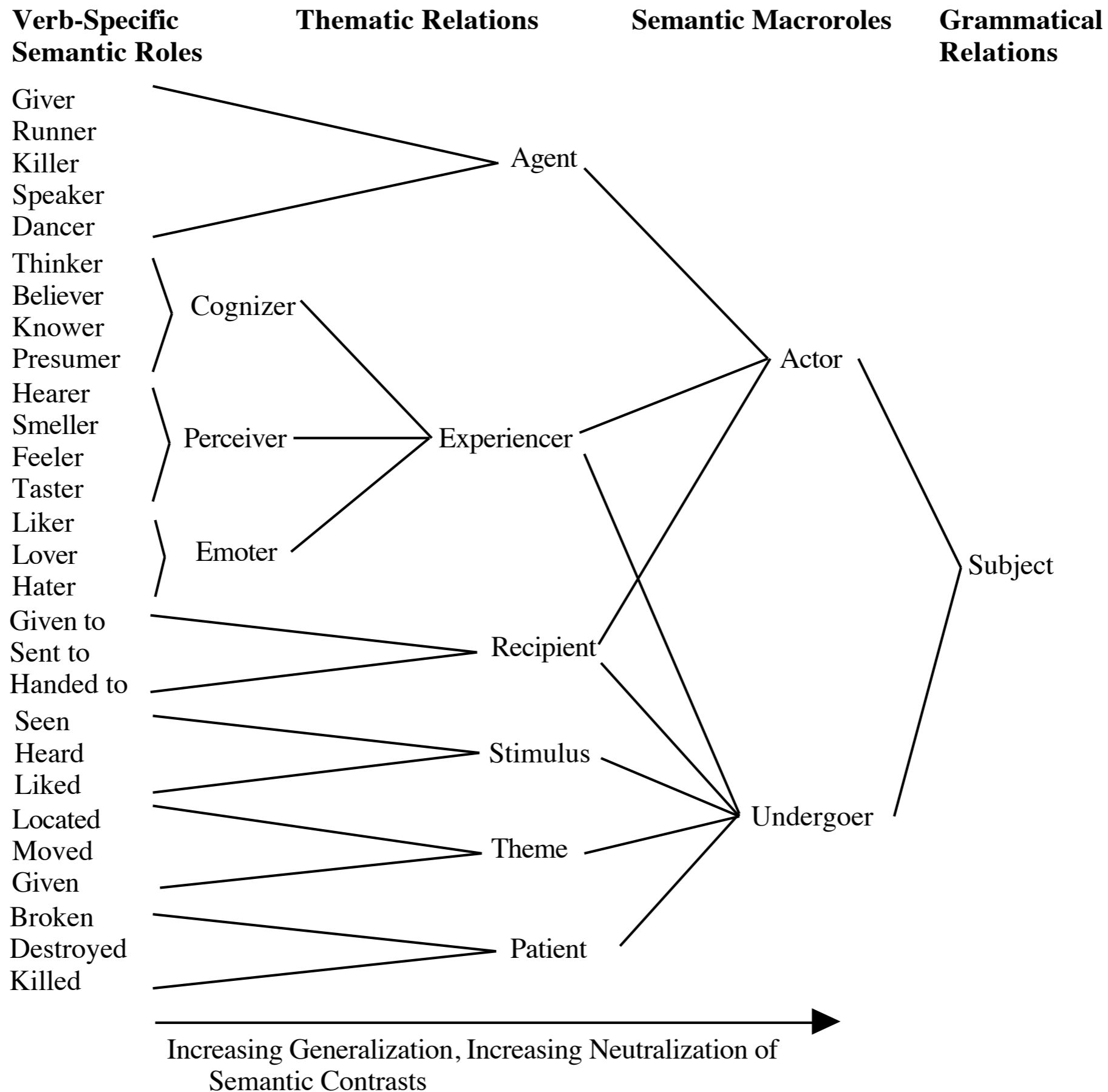


Inducing Semantic Roles

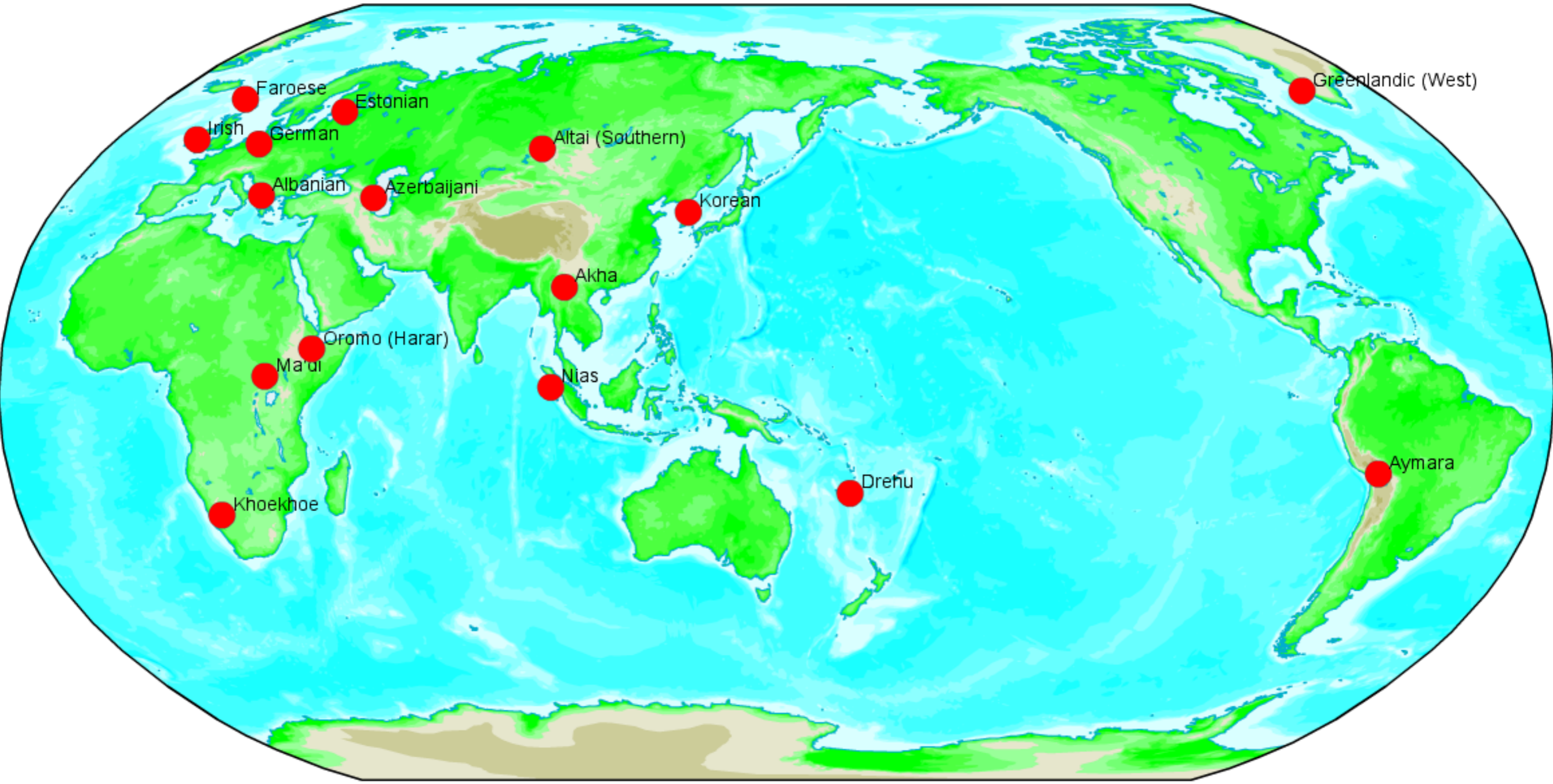
Michael Cysouw

Role Complexes: New approaches to defining semantic roles

Zürich, 5 April 2011



- 1 What important information is contained in the Bible?
- 2 Who is the Bible's author?
- 3 Why should you study the Bible?
- 4 The Bible is a precious gift from God.
- 5 The Bible alone tells us what we must do to please God.
- 6 The Bible was written by some 40 different men over a period of 1,600 years, beginning in 1513 B.C.E.
- 7 So God in heaven, not any human on earth, is the Author of the Bible.
- 8 God made sure that the Bible was accurately copied and preserved.
- 9 More Bibles have been printed than any other book.
- 10 Not everyone will be happy to see you studying the Bible, but do not let that stop you.
- 11 But the Bible tells us that there is only one TRUE God.
