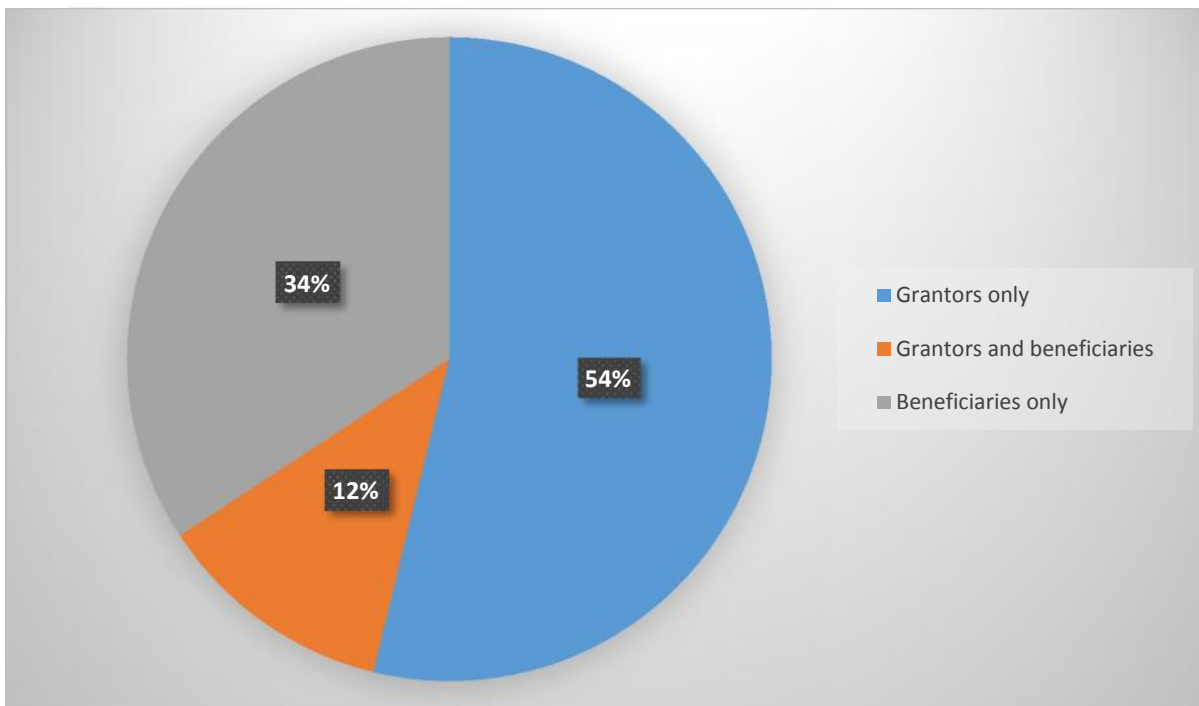


Figure 3.2. Grantors, beneficiaries, and both



There were 2225 individual actors in the study. Of these, 1818 (82%) were male, 201 (9%) were female, a mere 6 were actors of uncertain gender (usually generic heirs), and 200 (9%) were institutions (see Figure 3.1). Most actors were either grantors or beneficiaries (see Figure 3.2), but only 266 (12%) were both grantors and beneficiaries. Not surprisingly there were more grantors only (1197 actors) than beneficiaries only (762 actors). However, the vast majority of actors appear only once or twice. Of all grantors, 911 individuals – 62% - acted only once, and a further 279 actors – 19% - appeared only twice. Among grantors, only 80 agents acted more than five times – a mere 5.5%. This reflects something of the hierarchy of society in the Middle Ages. Of all beneficiaries, 732 (73%) appear only once, with a further 144 (14%) acting as beneficiary only twice. Only 66 (6.6%) of beneficiaries appear as such more than five times, and only 33 (3.3%) were beneficiaries more than ten times. These statistics explain why this network is not very dense – many grantors are connected to a single beneficiary, usually a religious house, while only the most active grantors are linked to a large number of beneficiaries.

The grantor-and-beneficiary studies are also directed networks, which means that each tie between two nodes has directionality, indicating whether a person was on the giving end or the receiving end of the transaction. As Table 3.5 highlights, it is useful to separate the overall degree number into 'in-degree', reflecting how many times that person was a beneficiary, and 'out-degree', reflecting how many times that person was a grantor. For example, King William had the highest out-degree, with 170 acts of granting, while he was only the beneficiary only once. The five most active grantors were all kings, while most of the other 'top grantors' were bishops, earls, and other lay magnates and church prelates.

Table 3.5. Top Grantors: out-degree of 10 and over

Id	Name	Gender	In-Degree	Out-degree	Degree	Betweenness Centrality
1	William I, king of Scots (d.1214)	M	1	170	171	374
58	Alexander II, king of Scots (d.1249)	M	1	156	157	326.1667
360	Alexander III, king of Scots (d.1286)	M	1	67	68	232
74	Malcolm IV, king of Scots (d.1165)	M	0	50	50	0
130	David I, king of Scots (d.1153)	M	0	37	37	0
788	Andrew Murray, bishop of Moray (d.1242)	M	7	36	43	1438.667
40	William Malveisin, bishop of St Andrews (d.1238)	M	6	28	34	10960.4
2087	Mael Domnaig, earl of Lennox (d. by 1265)	M	3	26	29	404
432	David of Bernham, bishop of St Andrews (d.125	M	0	22	22	0
90	Henry, earl of Northumberland and Huntingdon (d.1152)	M	0	21	21	0
2046	Roger de Quincy, earl of Winchester (d.1264)	M	2	18	20	4366.35
16	William Comyn, earl of Buchan (d.1233)	M	2	17	19	33.5
451	Alan, lord of Galloway (d.1234)	M	2	17	19	3620.667
817	Roger, bishop of St Andrews (d.1202)	M	3	17	20	111.8667
134	Richard, bishop of St Andrews (d.1178)	M	0	16	16	0
858	Walter of St Albans, bishop of Glasgow (d.1232)	M	13	16	29	4234.6
82	Kelso Abbey	I	186	15	201	25565
2220	Ralph of Lamley, bishop of Aberdeen (d.1247)	M	2	15	17	31.36667
3786	Henry of Norham, prior of St Andrews (fl.x1228-1236)	M	0	15	15	0
148	Robert, bishop of St Andrews (d.1159)	M	0	14	14	0
142	David, earl of Huntingdon (d.1219)	M	2	13	15	137
400	Alan Stewart, son of Walter (d.1204)	M	0	13	13	0
112	Richard de Moreville (d.1189 or 1190)	M	0	12	12	0
782	Malcolm (I), earl of Fife (d.1229)	M	5	12	17	3351.833
2081	John de Vaux, knight (fl.1213-55)	M	0	12	12	0
745	Jocelin, bishop of Glasgow (d.1199)	M	3	11	14	230
751	Bertram, prior of Durham (d.1212/13)	M	5	11	16	220.9333
1378	Walter Stewart (II), son of Alan (d.1241)	M	3	11	14	2622.383
1382	David of Quixwood	M	0	11	11	0
2248	Malise (II), earl of Strathearn (d.1271)	M	0	11	11	0
444	Patrick (I), earl of Dunbar (d.1232)	M	1	10	11	3
453	Roland (Lachlan), lord of Galloway (d.1200)	M	0	10	10	0
456	Gamelin, bishop of St Andrews (d.1271)	M	0	10	10	0
806	Saer de Quincy, earl of Winchester (d.1219)	M	0	10	10	0
1453	James Stewart (d.1309)	M	0	10	10	0
1981	Alexander Comyn, earl of Buchan (d.1289)	M	1	10	11	37
12934	William de Lizars, son of David, ld. Gorton	M	0	10	10	0

