

JoSS Article: A relational hyperlink analysis of an online social movement: Annex

Annex for [A relational hyperlink analysis of an online social movement](#)

Table A1: Attributes of the 144 seed sites, 2006

Id	URL	L	S	R	In	Out	Id	URL	L	S	R	In	Out
1	http://www.artistsforrefugees.org.au/	1	1	0	2	0	73	http://www.mrcnh.org/	0	1	0	2	1
2	http://assembly.uca.org.au/	1	0	1	1	1	74	http://www.mrcnorthwest.org.au/	0	1	0	0	0
3	http://home.vicnet.net.au/~skcc/mrcfweb/	0	1	0	2	0	75	http://www.multiculturalarts.com.au/	0	0	0	1	0
4	http://www.chilout.org/	0	0	0	26	42	76	http://www.nationalprobono.org.au/	0	1	0	0	4
5	http://home.vicnet.net.au/~mdwatch/	1	0	0	4	0	77	http://www.ncca.org.au/	1	0	0	21	6
6	http://www.rac-vic.org/	0	1	0	19	0	78	http://www.oofras.com/	0	1	0	0	14
7	http://home.vicnet.net.au/~wrana/	1	0	0	1	1	79	http://www.oxfam.org.au/	1	0	0	11	8
8	http://info.humanrights.curtin.edu.au/	0	0	0	1	4	80	http://www.ozspirit.info/	0	0	0	4	14
9	http://mc2.vicnet.net.au/home/aswc/	1	0	0	1	0	81	http://www.parishpatience.com.au/immigration/	0	1	0	0	10
10	http://mc2.vicnet.net.au/home/kenna/	1	0	0	1	1	82	http://www.pen.org.au/	1	0	0	3	0
11	http://refugee.autonomous.org/	1	0	1	0	22	83	http://www.polmin.com.au/	1	0	0	4	1
12	http://rspas.anu.edu.au/asiarightsjournal/	0	1	0	1	2	84	http://www.polsis.uq.edu.au/	0	0	1	0	1
13	http://www.qpastt.org.au/	0	0	0	13	9	85	http://www.psychology.org.au/	1	0	1	5	2
14	http://www.startts.org/	0	0	0	8	0	86	http://www.qcross.org.au/	1	1	1	11	3
15	http://www.unrefugees.org.au/	0	0	0	0	0	87	http://www.rac-qld.org/	0	0	0	3	0
16	http://v-i-s-a-s.va.com.au/	0	1	0	4	4	88	http://www.racismnoway.com.au/	0	0	0	7	10
17	http://www.wa.uca.org.au/	0	0	0	0	1	89	http://www.racnsw.net/	0	0	0	1	0
18	http://www.aawl.org.au/	1	0	0	0	0	90	http://www.racs.org.au/	0	1	0	3	6
19	http://www.acmro.catholic.org.au/	0	0	0	5	17	91	http://www.racwollongong.org/	0	0	0	1	3
20	http://www.acoss.org.au/	1	0	0	11	3	92	http://www.rails.org.au/	0	1	0	1	5
21	http://www.activistrights.org.au/	1	0	0	4	5	93	http://www.ras.unimelb.edu.au/	0	0	1	5	14
22	http://www.actorsforrefugees.org.au/	0	0	0	4	0	94	http://www.rashnmelb.org/	0	1	0	4	0
23	http://www.ahrcentre.org/	0	0	0	4	3	95	http://www.redcross.org.au/	1	1	0	9	0
24	http://www.ajustaustralia.com/	1	0	1	22	32	96	http://www.refugeeaction.org/	0	0	0	13	31
25	http://www.ama.com.au/	1	0	0	3	0	97	http://www.refugeebuddies.com/	0	1	0	2	0
26	http://www.ames.net.au/	1	0	0	3	0	98	http://www.refugeecouncil.org.au/	1	1	0	47	40
27	http://www.amnesty.org.au/	1	0	0	48	3	99	http://www.refugeehealth.org.au/	0	1	0	7	0
28	http://www.ancorw.org/	1	0	0	4	1	100	http://www.refugees.org.au/	0	1	0	18	7
29	http://www.anglicare-tas.org.au/	1	1	1	4	0	101	http://www.refugeesandmigrants.org/	0	1	0	5	6
30	http://www.anglicare.org.au/	0	1	0	1	0	102	http://www.refugeesaustralia.org/	0	0	0	8	41
31	http://www.asetts.org.au/	0	1	0	5	0	103	http://www.refugeetutoring.org/	0	1	0	1	1
32	http://www.hothammission.org.au/	1	1	0	12	13	104	http://www.rhhr.net/	0	0	1	1	21
33	http://www.asrc.org.au/	1	1	1	12	0	105	http://www.rightsaustralia.org.au/	1	0	0	6	6
34	http://www.asylumseekerscentre.org.au/	1	1	0	7	0	106	http://www.rilc.org.au/	1	1	0	6	16
35	http://www.asylumseekersfoundation.com/	0	1	0	4	8	107	http://www.ruralaustraliansforrefugees.org/	0	1	0	24	20
36	http://www.ausref.net/	0	1	0	9	14	108	http://www.sacoss.org.au/	1	1	0	3	12
37	http://www.austcare.org.au/	1	1	0	17	4	109	http://www.safecom.org.au/	1	0	0	15	21
38	http://www.australiansagainstracism.org/	0	0	0	20	0	110	http://www.sailprogram.org.au/	1	1	0	2	0