- 12 But when the Bible was written, the name Jehovah appeared in it some 7,000 times
- 13 God is a Spirit, says the Bible.
- 14 The Bible reveals Jehovah's personality to us.
- 15 The Bible tells us that he is also merciful, kind, forgiving, generous, and patient.
- 16 We learn about God from creation and from the Bible.
- 17 Another way we can learn about God is by studying the Bible.
- 18 By disobeying God's command, the first man, Adam, committed what the Bible calls sin.
- 19 This is what the Bible refers to as the ransom.
- 20 Some of your loved ones may become very angry because you are studying the Bible.
- 21 What is the Bible's view of separation and of divorce?
- 22 The Bible says that a husband is the head of his family.
- 23 Parents need to spend time with their children and study the Bible with them,
- 24 When marriage mates have problems getting along together, they should try to apply Bible counsel.
- 25 The Bible urges us to show love and to be forgiving.
- 26 But God does not approve of them if they come from false religion or are against Bible teachings.
- 27 The only two birthday celebrations spoken of in the Bible were held by persons who did not worship Jehovah.
- 28 The Bible teaches that only a few people are on the narrow road to life.
- 29 The Bible foretold that after the death of the apostles, ...
- 30 True Christians love one another, respect the Bible, and preach about God's Kingdom.
- 31 Another mark of true religion is that its members have a deep respect for the Bible.
- 32 They try to live by the Bible in their everyday life.
- 33 The Bible is the basis for what is taught.
- 34 By now you have learned many good things from the Bible.



Faroese

Estonian

Irish

German

Albanian

Azerbaijani

Altai (Southern)

Korean

Akha

Nias

Oromo (Harar)

Maui

Khoekhoe

Drehu

Greenlandic (West)