The corresponding Gephi visualization on the PoMS website is called Grantors and Beneficiaries, adjusted to grantors (<http://db.poms.ac.uk/sna/all/46/>). This means that the size of the nodes and name labels reflects the out-degree, or how many times the person acted as grantor. Figure 3.3 gives a good general sense of the structure of the network, with minor actors fanning out like rays around the major grantors and beneficiaries. Figure 3.4 gives a close-up of this sociogram, with the top grantors, Kings William I and Alexander II, clearly visible. The nodes in pink represent institutions, giving a clear sense of the importance of monasteries and other church institutions in this study. Figure 3.5 highlights the grantor-and-beneficiary links of the most prolific grantor, King William I, demonstrating the extent of his connections across the whole network.

Figure 3.3. Gephi sociogram, Grantors and Beneficiaries, adjusted to grantors.



Figure 3.4. Grantors and Beneficiaries, adjusted to grantors: close-up

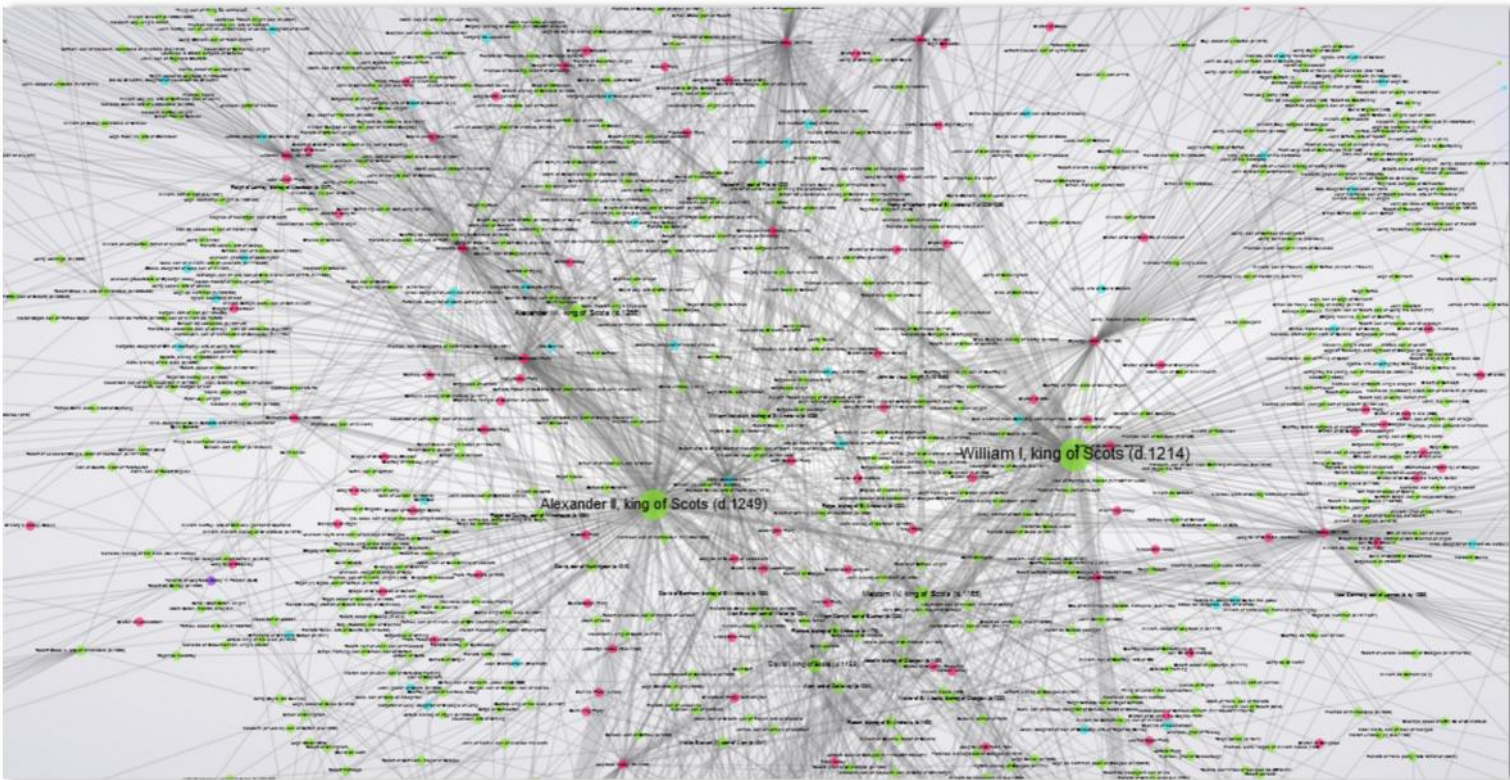
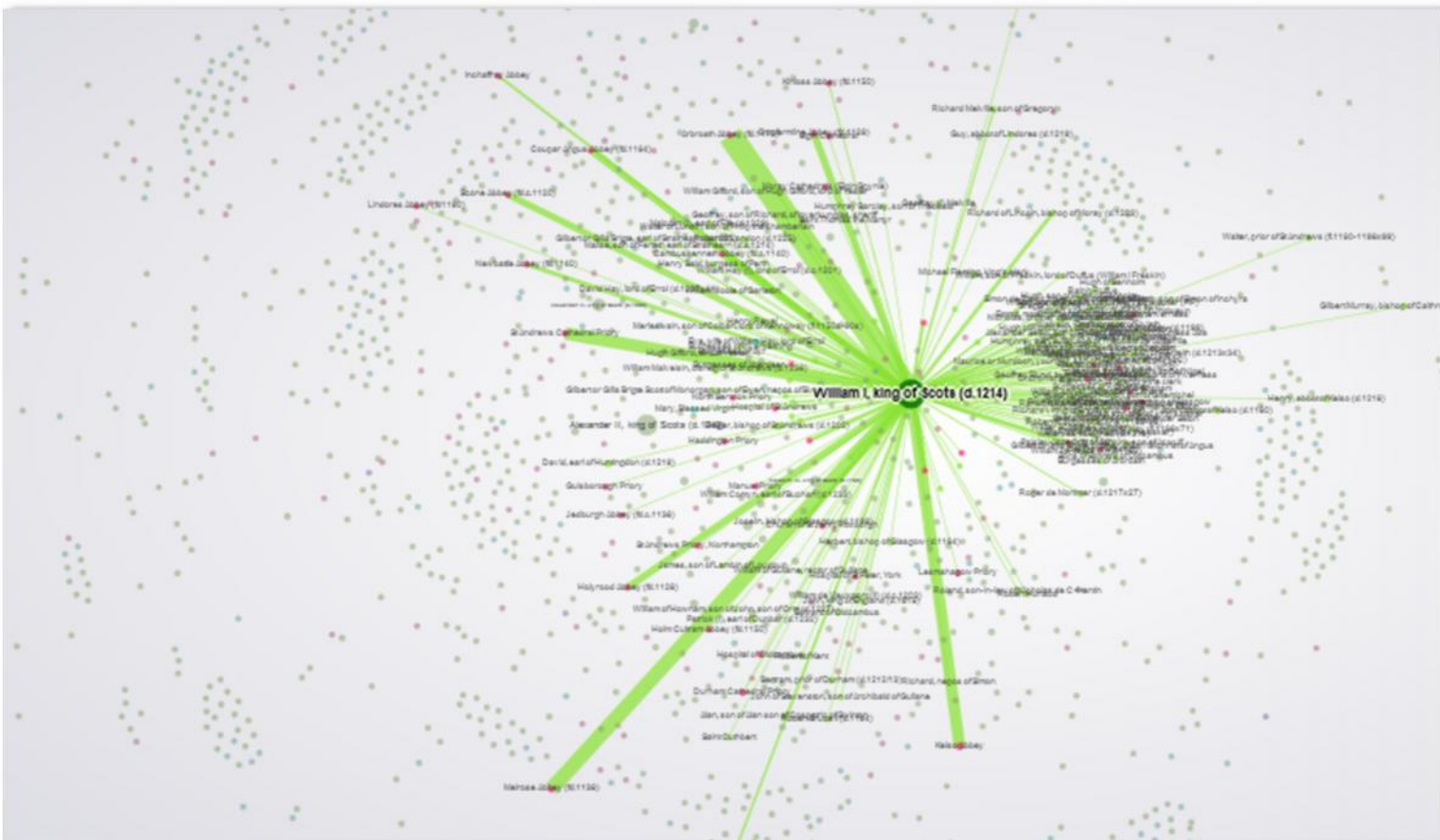