39	http://www.bamyang.org.au/	0 1 0 1 0	111	http://www.save.org.au/	1 0 0 3 0
40	http://www.barco.org.au/	0 0 0 10 30	112	http://www.sgmrc.org.au/	0 1 0 0 0
41	http://www.boat-people.org/	1 0 0 7 11	113	http://www.sievx.com/	1 0 0 15 4
42	http://www.bsl.org.au/	1 1 0 17 0	114	http://www.sievxmemorial.org/	1 0 0 7 3
43	http://www.caa.org.au/	1 0 0 21 1	115	http://www.socialjustice.catholic.org.au/	1 1 1 12 13
44	http://www.carad-wa.org/	0 1 0 9 0	116	http://www.sosj.org.au/justice/	1 1 0 3 9
45	http://www.ccs.mq.edu.au/	0 0 1 0 1	117	http://www.sparelawyers.com/	0 1 0 3 7
46	http://www.chre.curtin.edu.au/	0 0 1 1 1	118	http://www.spareroomsforrefugees.com/	0 1 0 13 24
47	http://www.cimh.unimelb.edu.au/	0 0 1 2 29	119	http://www.speakout.org.au/	0 1 1 4 4
48	http://www.cmyi.net.au/	1 1 1 6 19	120	http://www.sprc.unsw.edu.au/	0 0 1 4 0
49	http://www.companionhouse.org.au/	0 1 0 0 0	121	http://www.sswahs.nsw.gov.au/	0 1 0 0 0
50	http://www.crr.unsw.edu.au/	0 0 1 18 2	122	http://www.stars.org.au/	0 1 0 3 0
51	http://www.edmundrice.org.au/	0 1 0 35 1	123	http://www.survival-comparisons.org.au/	0 0 1 3 7
52	http://www.esjgws.org.au/issues/refugees/	0 1 0 0 2	124	http://www.sydneyanglicans.net/	0 1 0 0 0
53	http://www.fasst.org.au/	0 0 0 10 4	125	http://www.tasa.org.au/	0 0 1 0 4
54	http://www.fecca.org.au/	1 0 0 14 18	126	http://www.tear.org.au/	0 0 0 3 3
55	http://www.fitzroylearningnetwork.org.au/	0 1 0 3 3	127	http://www.thebetterway.info/	1 0 0 12 20
56	http://www.fmrc.net/	0 1 0 2 4	128	http://www.thejusticeproject.com.au/	1 0 0 10 6
57	http://www.foundationhouse.org.au/	1 1 0 15 9	129	http://www.transforming.cultures.uts.edu.au/	0 0 1 2 1
58	http://www.getup.org.au/	1 0 0 6 1	130	http://www.truthoverboard.com/	1 0 0 3 0
59	http://www.gulfviews.com/rar/	0 1 0 1 14	131	http://www.unicef.org.au/	1 1 0 3 2
60	http://www.hopecaravan.com/	0 0 0 4 0	132	http://www.uniya.org.au/	1 1 1 2 17
61	http://www.hreoc.gov.au/	1 0 1 56 15	133	http://www.unya.asn.au/	1 1 0 0 0
62	http://www.humanrightsact.com.au/	1 0 0 3 8	134	http://www.uq.net.au/cjpc/	1 1 0 5 21
63	http://www.jrs.org.au/	1 1 0 4 13	135	http://www.usc.edu.au/Research/ResearchandInnovation/Projects/Refugees/	0 1 1 0 10
64	http://www.justice.wa.uca.org.au/	0 1 0 1 5	136	http://www.users.bigpond.com/burnside/	1 1 0 4 30
65	http://www.justiceforrefugees.asn.au/	0 0 0 5 13	137	http://www.vass.org.au/	0 1 0 1 0
66	http://www.justpeaceqld.org/	0 0 0 1 1	138	http://www.vichealth.vic.gov.au/	0 1 1 4 0
67	http://www.latrobe.edu.au/rhrc/	0 0 1 9 13	139	http://www.vieu.org.au/	0 0 0 1 6
68	http://www.libertyvictoria.org.au/	1 0 0 3 7	140	http://www.vinnies.org.au/	0 1 0 5 0
69	http://www.melbourne.catholic.org.au/	0 0 0 7 0	141	http://www.vthc.org.au/	1 0 0 3 2
70	http://www.mmha.org.au/	1 1 1 6 8	142	http://www.vtpu.org.au/	0 1 1 5 14
71	http://www.mrcn.org.au/	0 1 0 2 0	143	http://www.wacoss.org.au/	1 1 0 2 0
72	http://www.mrcne.org.au/	0 1 1 3 1	144	http://www.worldvision.com.au/	1 1 0 3 2

Note: L - lobby, S - service, R - research, In - indegree, Out - outdegree

Table A2: Estimates and Goodness of Fit

Model A

Estimation Result for Network SUMMARY (parameter, standard error, t-statistics)

NOTE: t-statistics = (observation - sample mean)/standard error

effects	estimates	stderr	t-ratio	
arc	-3.161396	0.18696	0.04521	*
Lobby_interaction	-0.123507	0.27755	0.07343	
Service_interaction	0.012411	0.32188	0.00515	
Research_interaction	0.823666	0.38732	-0.01996	*
Lobby_sender	0.234327	0.20029	0.04568	

Service_sender	-0.737192	0.26217	-0.01977	*
Research_sender	0.621559	0.18077	0.02306	*
Lobby_receiver	0.386722	0.18838	0.03212	*
Service_receiver	0.069435	0.14574	0.03797	
Research_receiver	-0.336728	0.26890	-0.00668	