Aymara

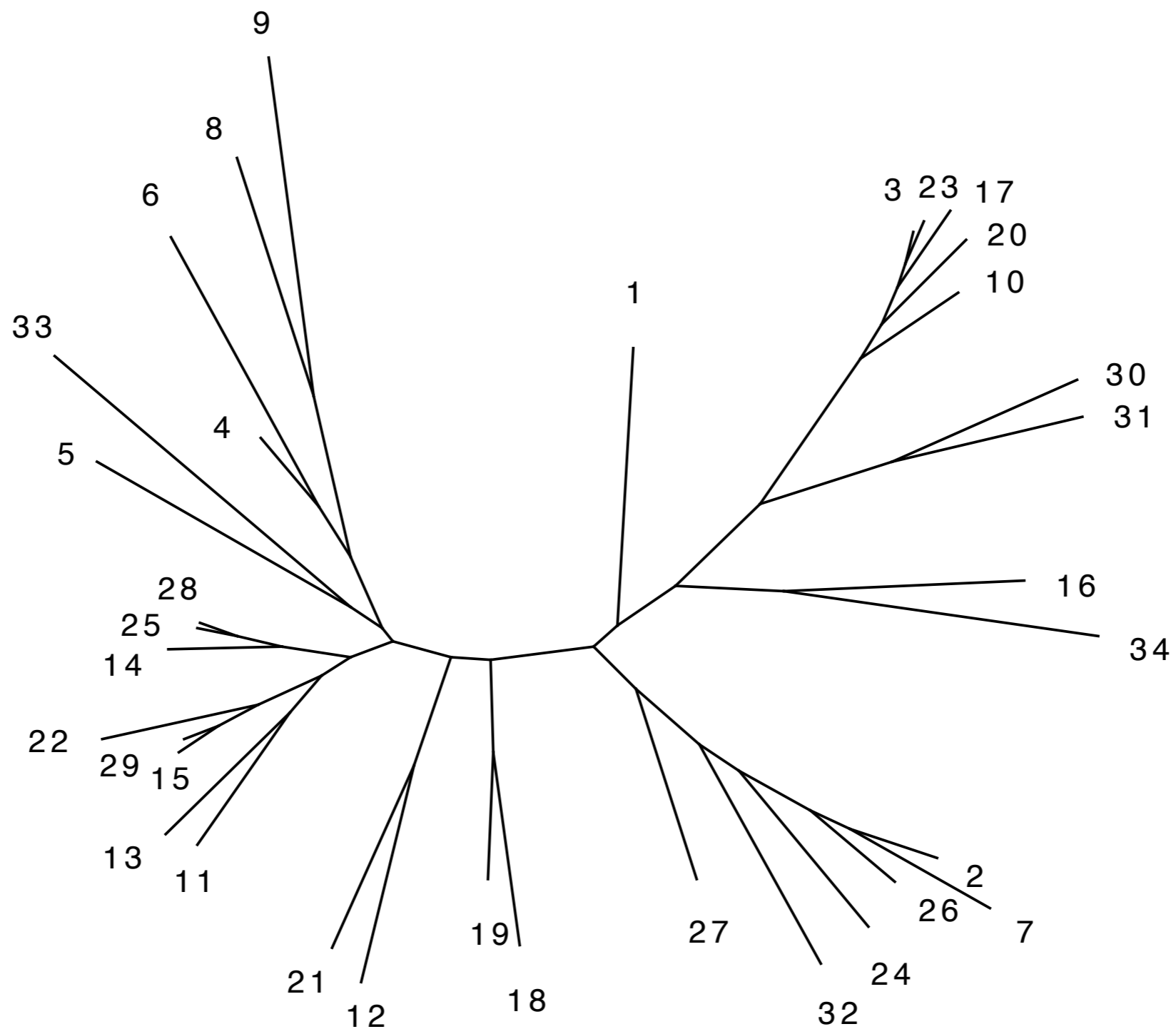
Language	Genus	Family	Macroarea	Alignment
Oromo	Eastern Cushitic	Afro-Asiatic	Africa	Marked nominative
Khoekhoe	Central Khoisan	Khoisan	Africa	Nominative-accusative
Ma'di	Moru-Ma'di	Nilo-Saharan	Africa	No case marking (?)
Albanian	Albanian	Indo-European	Europe	Nominative-accusative
Irish	Celtic	Indo-European	Europe	No case marking (?)
Faroese	Germanic	Indo-European	Europe	Nominative-accusative
Estonian	Finnic	Uralic	Europe	Nominative-accusative
Altai	Turkic	Altaic	Asia	Nominative-accusative
Azerbaijani	Turkic	Altaic	Asia	Nominative-accusative
Korean	Korean	Korean	Asia	Nominative-accusative
Akha	Burmese-Lolo	Sino-Tibetan	Asia	Ergative-absolutive (?)
Drehu	Oceanic	Austronesian	Pacific	Active-inactive
Nias	Sundic	Austronesian	Pacific	Marked absolutive
Greenlandic	Eskimo-Aleut	Eskimo-Aleut	America	Ergative-absolutive
Aymara	Aymaran	Aymaran	America	Marked Nominative (?)