Figure 3.5. Grantor-beneficiary connections of William I, king of Scots (d. 1214)



The most commonly-attributed beneficiaries are listed in Table 3.6. Unsurprisingly, these are mostly monasteries, who benefited from the munificence of a wide range of individuals in society and were also better at recording and preserving written records of these gifts than other groups in society. The top institutions were Kelso, Melrose, Dryburgh and Arbroath abbeys, as well as Coldingham and St Andrews Cathedral priories. The Blessed Virgin Mary appears as the fourth most active beneficiary, with an in-degree of 135, because donors were keen to invoke her in terms of prayers for their souls that were a condition of these gifts. Similarly, Saint Cuthbert appears down the list, with an in-degree of 50, and Saints Kentigern, Aebbe, and Andrew are also listed in the table (saints are coloured in blue). The only laymen to appear in the list of top beneficiaries were Nicholas Hay, lord of Errol, and David Graham, lord of Lovat, both of whom were active in the mid-late thirteenth century.

Table 3.6. Top Beneficiaries: in-degree of 10 and over

Id	Label	Gender	In-Degree	Out-Degree	Degree	Betweenness Centrality	Eigenvector Centrality
82	Kelso Abbey	I	186	15	201	25565	1
75	Melrose Abbey (fd.1136)	I	158	5	163	2592.666667	0.669233008
710	Mary, Blessed Virgin	F	135	0	135	0	0.65238806
128	Dryburgh Abbey (fd.1150)	I	119	1	120	566	0.565961348
77	Coldingham Priory (fd.1139)	I	116	2	118	781	0.416634373
41	Arbroath Abbey (fd.1178)	I	102	2	104	3600.166667	0.354449239
131	St Andrews Cathedral Priory	I	101	5	106	2089.833333	0.39324945
127	Newbattle Abbey (fd.1140)	I	85	1	86	67.5	0.300300059
278	Paisley Abbey (fd.1169)	I	84	0	84	0	0.350357275
7	Dunfermline Abbey (fd.1128)	I	71	5	76	2931.233333	0.253247872
1039	Lindores Abbey (fd.1190)	I	69	1	70	267.8333333	0.27949786
216	Coupar Angus Abbey (fd.1164)	I	67	0	67	0	0.223060902
582	Saint Cuthbert	M	50	0	50	0	0.251136092
87	Holyrood Abbey (fd.1128)	I	49	0	49	0	0.237412622
29	Scone Abbey (fd.c.1120)	I	43	1	44	233.8333333	0.251662464
1115	Inchaffray Abbey	I	42	0	42	0	0.150221788
250	Cambuskenneth Abbey (fd.c.1140)	I	38	0	38	0	0.169563161
2254	Coldstream Priory	I	37	0	37	0	0.091859933
1194	Holm Cultram Abbey (fd.1150)	I	35	1	36	39	0.162234735
186	Glasgow Cathedral	I	35	0	35	0	0.221231837
189	Durham Cathedral Priory	I	33	8	41	13341.93333	0.32611186
208	Hospital of Soutra	I	33	0	33	0	0.194128881
914	Saint Kentigern	M	24	0	24	0	0.185028513
4506	Saint Abbe	F	22	0	22	0	0.061114506
1957	Balmerino Abbey (fd.1229)	I	21	0	21	0	0.151314557

1912	Inchcolm Abbey	I	19	0	19	0	0.071729875
667	North Berwick Priory	I	17	0	17	0	0.069536547
354	May Priory	I	16	2	18	93	0.046635142
138	Jedburgh Abbey (fd.c.1138)	I	16	0	16	0	0.047104657
858	Walter of St Albans, bishop of Glasgow (d.1232)	M	13	16	29	4234.6	0.291330398
1101	Kinloss Abbey (fd.1150)	I	13	0	13	0	0.051566116
4047	Monymusk Priory	I	12	0	12	0	0.065979769
2234	Nicholas Hay (I), lord of Errol (son of Gilbert) (d.1305/6)	M	11	1	12	8.5	0.026783341
2005	David Graham, lord of Lovat (d.c.1272)	M	10	1	11	1374.5	0.037094436
1457	Furness Abbey	I	10	0	10	0	0.053911859
247	Saint Andrew	M	10	0	10	0	0.04566638
1214	Hospital of St Peter, York	I	10	0	10	0	0.032996162
1647	St Bees Priory	I	10	0	10	0	0.027539642

The corresponding Gephi visualization on the PoMS website is called Grantors and Beneficiaries, adjusted to beneficiaries (<http://db.poms.ac.uk/sna/all/41/>). This means that the size of the nodes and name labels reflects the in-degree, or how many times the person acted as beneficiary. The key role of a few top beneficiaries as 'spokes in the wheel' can be seen from the overview of the Gephi sociogram in Figure 3.6, while the particular roles of Kelso and Melrose abbeys is visible in Figure 3.7.