GOODNESS OF FIT

Parameter Values:

arc	-3.16140
reciprocity	0.00000
2-in-star	0.00000
2-out-star	0.00000
3-in-star	0.00000
3-out-star	0.00000
path2	0.00000
T1	0.00000
T2	0.00000
T3	0.00000
T4	0.00000
T5	0.00000
T6	0.00000
T7	0.00000
T8	0.00000
T9(030T)	0.00000
T10(030C)	0.00000
Sink	0.00000
Source	0.00000
Isolates	0.00000
AinS(2.00)	0.00000
AoutS(2.00)	0.00000
AinS(2.00)	0.00000
AoutS(2.00)	0.00000
Ainlout-star(2.00)	0.00000
linAout-star(2.00)	0.00000
AinAout-star(2.00)	0.00000
AT-T(2.00)	0.00000
AT-C(2.00)	0.00000
AT-D(2.00)	0.00000
AT-U(2.00)	0.00000
AT-TD(2.00)	0.00000
AT-TU(2.00)	0.00000
AT-DU(2.00)	0.00000
AT-TDU(2.00)	0.00000
A2P-T(2.00)	0.00000
A2P-D(2.00)	0.00000
A2P-U(2.00)	0.00000
A2P-TD(2.00)	0.00000
A2P-TU(2.00)	0.00000
A2P-DU(2.00)	0.00000
A2P-TDU(2.00)	0.00000

```

Lobby_interaction    -0.12351
Service_interaction  0.01241
Research_interaction 0.82367
Lobby_sender        0.23433
Service_sender      -0.73719
Research_sender     0.62156
Lobby_receiver      0.38672
Service_receiver    0.06943
Research_receiver   -0.33673
Lobby_sender_missing 0.00000
Service_sender_missing 0.00000
Research_sender_missing 0.00000
Lobby_receiver_missing 0.00000
Service_receiver_missing 0.00000
Research_receiver_missing 0.00000
Lobby_interaction_reciprocity 0.00000
Service_interaction_reciprocity 0.00000
Research_interaction_reciprocity 0.00000
Lobby_activity_reciprocity 0.00000
Service_activity_reciprocity 0.00000
Research_activity_reciprocity 0.00000
Lobby_in2star 0.00000
Service_in2star 0.00000
Research_in2star 0.00000
Lobby_path2 0.00000
Service_path2 0.00000
Research_path2 0.00000
Lobby_out2star 0.00000
Service_out2star 0.00000
Research_out2star 0.00000
Simulated 1000 samples.

```

observation, sample mean (standard error), t-statistic
t-statistics = (observation - sample mean)/standard deviation

effects	observed	mean	stddev	t-ratio
arc	957	957.190	23.624	-0.008
reciprocity	103	64.197	6.326	6.134
2-in-star	8403	4869.480	270.196	13.078
2-out-star	8737	6088.436	321.099	8.248
3-in-star	86959	25671.827	3044.575	20.130
3-out-star	72412	40319.751	4170.972	7.694
path2	10229	8614.337	460.961	3.503
T1	37	5.172	2.999	10.614
T2	401	88.898	27.090	11.521
T3	692	254.320	45.674	9.583
T4	599	153.050	26.798	16.641
T5	640	194.002	31.570	14.127
T6	541	203.934	45.605	7.391
T7	3404	1601.585	204.640	8.808
T8	3812	2050.115	245.800	7.168
T9(030T)	3338	1321.414	105.848	19.052
T10(030C)	384	257.319	28.958	4.375

Sink	38	7.889	2.398	12.555
Source	10	2.187	1.380	5.662
Isolates	8	0.160	0.398	19.689
AinS(2.00)	1476.961	1395.089	44.215	1.852
AoutS(2.00)	1570.230	1433.602	43.778	3.121
AinS(2.00)	1476.961	1395.089	44.215	1.852
AoutS(2.00)	1570.230	1433.602	43.778	3.121
Ainlout-star(2.00)	1635.109	1773.976	55.659	-2.495
linAout-star(2.00)	1387.477	1641.655	60.844	-4.178
AinAout-star(2.00)	272.835	435.127	10.179	-15.944
AT-T(2.00)	1330.160	799.069	43.882	12.103
AT-C(2.00)	597.768	513.529	43.553	1.934
AT-D(2.00)	1176.564	779.884	44.299	8.955
AT-U(2.00)	1085.335	704.305	39.437	9.662
AT-TD(2.00)	1253.362	789.476	43.375	10.695
AT-TU(2.00)	1207.747	751.687	40.797	11.179
AT-DU(2.00)	1130.949	742.094	40.442	9.615
AT-TDU(2.00)	1197.353	761.086	41.207	10.587
A2P-T(2.00)	6363.603	6756.395	305.466	-1.286
A2P-D(2.00)	4854.303	4574.288	212.229	1.319
A2P-U(2.00)	4021.562	3464.614	169.654	3.283
A2P-TD(2.00)	5608.953	5665.341	239.460	-0.235
A2P-TU(2.00)	5192.582	5110.504	222.224	0.369
A2P-DU(2.00)	4437.932	4019.451	157.555	2.656
A2P-TDU(2.00)	5079.823	4931.766	199.738	0.741
Lobby_interaction	233	232.697	11.583	0.026
Service_interaction	215	215.343	10.226	-0.034
Research_interaction	71	71.069	6.443	-0.011
Lobby_sender	437	437.096	16.266	-0.006
Service_sender	425	425.220	14.726	-0.015
Research_sender	255	254.845	12.138	0.013
Lobby_receiver	497	496.722	16.816	0.017
Service_receiver	469	469.169	16.498	-0.010
Research_receiver	198	197.940	10.627	0.006
Lobby_sender_missing	0	0.000	0.000	-1.#IO
Service_sender_missing	0	0.000	0.000	-1.#IO
Research_sender_missing	0	0.000	0.000	-1.#IO
Lobby_receiver_missing	0	0.000	0.000	-1.#IO
Service_receiver_missing	0	0.000	0.000	-1.#IO
Research_receiver_missing	0	0.000	0.000	-1.#IO
Lobby_interaction_reciprocity	28	21.644	3.738	1.700
Service_interaction_reciprocity	25	14.838	2.881	3.527
Research_interaction_reciprocity	8	6.204	2.061	0.872
Lobby_activity_reciprocity	76	50.407	5.624	4.550
Service_activity_reciprocity	66	42.643	5.148	4.537
Research_activity_reciprocity	36	26.758	4.216	2.192
Lobby_in2star	4700	2991.481	220.093	7.763
Service_in2star	4441	2394.535	186.169	10.993
Research_in2star	2240	1212.982	146.693	7.001
Lobby_path2	5939	5390.879	346.126	1.584
Service_path2	4456	3767.982	268.775	2.560
Research_path2	2311	2215.519	208.367	0.458
Lobby_out2star	3849	3019.713	240.241	3.452
Service_out2star	3335	2564.883	203.826	3.778