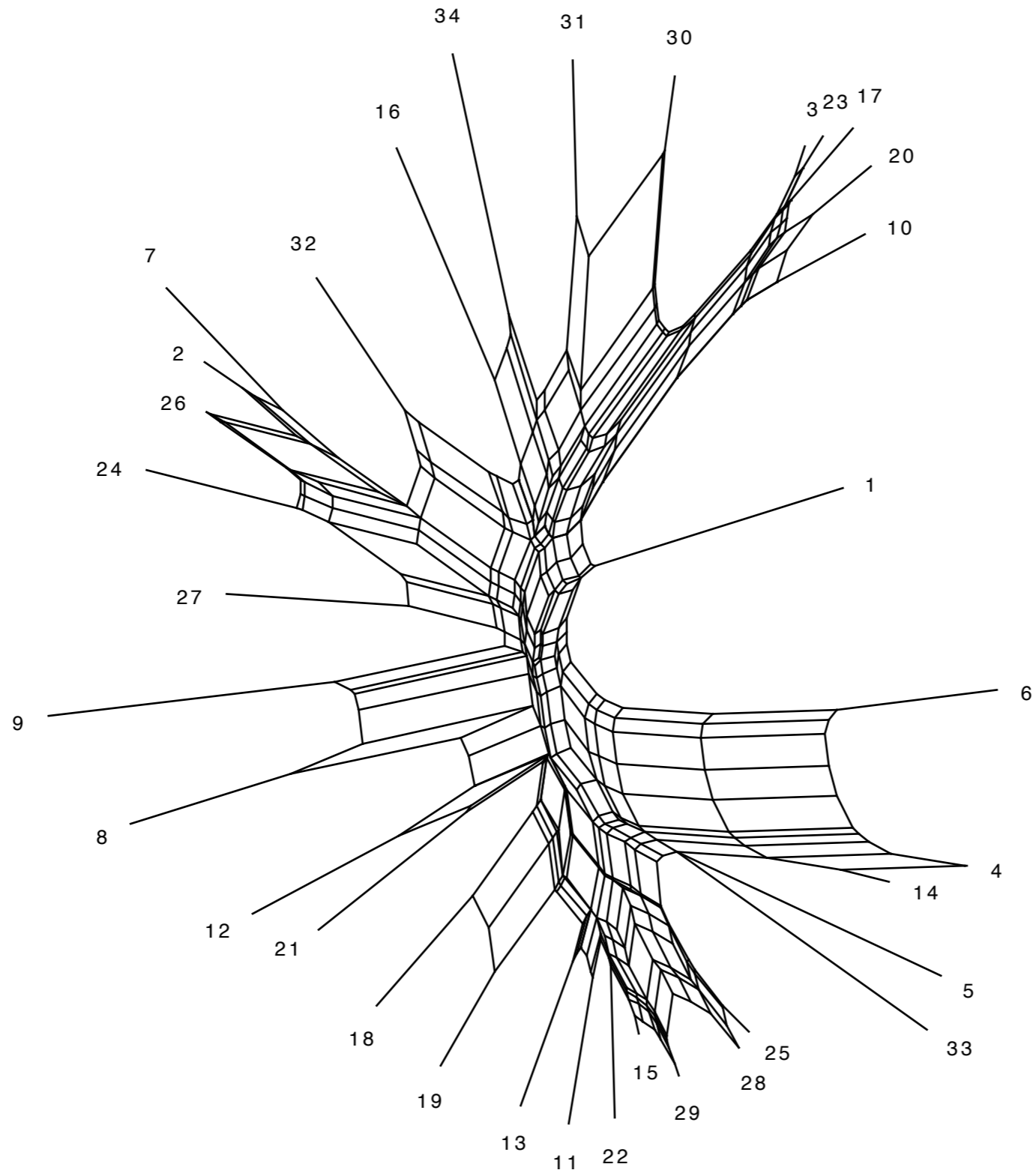
Albanian	Faroese	Estonian	Greenlandic
<i>bibla</i> Nominative	<i>biblian</i> Nominative	<i>piibel</i> Nominative	<i>biibilip</i> Ergative
<i>biblën</i> Accusative	<i>bibliuna</i> Accusative	<i>piiblit</i> Partitive	<i>biibli</i> Absolutive
<i>biblës</i> Genitive/Dative	<i>bibliunnar</i> Genitive	<i>piibli</i> Genitive	<i>biibilmik</i> Instrumental
...	<i>bibliuni</i> Dative	<i>piiblis</i> Inessive	<i>biibilmi</i> Locative
	...	<i>piiblist</i> Elativ	...
		...	