Figure 3.6. Gephi sociogram, Grantors and Beneficiaries, adjusted to beneficiaries

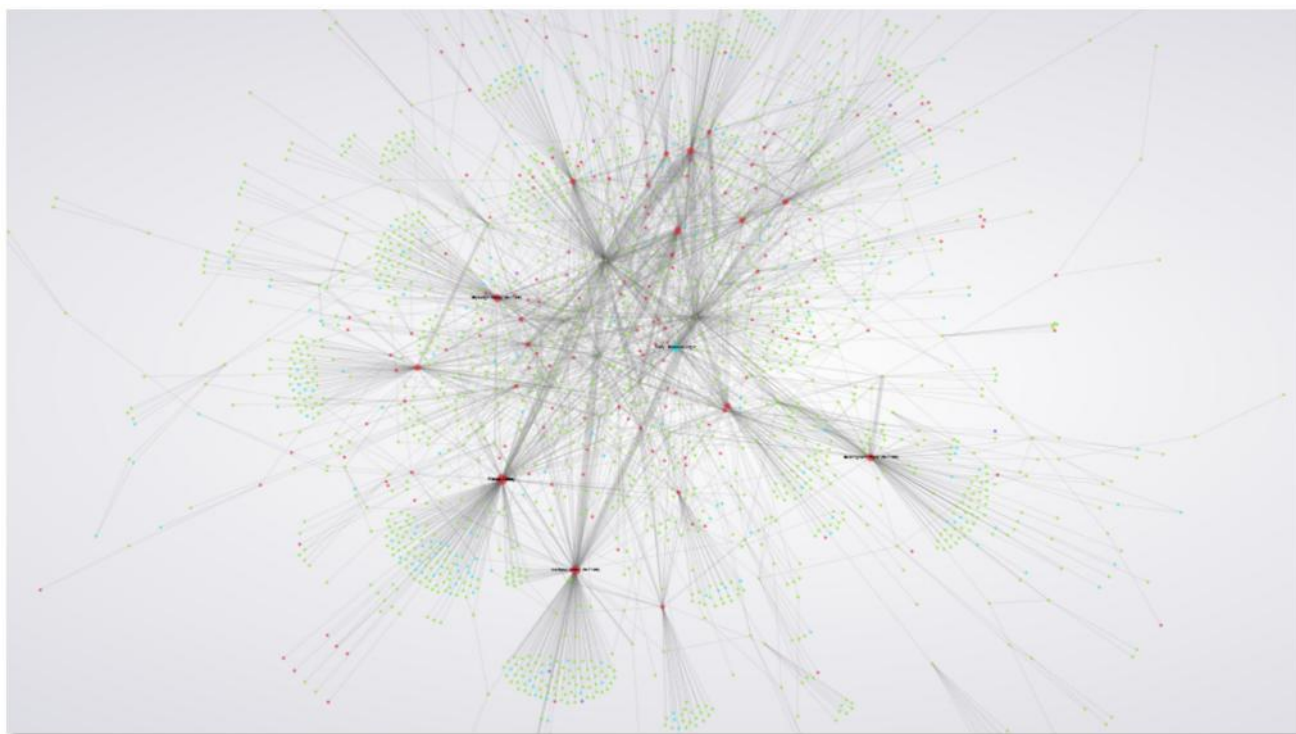
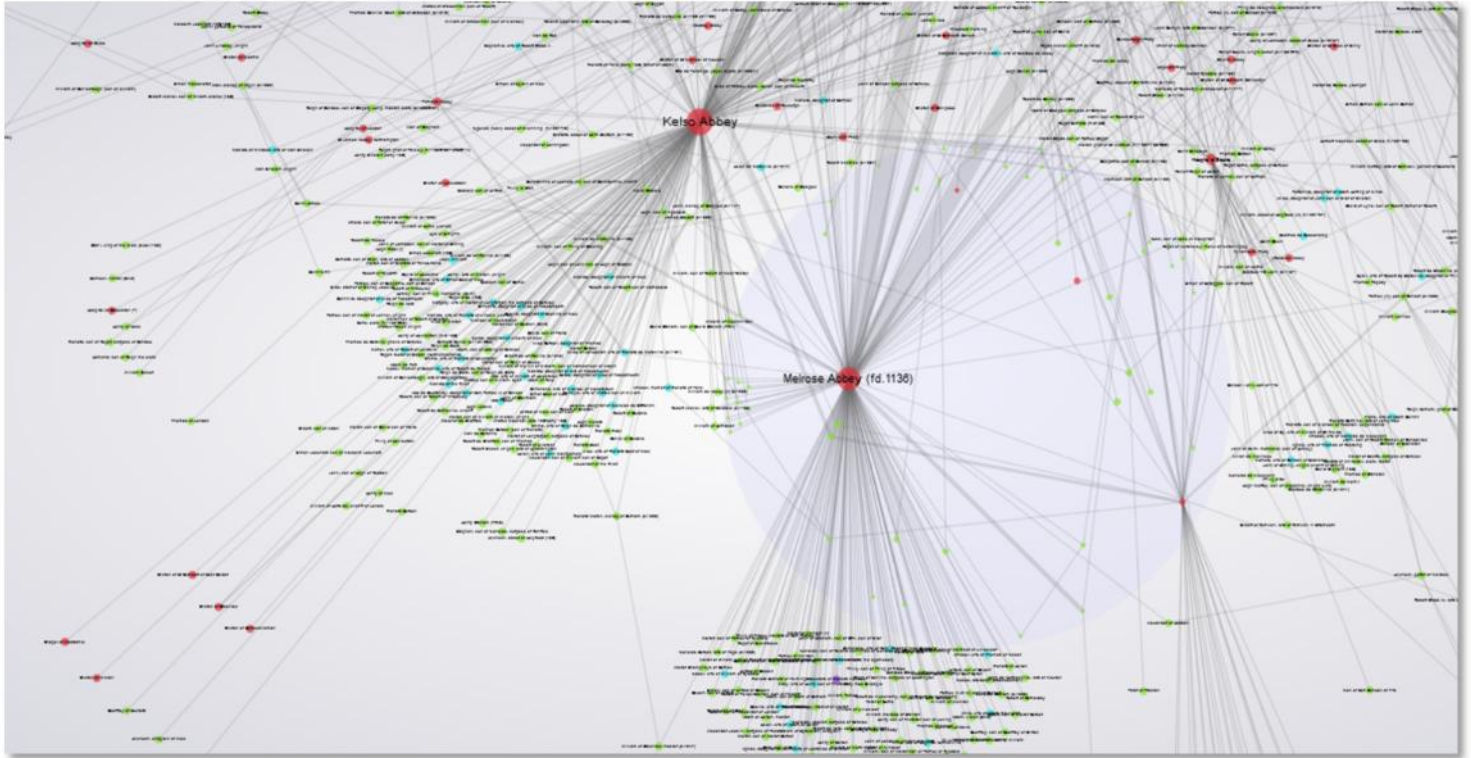


Figure 3.7. Grantors and Beneficiaries, adjusted to beneficiaries: close-up



Illustrations of some of the connections of specific actors follow (Figures 3.8, 3.9, 3.10) and readers can explore these in greater detail online. The thickness of the edges reflects the number of transactions there were between two actors, and the colour of the edges reflects the gender of the other person or institution (alter rather than ego). The patterns of the connections of both the top grantors and top beneficiaries are remarkably similar, like rays emanating out (or in as it were) from the node of ego. This reflects the fact that in this kind of network, it is ego which ties the network together. Given only the evidence of granting and receiving, removing ego (for example, the monastery receiving the gifts) removes the *raison d'être* of the network and the network would cease to exist. In the real world, of course, there would be other sorts of social relationships and contexts linking together the spokes of the wheel, as it were; nevertheless, these sociograms illustrate starkly the potential for monasteries to act as focal points, one in which other social relationships were likely to be fostered.