Research_out2star	2204	1543.972	157.360	4.194
Std Dev in-degree dist	8.899	5.479	0.218	15.716
Skew in-degree dist	2.991	2.314	0.256	2.639
Std Dev out-degree dist	9.156	6.852	0.223	10.337
Skew out-degree dist	1.854	2.187	0.177	-1.884
CorrCoef in-out-degree dists	0.347	0.439	0.039	-2.381
Global Clustering Cto	0.191	0.108	0.006	14.978
Global Clustering Cti	0.199	0.136	0.007	9.033
Global Clustering Ctm	0.326	0.153	0.007	25.189
Global Clustering Ccm	0.113	0.089	0.007	3.332
Global Clustering AKC-T	0.209	0.118	0.004	24.640
Global Clustering AKC-D	0.121	0.085	0.003	11.525
Global Clustering AKC-U	0.135	0.102	0.004	9.128
Global Clustering AKC-C	0.094	0.076	0.004	4.201

SAMPLE GEODESIC DISTRIBUTION

Note: geodesic = shortest path between two nodes.

The geodesic distribution is not based on semi-paths.

FIRST QUANTILES

Median of sample G25s: 2

Interquartile range: 0

Observed first quartile geodesic: 3

in model samples, 100.00% of graphs have lower G25.

in model samples, 0.00% of graphs have higher G25.

SECOND QUANTILES

Median of sample G50s: 3

Interquartile range: 0

Observed median geodesic: 4

in model samples, 100.00% of graphs have lower G50.

in model samples, 0.00% of graphs have higher G50.

THIRD QUANTILES

Median of sample G75s: 4

Interquartile range: 0

Observed first quartile geodesic: 144

in model samples, 100.00% of graphs have lower G75.

in model samples, 0.00% of graphs have higher G75.

GOF on Triad Census

Triad	observed	mean	stddev	t-ratio
300	37	5.172	2.999	10.614
210	179	57.866	13.223	9.161
120C	112	107.556	14.069	0.316
120D	309	79.668	12.561	18.257
120U	350	120.620	16.616	13.805
201	251	130.552	30.092	4.003
111D	1413	868.959	94.475	5.759
111U	1739	1235.585	124.903	4.030
030T	1149	608.652	56.871	9.501
030C	19	81.553	12.816	-4.881
102	9732	6311.234	640.741	5.339
021D	4008	3553.935	205.042	2.214

021C	2777	4409.638	244.769	-6.670
021U	4041	2742.557	167.641	7.745
012	76613	91428.059	1946.202	-7.612
003	384615	375602.394	2450.743	3.677

Mahalanobis distance = 357.658810 (127919.824049)

100% simulated samples have smaller Mahalanobis distances than the observed network.

Model B

Estimation Result for Network SUMMARY (parameter, standard error, t-statistics)

NOTE: t-statistics = (observation - sample mean)/standard error

effects	estimates	stderr	t-ratio		
arc			-6.429670	0.61154	-0.00109 *
reciprocity			1.457683	0.32105	-0.01782 *
2-in-star			0.088395	0.00916	0.03592 *
path2			-0.009295	0.01278	-0.02507
AinS(2.00)			-0.036708	0.26386	0.00771
AoutS(2.00)			1.062395	0.22860	0.00521 *
AT-T(2.00)			1.133895	0.11267	-0.00283 *
AT-C(2.00)			-0.233066	0.07973	-0.06937 *
A2P-T(2.00)			-0.082752	0.02564	-0.04790 *
A2P-D(2.00)			0.033404	0.01470	-0.00025 *
Lobby_interaction			-0.162251	0.34911	-0.01062
Service_interaction			-0.066996	0.28854	0.03133
Research_interaction			1.081445	0.40906	-0.00557 *
Lobby_sender			0.264267	0.21327	0.02488
Service_sender			-0.747623	0.23960	-0.02404 *
Research_sender			0.317743	0.18146	0.04059
Lobby_receiver			-0.020213	0.19656	-0.06724
Service_receiver			0.039282	0.17356	0.04641
Research_receiver			-0.431957	0.26650	-0.00059

GOODNESS OF FIT

Parameter Values:

arc	-6.42967
reciprocity	1.45768
2-in-star	0.08840
2-out-star	0.00000
3-in-star	0.00000
3-out-star	0.00000
path2	-0.00929
T1	0.00000
T2	0.00000
T3	0.00000
T4	0.00000
T5	0.00000
T6	0.00000
T7	0.00000
T8	0.00000
T9(030T)	0.00000