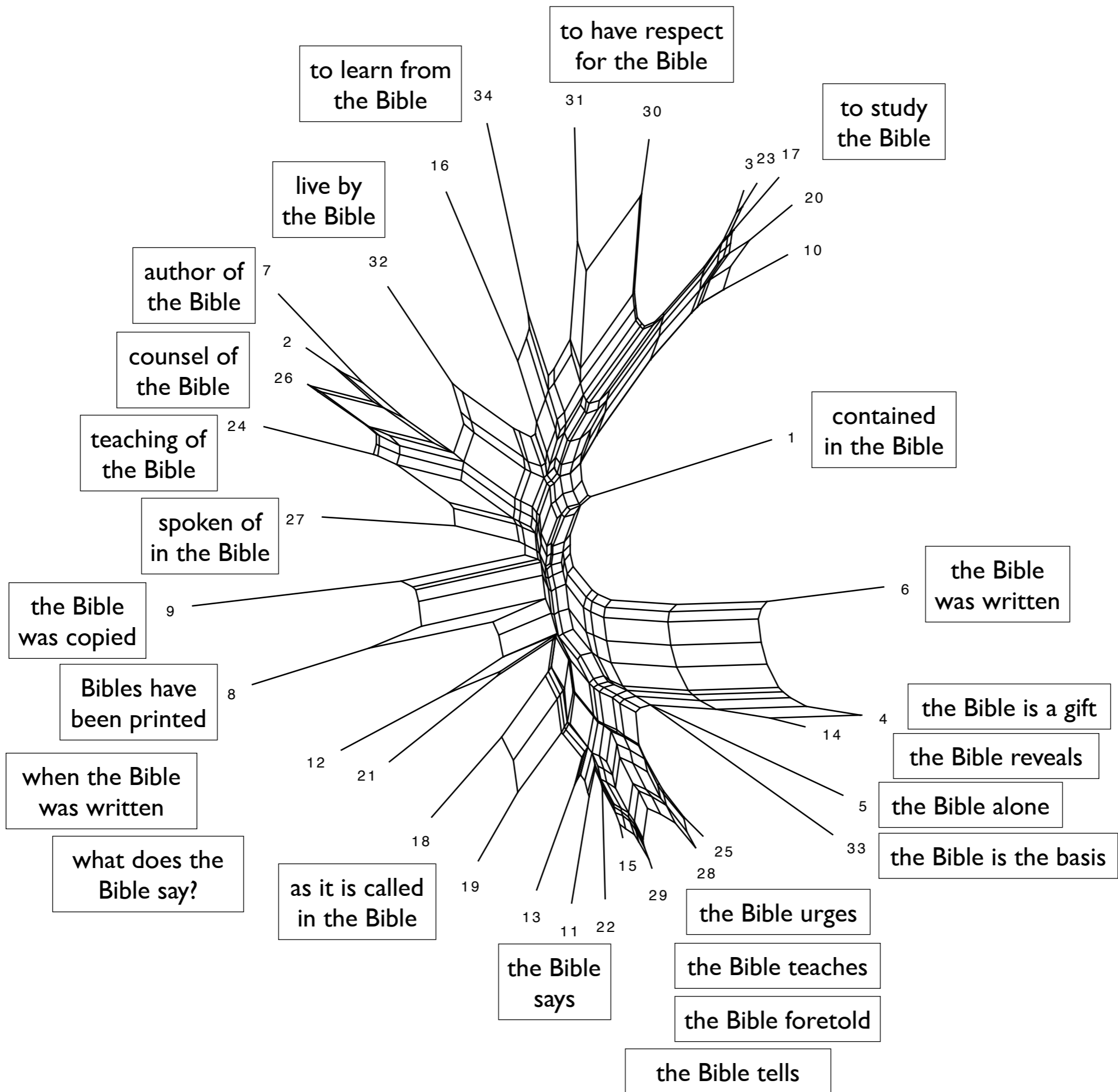
Context	Albanian	Faroese	Estonian	Greenlandic
1	bibla	bíbliuni	piibel	biibili
2	biblës	bíbliunnar	piibli	biibilimik
3	biblën	bíbliuna	piiblit	biibili
4	bibla	bíblían	piibel	biibili
5	bibla	bíblían	piibel	biibilip
6	bibla	bíbliuna	piibli	biibili
7	biblës	bíbliunnar	piibli	biibilimut
8	bibla	bíblían	piiblit	biibilip
9	bibla	NA	piiblit	biibili
10	biblën	bíbliuna	piiblit	biibilimik
11	bibla	bíblían	piibel	biibilimili
12	bibla	bíblían	piibel	biibilili
13	bibla	bíblían	piibel	biibilimi
14	bibla	bíblían	piibel	biibilimi
15	bibla	bíblían	piibel	biibilimi
16	bibla	bíbliuni	piibli	biibililu
17	biblën	bíbliuna	piiblit	biibilimik
18	bibla	bíblían	piiblis	biibilip
19	bibla	bíblían	piiblis	biibilimi
20	biblën	bíbliuna	piiblit	biibilimik
21	NA	bíblían	piibel	biibilimi
22	bibla	bíbliuni	piibel	biibili
23	biblën	bíbliuna	piiblit	biibilimillu
24	biblike	bíblían	piibli	biibilimi
25	bibla	bíblían	piibel	biibilimi
26	biblës	bíbliunnar	piibli	biibilimi
27	bibla	bíblían	piiblis	biibilimi
28	bibla	bíblían	piibel	biibilimi
29	bibla	bíblían	piibel	biibilimi
30	biblën	bíbliuna	piiblist	biibilimik
31	biblën	bíbliuni	piibli	biibilimik
32	biblës	bíbliuni	piibli	biibili
33	bibla	bíbliuna	piibel	biibilimik
34	bibla	bíbliuni	piiblist	biibilimeersunik