Figure 3.8. Grantor-beneficiary connections of Kelso Abbey



Figure 3.9. Grantor-beneficiary connections of St Andrews Cathedral Priory

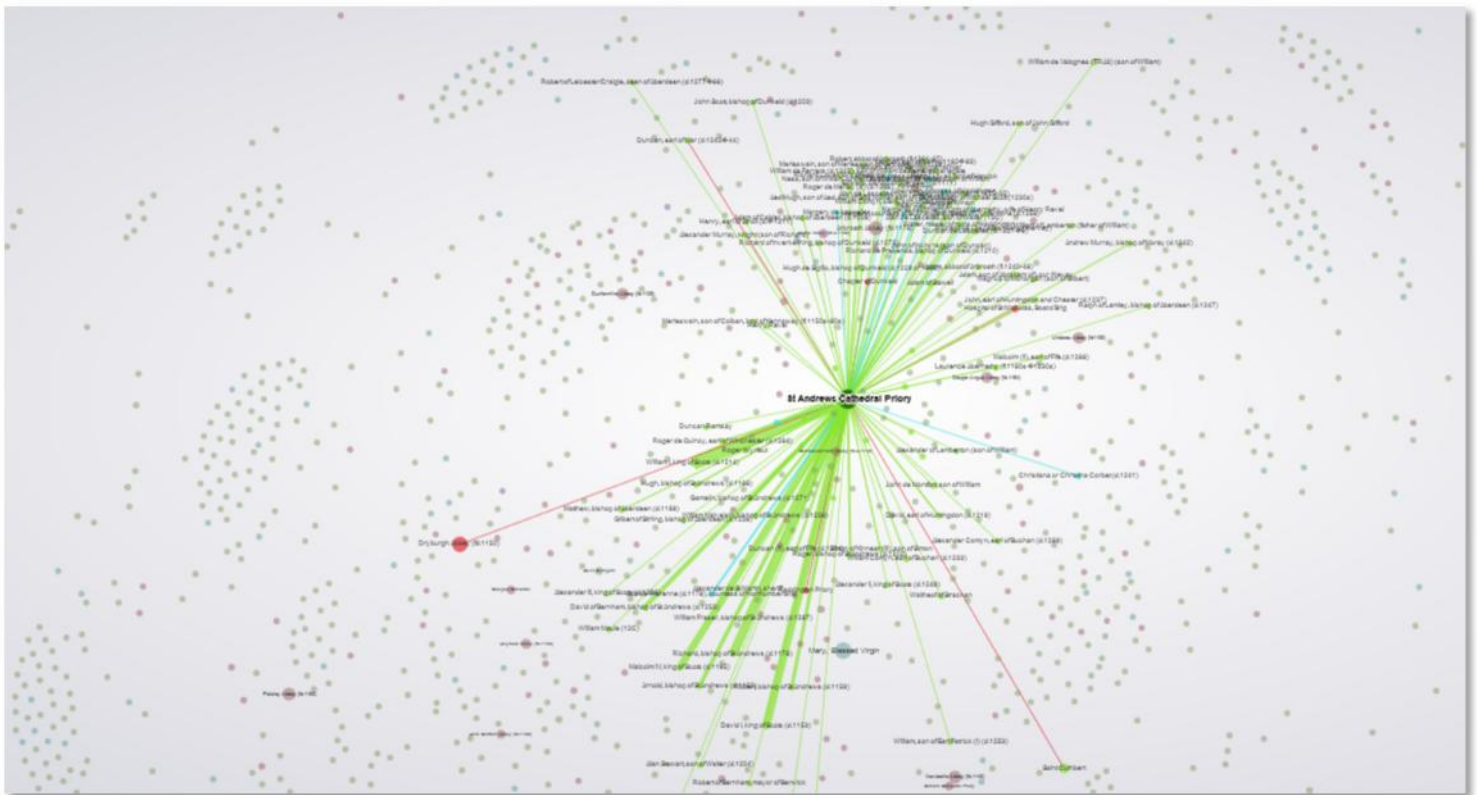
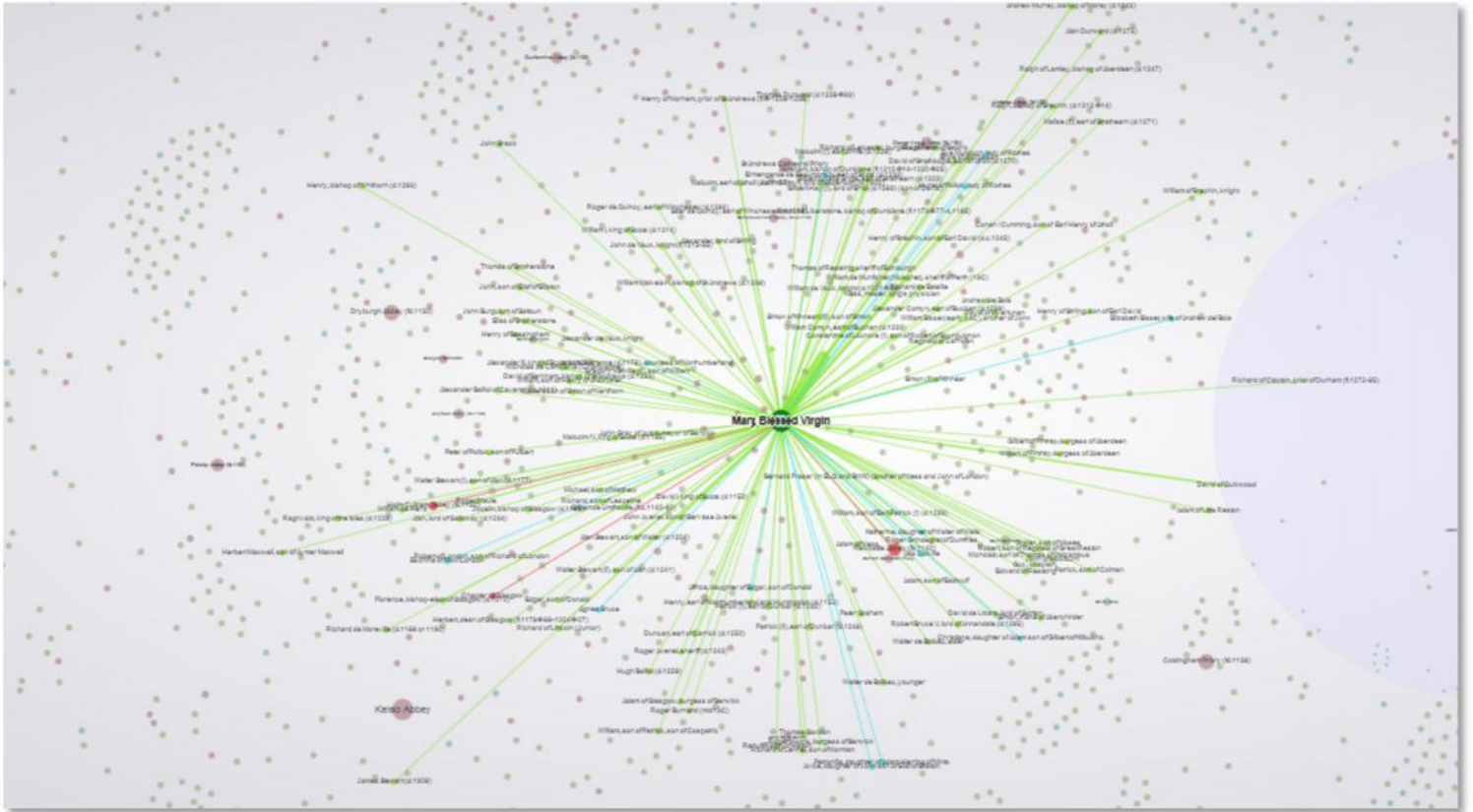


Figure 3.9. The Blessed Virgin Mary



The sociograms produced in the Gephi program allow for some additional features which the web-based visualizations are not able to represent. One of these is the directionality of the ties between actors. The directionality reflects the nature of the transaction, running from grantor to beneficiary. This close-up of Saint Cuthbert shows how the directionality is represented by means of arrows (figure 3.10). The edge-enhanced image of grantors and beneficiaries in Figure 3.11 demonstrates the directionality of transactions between kings and religious houses.