T10(030C)	0.00000
Sink	0.00000
Source	0.00000
Isolates	0.00000
AinS(2.00)	-0.03671
AoutS(2.00)	1.06240
AinS(2.00)	0.00000
AoutS(2.00)	0.00000
Ainlout-star(2.00)	0.00000
linAout-star(2.00)	0.00000
AinAout-star(2.00)	0.00000
AT-T(2.00)	1.13390
AT-C(2.00)	-0.23307
AT-D(2.00)	0.00000
AT-U(2.00)	0.00000
AT-TD(2.00)	0.00000
AT-TU(2.00)	0.00000
AT-DU(2.00)	0.00000
AT-TDU(2.00)	0.00000
A2P-T(2.00)	-0.08275
A2P-D(2.00)	0.03340
A2P-U(2.00)	0.00000
A2P-TD(2.00)	0.00000
A2P-TU(2.00)	0.00000
A2P-DU(2.00)	0.00000
A2P-TDU(2.00)	0.00000
Lobby_interaction	-0.16225
Service_interaction	-0.06700
Research_interaction	1.08145
Lobby_sender	0.26427
Service_sender	-0.74762
Research_sender	0.31774
Lobby_receiver	-0.02021
Service_receiver	0.03928
Research_receiver	-0.43196
Lobby_sender_missing	0.00000
Service_sender_missing	0.00000
Research_sender_missing	0.00000
Lobby_receiver_missing	0.00000
Service_receiver_missing	0.00000
Research_receiver_missing	0.00000
Lobby_interaction_reciprocity	0.00000
Service_interaction_reciprocity	0.00000
Research_interaction_reciprocity	0.00000
Lobby_activity_reciprocity	0.00000
Service_activity_reciprocity	0.00000
Research_activity_reciprocity	0.00000
Lobby_in2star	0.00000
Service_in2star	0.00000
Research_in2star	0.00000
Lobby_path2	0.00000
Service_path2	0.00000
Research_path2	0.00000
Lobby_out2star	0.00000

Service_out2star 0.00000

Research_out2star 0.00000

Simulated 1000 samples.

observation, sample mean (standard error), t-statistic

t-statistics = (observation - sample mean)/standard deviation

effects	observed	mean	stddev	t-ratio
arc	957	958.578	31.903	-0.049
reciprocity	103	103.310	8.230	-0.038
2-in-star	8403	8425.190	707.761	-0.031
2-out-star	8737	8306.010	540.157	0.798
3-in-star	86959	92074.445	15905.413	-0.322
3-out-star	72412	66005.107	7536.456	0.850
path2	10229	10265.339	672.405	-0.054
T1	37	44.056	9.999	-0.706
T2	401	454.371	77.764	-0.686
T3	692	749.337	104.044	-0.551
T4	599	562.450	68.903	0.530
T5	640	677.468	73.622	-0.509
T6	541	652.641	99.267	-1.125
T7	3404	3506.002	379.093	-0.269
T8	3812	4101.470	398.643	-0.726
T9(030T)	3338	3092.874	246.648	0.994
T10(030C)	384	402.193	48.504	-0.375
Sink	38	41.253	3.693	-0.881
Source	10	10.792	2.491	-0.318
Isolates	8	6.749	2.202	0.568
AinS(2.00)	1476.961	1479.841	60.941	-0.047
AoutS(2.00)	1570.230	1573.193	60.103	-0.049
AinS(2.00)	1476.961	1479.841	60.941	-0.047
AoutS(2.00)	1570.230	1573.193	60.103	-0.049
Ainlout-star(2.00)	1635.109	1635.666	69.614	-0.008
linAout-star(2.00)	1387.477	1324.401	70.344	0.897
AinAout-star(2.00)	272.835	272.126	10.238	0.069
AT-T(2.00)	1330.160	1332.963	68.009	-0.041
AT-C(2.00)	597.768	601.162	51.000	-0.067
AT-D(2.00)	1176.564	1160.952	62.746	0.249
AT-U(2.00)	1085.335	1078.380	65.190	0.107
AT-TD(2.00)	1253.362	1246.958	63.801	0.100
AT-TU(2.00)	1207.747	1205.672	63.746	0.033
AT-DU(2.00)	1130.949	1119.666	59.806	0.189
AT-TDU(2.00)	1197.353	1190.765	61.492	0.107
A2P-T(2.00)	6363.603	6380.598	330.510	-0.051
A2P-D(2.00)	4854.303	4862.912	284.036	-0.030
A2P-U(2.00)	4021.562	4427.839	394.010	-1.031
A2P-TD(2.00)	5608.953	5621.755	274.745	-0.047
A2P-TU(2.00)	5192.582	5404.218	296.858	-0.713
A2P-DU(2.00)	4437.932	4645.376	241.590	-0.859
A2P-TDU(2.00)	5079.823	5223.783	245.570	-0.586
Lobby_interaction	233	233.241	13.221	-0.018
Service_interaction	215	215.885	12.905	-0.069
Research_interaction	71	71.310	7.242	-0.043

Lobby_sender	437	437.855	19.935	-0.043
Service_sender	425	426.290	19.662	-0.066
Research_sender	255	255.508	15.441	-0.033
Lobby_receiver	497	497.292	22.629	-0.013
Service_receiver	469	469.891	21.407	-0.042
Research_receiver	198	197.946	12.847	0.004
Lobby_sender_missing	0	0.000	0.000	-1.#IO
Service_sender_missing	0	0.000	0.000	-1.#IO
Research_sender_missing	0	0.000	0.000	-1.#IO
Lobby_receiver_missing	0	0.000	0.000	-1.#IO
Service_receiver_missing	0	0.000	0.000	-1.#IO
Research_receiver_missing	0	0.000	0.000	-1.#IO
Lobby_interaction_reciprocity	28	37.847	4.667	-2.110
Service_interaction_reciprocity	25	19.850	3.614	1.425
Research_interaction_reciprocity	8	9.713	2.578	-0.664
Lobby_activity_reciprocity	76	83.998	7.288	-1.097
Service_activity_reciprocity	66	66.085	6.564	-0.013
Research_activity_reciprocity	36	43.369	5.242	-1.406
Lobby_in2star	4700	4724.512	472.368	-0.052
Service_in2star	4441	4429.742	524.232	0.021
Research_in2star	2240	2201.498	329.496	0.117
Lobby_path2	5939	6860.498	522.712	-1.763
Service_path2	4456	4152.286	369.993	0.821
Research_path2	2311	2752.658	306.803	-1.440
Lobby_out2star	3849	3973.659	356.196	-0.350
Service_out2star	3335	3127.010	292.240	0.712
Research_out2star	2204	2192.587	266.101	0.043
Std Dev in-degree dist	8.899	8.894	0.454	0.010
Skew in-degree dist	2.991	3.236	0.299	-0.819
Std Dev out-degree dist	9.156	8.807	0.311	1.122
Skew out-degree dist	1.854	1.824	0.128	0.238
CorrCoef in-out-degree dists	0.347	0.363	0.034	-0.453
Global Clustering Cto	0.191	0.186	0.010	0.485
Global Clustering Cti	0.199	0.184	0.011	1.341
Global Clustering Ctm	0.326	0.301	0.011	2.320
Global Clustering Ccm	0.113	0.117	0.009	-0.508
Global Clustering AKC-T	0.209	0.209	0.006	0.002
Global Clustering AKC-D	0.121	0.120	0.005	0.329
Global Clustering AKC-U	0.135	0.122	0.008	1.647
Global Clustering AKC-C	0.094	0.094	0.005	-0.041