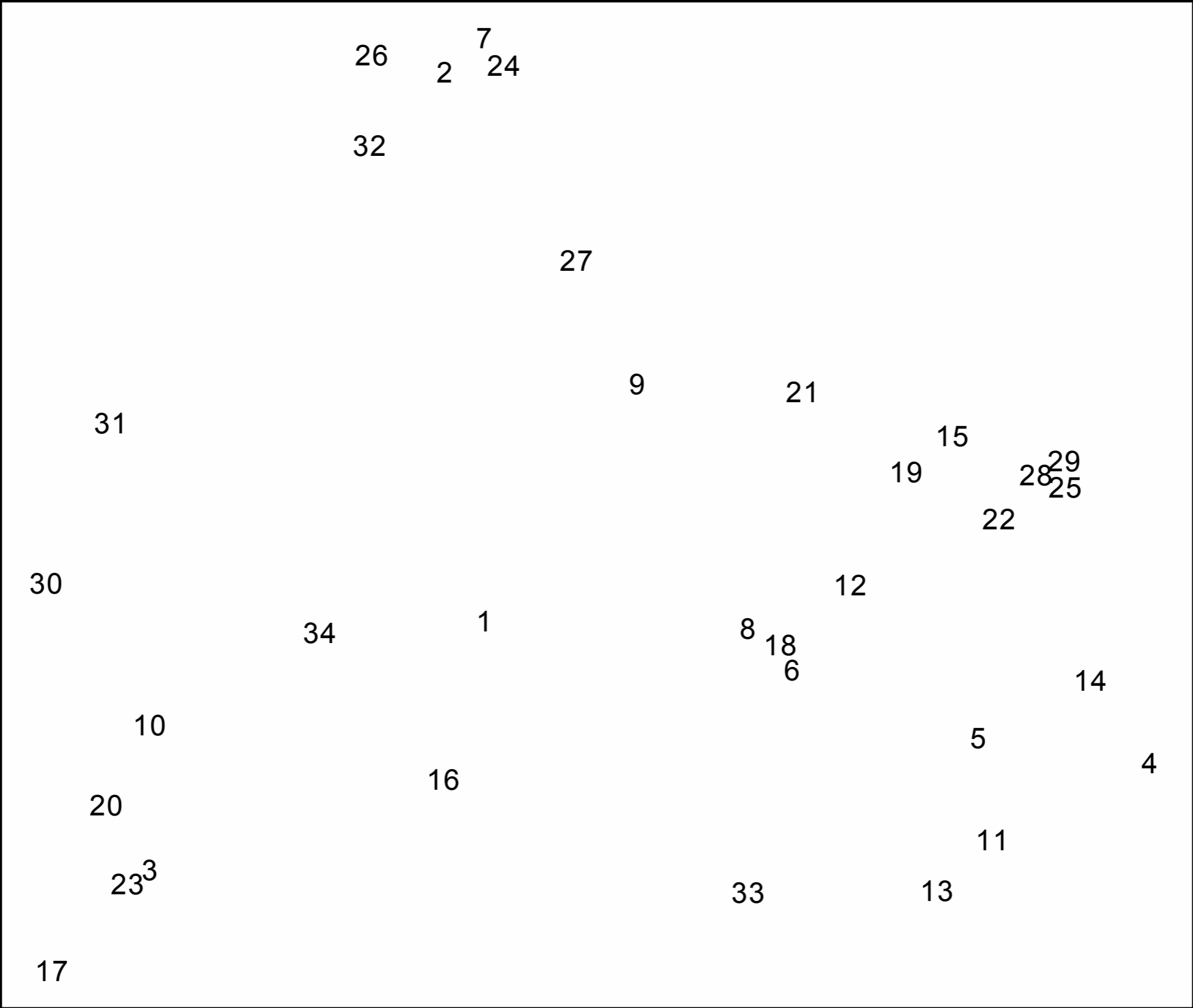
0.00	0.67	0.50	0.75	0.67	0.75	0.69	0.75	0.73	0.56	0.44	0.63	0.53	0.75	0.53	0.56	0.63	0.50	0.63	0.63	0.60	0.50	0.56	0.69	0.75	0.57	0.44	0.69	0.56	0.63	0.63	0.50	0.75	0.63
0.67	0.00	0.73	0.80	0.73	0.67	0.20	0.73	0.64	0.60	0.80	0.67	0.93	0.73	0.57	0.80	0.73	0.73	0.73	0.67	0.50	0.67	0.73	0.40	0.60	0.15	0.53	0.67	0.67	0.60	0.60	0.38	0.73	0.80
0.50	0.73	0.00	0.88	0.80	0.69	0.81	0.75	0.80	0.25	0.75	0.75	0.73	0.88	0.80	0.69	0.13	0.69	0.81	0.19	0.73	0.81	0.06	0.75	0.88	0.64	0.69	0.88	0.88	0.44	0.63	0.64	0.75	0.69
0.75	0.80	0.88	0.00	0.40	0.31	0.81	0.56	0.53	0.88	0.44	0.44	0.40	0.13	0.47	0.75	0.94	0.63	0.63	0.94	0.53	0.44	0.94	0.88	0.25	0.93	0.81	0.31	0.44	1.00	1.00	0.79	0.50	0.94
0.67	0.73	0.80	0.40	0.00	0.60	0.80	0.60	0.79	0.80	0.47	0.47	0.57	0.47	0.50	0.73	0.87	0.53	0.60	0.87	0.57	0.53	0.80	0.80	0.47	0.77	0.67	0.47	0.47	0.93	1.00	0.85	0.53	0.87
0.75	0.67	0.69	0.31	0.60	0.00	0.69	0.63	0.53	0.75	0.63	0.63	0.67	0.44	0.67	0.81	0.75	0.75	0.75	0.88	0.60	0.56	0.75	0.81	0.56	0.79	0.81	0.63	0.63	0.81	0.81	0.71	0.63	0.94
0.69	0.20	0.81	0.81	0.80	0.69	0.00	0.63	0.60	0.75	0.81	0.75	0.93	0.75	0.67	0.81	0.81	0.81	0.81	0.81	0.60	0.75	0.81	0.50	0.75	0.29	0.63	0.69	0.69	0.69	0.69	0.50	0.81	0.81