Figure 3.10. Saint Cuthbert as beneficiary, with arrows

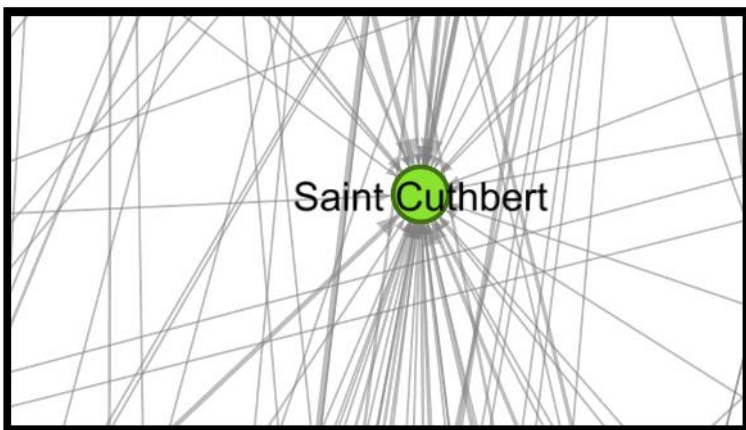
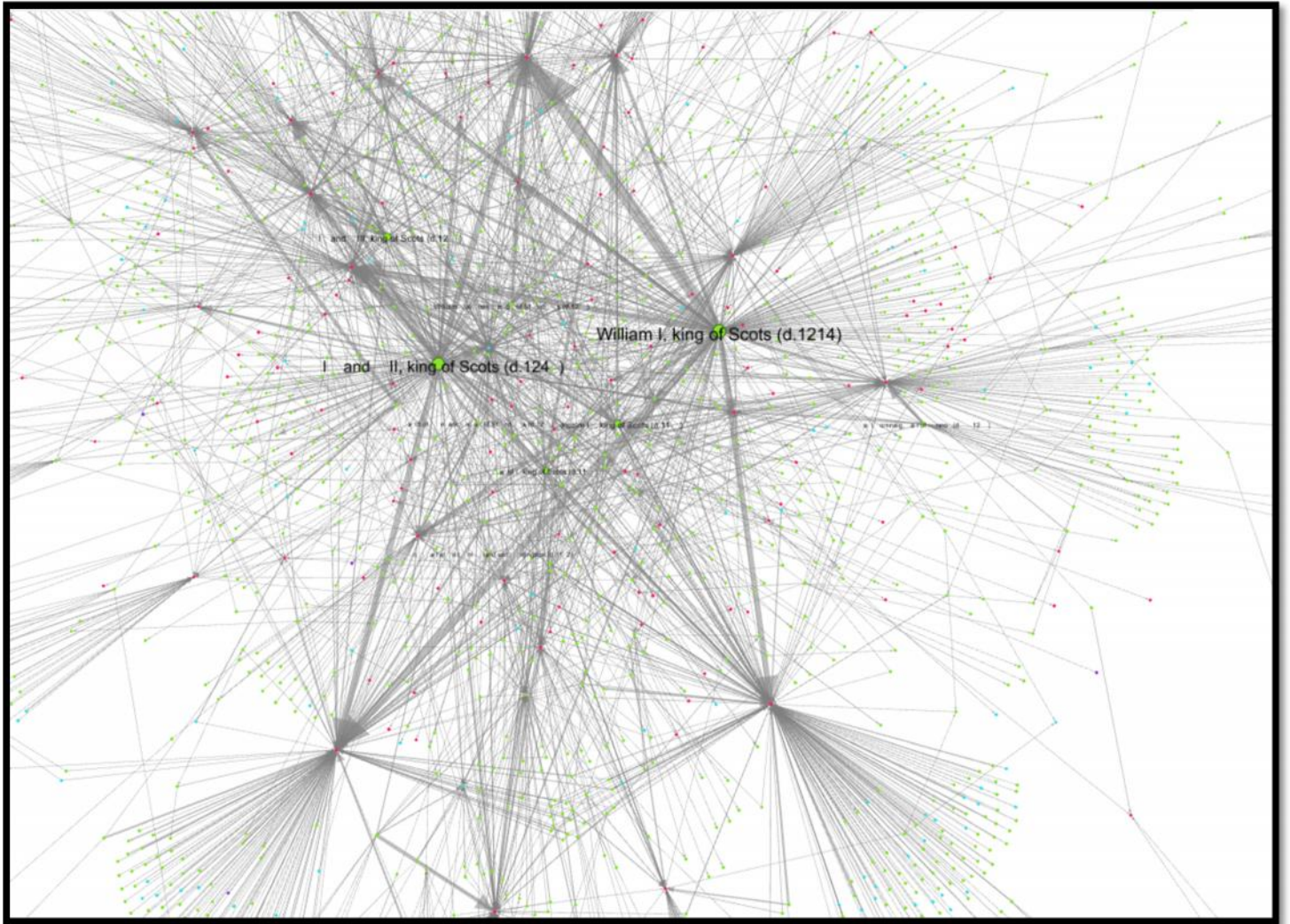


Figure 3.11. Edge-enhanced Gephi sociogram, with arrows



It also possible to use Gephi to examine the nature of each implied relationship between the grantor and beneficiary. This is reflected in the 'weight' of the edge or tie between two nodes. This weight is what determines the thickness of the edges in Figure 3.11 above. The number assigned to the weight is that of the number of transactions shared between Actor 1 and actor 2. Table 3.7 lays out these relationships with 15 or more transactions. These do not distinguish in terms of the directionality, or whether actor 1 or actor 2 were grantor or beneficiary. As it happens, based on the nature of the evidence, however, the following relationships are almost entirely those in which actor one was chiefly a grantor and actor two was chiefly a beneficiary. These implied relationships are subtly different from the tables we have already seen noting the most active grantors and beneficiaries in an unqualified sense. While Kelso Abbey was the top beneficiary in sheer numbers, it comes rather farther down this list, which gives us a sense of the closeness of the bonds formed by individuals and institutions.

Table 3.7. Most productive grantor-beneficiary relationships.