SAMPLE GEODESIC DISTRIBUTION

Note: geodesic = shortest path between two nodes.

The geodesic distribution is not based on semi-paths.

FIRST QUANTILES

Median of sample G25s: 3

Interquartile range: 0

Observed first quartile geodesic: 3

in model samples, 13.90% of graphs have lower G25.

in model samples, 0.00% of graphs have higher G25.

SECOND QUANTILES

Median of sample G50s: 4

Interquartile range: 1

* No. of Rb for Attribute2: 249
 * No. of Rb for Attribute3: 58
 * No. of Rs for Attribute1: 432
 * No. of Rs for Attribute2: 493
 * No. of Rs for Attribute3: 204
 * No. of Rr for Attribute1: 511
 * No. of Rr for Attribute2: 456
 * No. of Rr for Attribute3: 203

*Digraph Density:
 0.04633

*In-degree Distribution:(range[0..n-1])

13 20 17 20 10 7 6 8 5 5 5 3 3 1 2 2 4 2 3 0 1 0 2 1 0 1 0 1 0 0 0 0 1 0 0
 0 1 0
 0

*Standard deviation of in-degree distribution = 7.924886

*Skew of in-degree distribution = 2.693149

*Out-degree Distribution:(range[0..n-1])

50 15 7 7 8 6 3 6 4 4 3 3 1 3 3 1 5 1 0 1 1 0 1 0 1 2 0 0 0 1 0 2 0 0 0 1 0 0 0 0 0 2 1 0 0 0 0 0 0 0 0
 0 0 0 0 0 0 0 0 0 0 0 0 1 0
 0

*Standard deviation of out-degree distribution = 10.085657

*Skew of out-degree distribution = 2.469647

*Corr. Coef. between in and out degree distributions = 0.488354

*Mean In\Out degree = 6.62500

*Global Clustering Coefficients:

*Cto = 0.17208
 *Cti = 0.23900
 *Ctm = 0.29448
 *Ccm = 0.04694
 *AKC-T = 0.18700
 *AKC-D = 0.21655
 *AKC-U = 0.29783
 *AKC-C = 0.10276

*Geodesic Distribution:(range[1..n-1,inf])

Note: geodesic = shortest path between two nodes.

The geodesic distribution is not based on semi-paths.

954 4746 4209 1437 308 44 3 0
 0
 0 8891

*In-two-path Distribution:(range[0..n-1])

7777 1120 455 304 187 130 95 62 55 20 15 19 16 11 5 4 3 4 3 2 2 0 1 4 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0
 0
 0

*Out-two-path Distribution:(range[0..n-1])

5886 2271 959 467 260 134 116 56 41 26 15 19 13 8 4 9 2 3 2 1 0 1 0 0 0 0 0 0 1 0 2 0 0 0 0 0 0 0 0 0 0 0
0
0 0

*mix-two-path Distribution:(range[0..n-1])

15020 2986 1216 599 327 157 94 56 41 26 26 13 6 7 4 3 2 2 3 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
0
0
0

*Quartiles of the geodesic distribution.

Note: Quartiles equal to the number of nodes refer to infinite geodesics.

2 4 144 144

*Triad Census:

300(54) 210(267) 120C(152) 120D(221) 120U(426) 201(444) 111D(1411) 111U(2527) 030T(873) 030C(22)
102(11145) 021D(4242) 021C(2788) 021U(2761) 012(72466) 003(387545)

Table A3: Matrix of 144 asylum seeker advocacy groups, Time 2: 2008

*vertices 144

*matrix

0
0
0
0
0 1 0
0
0
0
0 0 0 0 0 0 1 0
0 1 0 0 0 0 1 1 1 1 0
0 0 1 0 1 0 1 0 0 0 1 1 0 1 1 1 0 0 0 0 1 0 0 0 1 1 0 0 0 1 1 1 1 1 0 1 0 0 0 1 1 1 0 0 0 0 0 1 1
0
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0
0
0
0
0
0
0
0
0
0
0
0
0
0 0

*Triad Census:

300(37) 210(179) 120C(112) 120D(309) 120U(350) 201(251) 111D(1413) 111U(1739) 030T(1149) 030C(19)
 102(9732) 021D(4008) 021C(2777) 021U(4041) 012(76613) 003(384615)

Table A4: Binary actor attributes for 144 asylum seeker advocacy groups, Time 1: 2006

Binary actor attributes:

1=lobby
 2=service
 3=research

1	1	0
1	0	1
0	1	0
0	0	0
1	0	0
0	1	0
1	0	0
0	0	0
1	0	0
1	0	0
1	0	1
0	1	0
0	0	0
0	0	0
0	0	0
0	1	0
0	0	0
1	0	0
0	0	0
1	0	0
1	0	0
0	0	0
0	0	0
1	0	1
1	0	0
1	0	0
0	1	0
1	0	0
1	1	1
0	1	0
0	1	0
1	1	0
1	1	1
1	1	0
0	1	0
0	1	0
1	1	0
0	0	0

0	1	0
0	0	0
1	0	0
1	1	0
1	0	0
0	1	0
0	0	1
0	0	1
0	0	1
1	1	1
0	1	0
0	0	1
0	1	0
0	1	0
0	0	0
1	0	0
0	1	0
0	1	0
1	1	0
1	0	0
0	1	0
0	0	0
1	0	1
1	0	0
1	1	0
0	1	0
0	0	0
0	0	0
0	0	1
1	0	0
0	0	0
1	1	1
0	1	0
0	1	1
0	1	0
0	1	0
0	0	0
0	1	0
1	0	0
0	1	0
1	0	0
0	0	0
0	0	0
0	1	0
1	0	0
0	1	0
0	0	1
1	0	1
1	1	1
0	0	0
0	0	0
0	0	0
0	1	0
0	0	0
0	1	0
0	0	0

0	0	1
0	1	0
1	1	0
0	0	0
0	1	0
1	1	0
0	1	0
0	1	0
0	1	0
0	0	0
0	1	0
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0	1	0
1	1	0
1	0	0
1	1	0
1	0	0
0	1	0
1	0	0
1	0	0
1	1	1
1	1	0
0	1	0
0	1	0
0	1	1
0	0	1
0	1	0
0	0	1
0	0	0
1	0	0
1	0	0
0	0	1
1	0	0
1	1	0
1	1	1
1	1	0
1	1	0
0	1	1
1	1	0
0	1	0
0	1	1
0	0	0
0	1	0
1	0	0
0	1	1
1	1	0
1	1	0

Figure A1: LPNet main menu

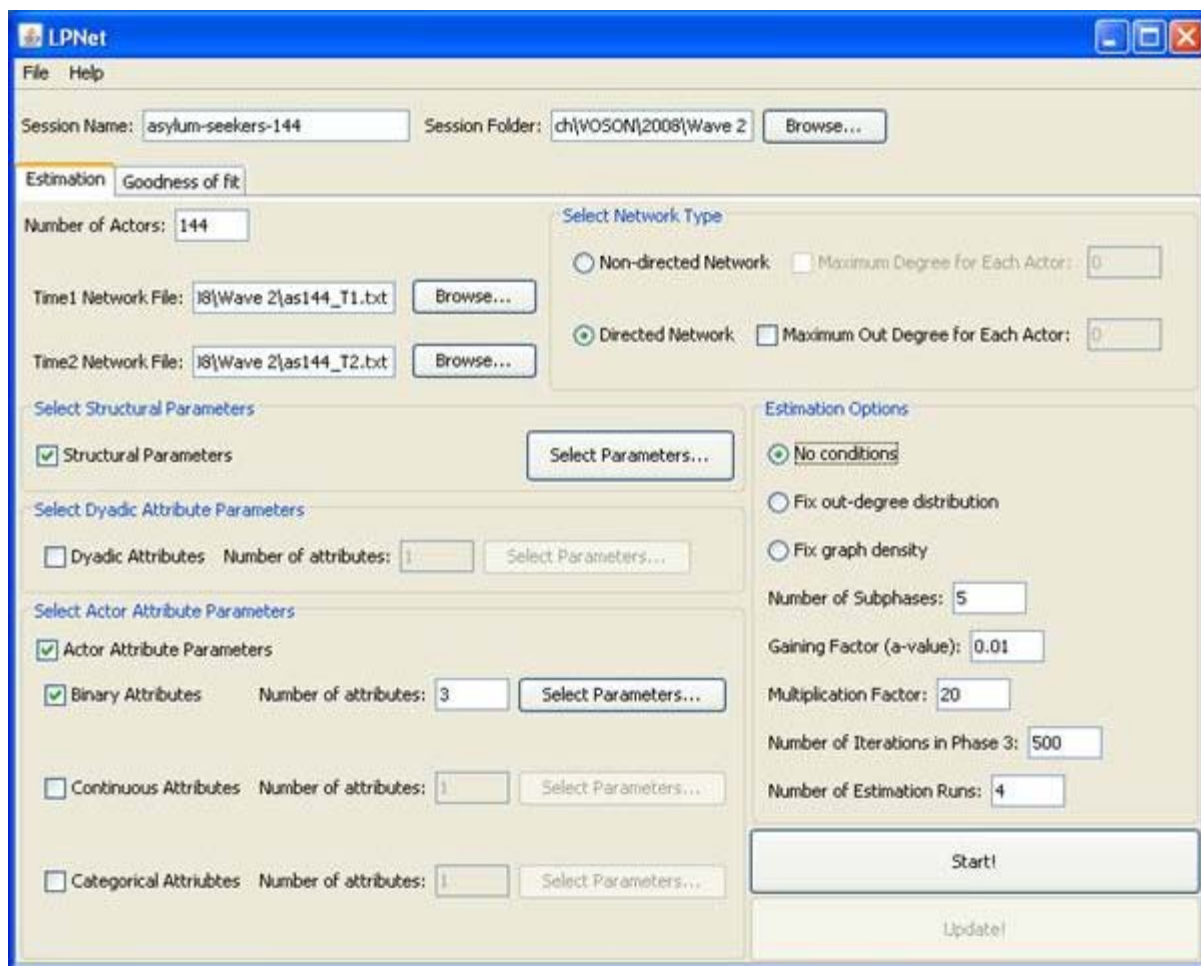


Figure A1 presents one of the main windows in the LPNet program. We are conducting an estimation using the observed data that was collected at two time points on the asylum seeker advocacy groups. Thus we are estimating an ERGM to fit our 144-node data sets. Note that we have chosen *directed* because our data is constructed as such. There are both structural parameters (for purely structural effects) and attribute effects (for actor-relation effects), specifically binary attribute effects in this particular case, though continuous and categorical attributes are possible.