Actor 1	Actor 2	Number of connections
William I, king of Scots (d. 1214)	Arbroath Abbey	53
William I, king of Scots (d. 1214)	Melrose Abbey	30
Alexander II, king of Scots (d. 1249)	Melrose Abbey	27
William I, king of Scots (d. 1214)	St Andrews Cathedral Priory	26
Alexander II, king of Scots (d. 1249)	Arbroath Abbey	26
William I, king of Scots (d. 1214)	Kelso Abbey	24
Alexander II, king of Scots (d. 1249)	Blessed Virgin Mary	23
Gilbert or Gilla Brigitte, earl of Strathearn (d. 1223)	Inchaffray Abbey	20
Richard, bishop of St Andrews (d. 1178)	St Andrews Cathedral Priory	18
Alexander II, king of Scots (d. 1249)	Scone Abbey	17
Alexander II, king of Scots (d. 1249)	Newbattle Abbey	17
David I, king of Scots (d. 1153)	St Andrews Cathedral Priory	16
David, earl of Huntingdon (d. 1219)	Lindores Abbey	16
David of Quixwood	Coldingham Priory	16
William I, king of Scots (d. 1214)	Dunfermline Abbey	15
William I, king of Scots (d. 1214)	Holyrood Abbey	15
William I, king of Scots (d. 1214)	Cambuskenneth Abbey	15
William Malveisin, bishop of St Andrews (d. 1238)	Arbroath Abbey	15

King William I appears seven times in this list of (implicit) relationships yielding fifteen or more transactions as a grantor or beneficiary, demonstrating his links with the abbeys of Arbroath, Melrose, Kelso, Dunfermline, Holyrood and Cambuskenneth. Similarly, his son King Alexander II appears five times, showing his close relationships with the Cistercian abbeys of Melrose and Newbattle, his devotion to the Blessed Virgin Mary, and links with Scone abbey. The most intense relationships between grantors and beneficiaries were those formed between the founder of a religious house and the monastery. Thus, there were 53 transactions between King William and Arbroath Abbey, 20 transactions between Gilbert earl of Strathearn and Inchaffray Abbey, and 16 between David earl of Huntingdon and Lindores Abbey. The sixteen connections between Coldingham Abbey and David of Quixwood are a reflection of the unique richness of that house's documentary archive.