Further in Figure A1, on the right hand side panel there are a number of estimation options regarding the model estimation. We refer the reader to the PNet manual here, but suffice to say that these options vary the length of time of the estimation (e.g. for more dense networks one may wish to increase the multiplication factor, or the number of estimation runs). Note also that we can choose to run goodness of fit to see how well our estimated model fits our data.

With our specified model— that is, with our particular selection of the structural and actor-relation effects made — the model estimation can be conducted by simply pressing the start button (see bottom right corner of LPNet main window).

Figure A2: Purely structural parameters window of the LPNet program

Structural Parameter Selection

Markov Parameters

- Arc 0
- Reciprocity 0
- In-2-star 0
- Out-2-star 0
- In-3-star 0
- Out-3-star 0
- Mixed-2-star 0
- Transitive-Triad 0
- Cyclic-Triad 0
- T7 0
- T8 0
- T4 0
- T5 0
- T3 0
- T6 0
- T2 0
- T1 0

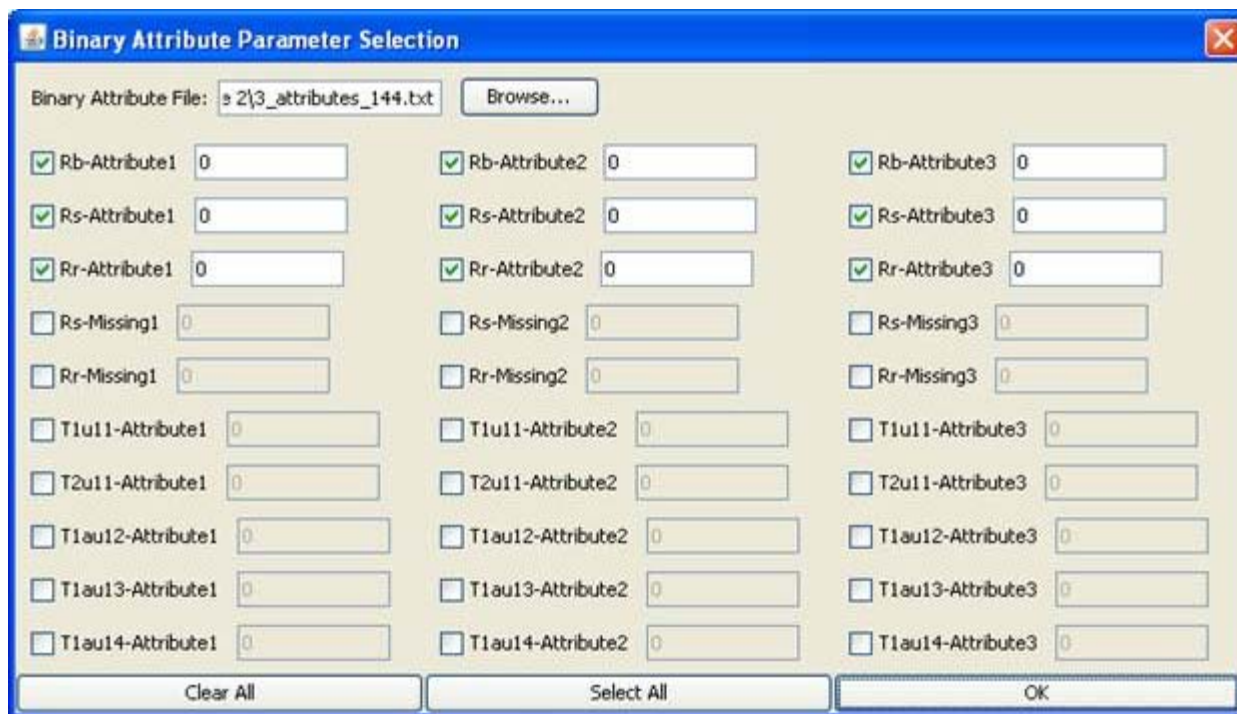
High-Order Parameters

- K-in-star 0 lambda value: 2
- K-out-star 0 lambda value: 2
- K-in-star-2nd 0 lambda value: 2
- K-out-star-2nd 0 lambda value: 2
- KL-star 0 lambda value: 2
- K-one-star 0 lambda value: 2
- One-L-star 0 lambda value: 2
- AKT-T 0 lambda value: 2
- AKT-C 0 lambda value: 2
- AKT-D 0 lambda value: 2
- AKT-U 0 lambda value: 2
- AKT-TD 0 lambda value: 2
- AKT-TU 0 lambda value: 2
- AKT-DU 0 lambda value: 2
- AKT-TDU 0 lambda value: 2
- A2p-T 0 lambda value: 2
- A2p-D 0 lambda value: 2
- A2p-U 0 lambda value: 2
- A2p-TD 0 lambda value: 2
- A2p-TU 0 lambda value: 2
- A2p-DU 0 lambda value: 2
- A2p-TDU 0 lambda value: 2

Clear All Select All OK

Figure A2 demonstrates the purely structural parameters that were selected for the analyses, with those included having a tick next to them.

Figure A3: Actor-relation effects (also referred to as actor attribute effects) window of the LPNet program



In Figure A3 we can see our three attributes: **Attribute1** = lobby, **Attribute2** = service, and **Attribute3** = research, and the selection of homophily effects (**Rb**), sender effects (**Rs**), and receiver effects (**Rr**). Consult the PNet manual (<http://www.sna.unimelb.edu.au/pnet/download/PNet/PNetManual.pdf>) for descriptions of other parameters in this window that are able to be examined using ERGM.

Figure A4: A screenshot of VOSON with network visualization and cross-tabulation.