Figure 3.14. Edges representing ten transactions or more

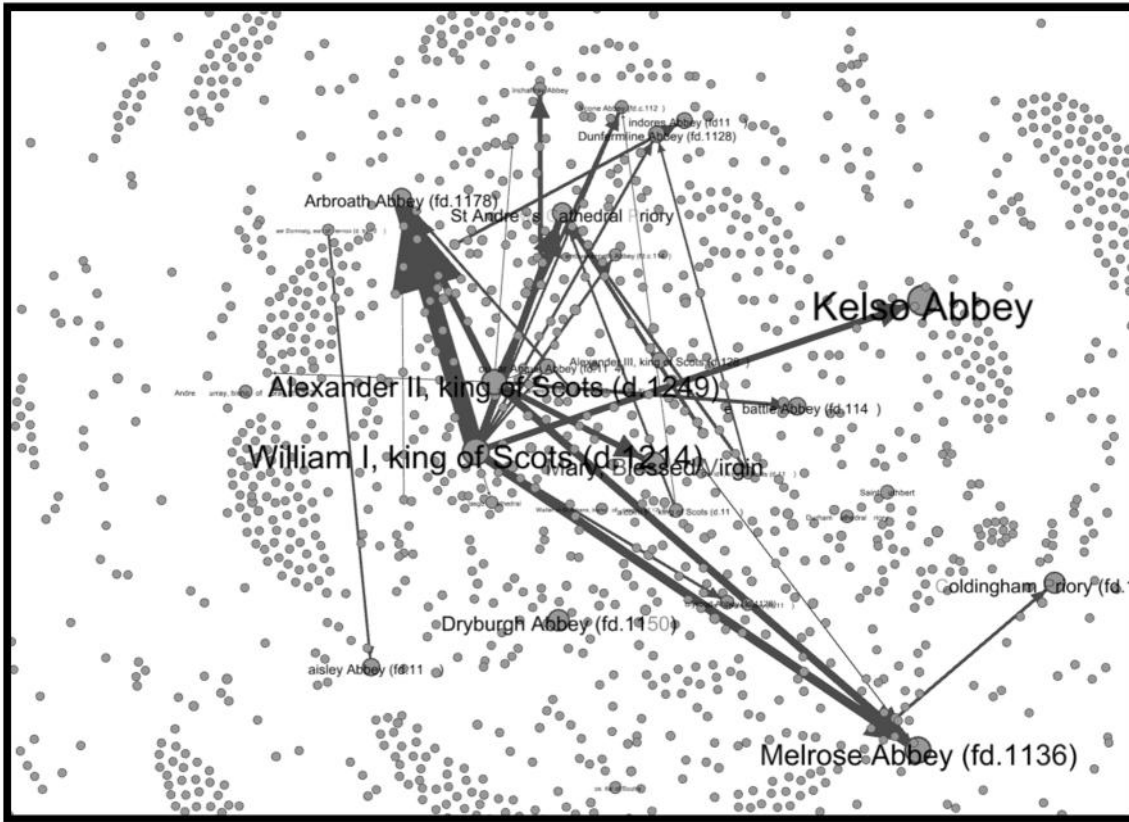


Figure 3.15. Edges representing fifteen transactions or more

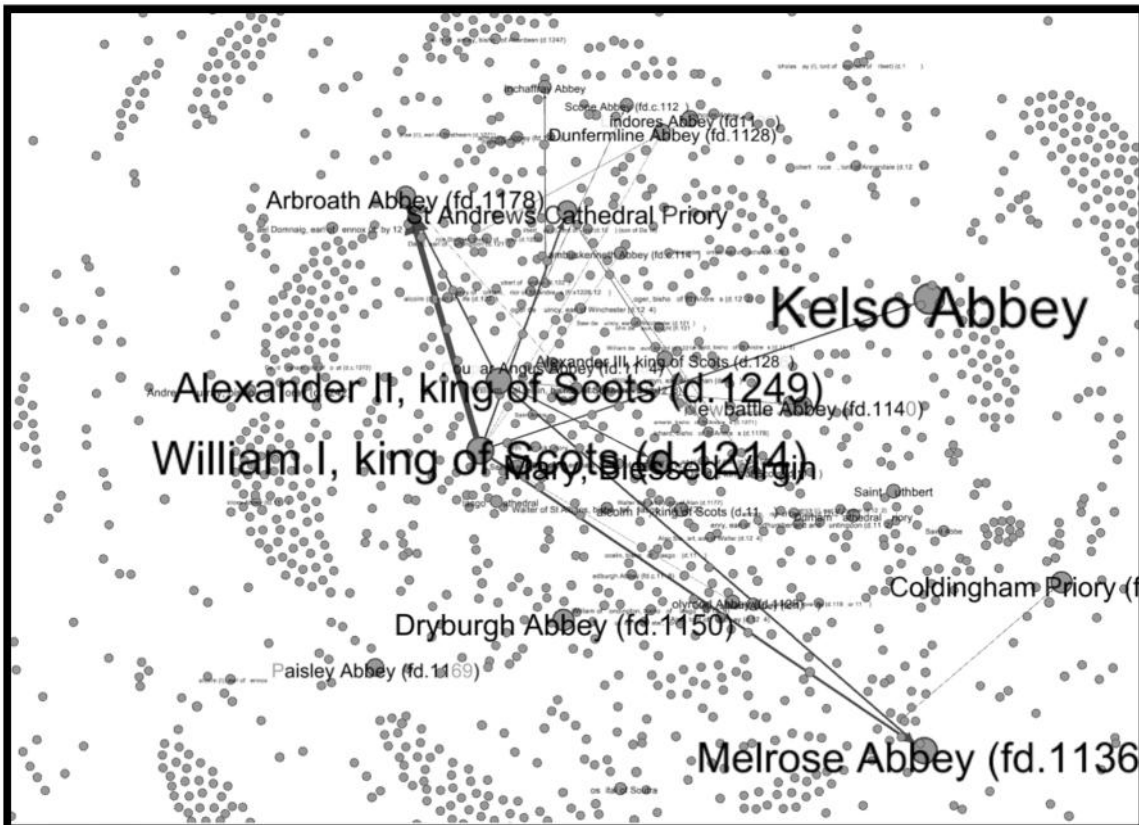


Figure 3.16. Edges representing twenty transactions or more

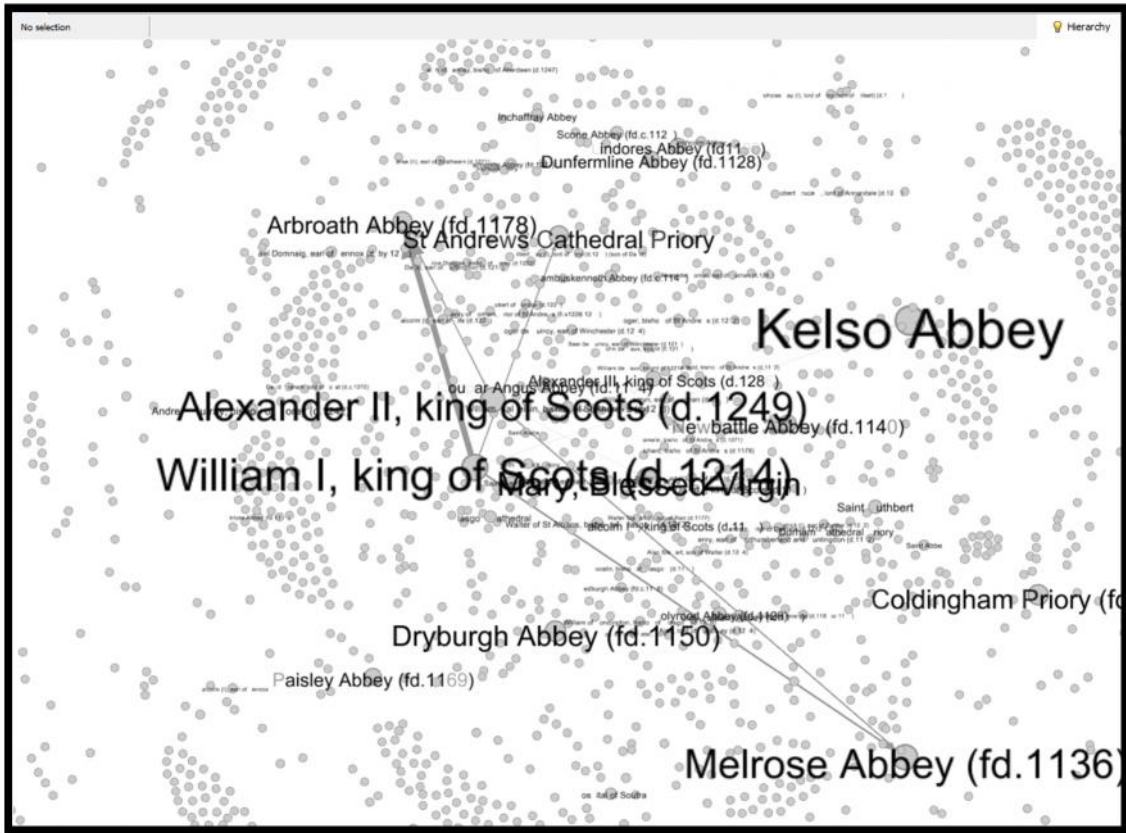


Figure 3.17. Edges representing twenty-five transactions or more

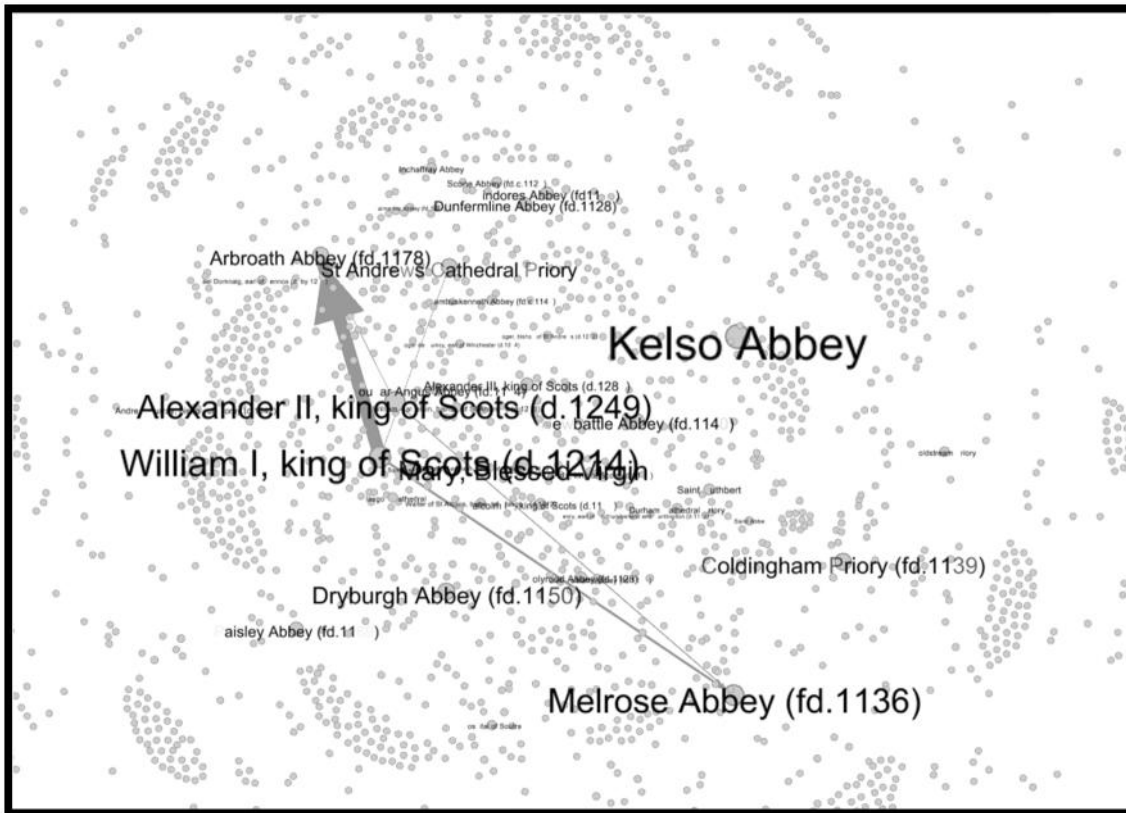


Figure 3.12 through 3.17 show the Grantor-Beneficiary network in Gephi, raising the threshold progressively in terms of displaying the edge weight. In other words, Figure 3.12 shows all the edges, Figure 3.13 shows edges with a weight of five or more, Figure 3.14 shows edges with a weight of ten or more, and so on. These images highlight the points made relevant to Table 3.7