0.75	0.73	0.75	0.56	0.60	0.63	0.63	0.00	0.47	0.88	0.56	0.50	0.67	0.63	0.53	0.75	0.75	0.63	0.69	0.81	0.80	0.69	0.75	0.75	0.63	0.79	0.75	0.56	0.56	0.75	0.75	0.86	0.81	0.75
0.73	0.64	0.80	0.53	0.79	0.53	0.60	0.47	0.00	0.73	0.80	0.73	0.86	0.67	0.64	0.80	0.87	0.87	0.87	0.80	0.86	0.67	0.87	0.73	0.67	0.69	0.73	0.67	0.73	0.80	0.80	0.62	0.80	0.80
0.56	0.60	0.25	0.88	0.80	0.75	0.75	0.88	0.73	0.00	0.81	0.75	0.80	0.81	0.80	0.69	0.25	0.69	0.81	0.19	0.67	0.88	0.25	0.69	0.81	0.57	0.63	0.81	0.88	0.44	0.63	0.57	0.63	0.81
0.44	0.80	0.75	0.44	0.47	0.63	0.81	0.56	0.80	0.81	0.00	0.56	0.27	0.38	0.27	0.69	0.81	0.44	0.44	0.81	0.53	0.31	0.75	0.81	0.38	0.86	0.63	0.31	0.19	0.88	0.88	0.86	0.56	0.81
0.63	0.67	0.75	0.44	0.47	0.63	0.75	0.50	0.73	0.75	0.56	0.00	0.53	0.50	0.47	0.69	0.81	0.44	0.56	0.81	0.33	0.63	0.75	0.63	0.50	0.64	0.63	0.56	0.56	0.88	0.88	0.71	0.69	0.81
0.53	0.93	0.73	0.40	0.57	0.67	0.93	0.67	0.86	0.80	0.27	0.53	0.00	0.27	0.36	0.60	0.73	0.40	0.33	0.80	0.43	0.40	0.73	0.73	0.33	0.77	0.60	0.33	0.33	0.80	0.80	0.85	0.60	0.73
0.75	0.73	0.88	0.13	0.47	0.44	0.75	0.63	0.67	0.81	0.38	0.50	0.27	0.00	0.33	0.69	0.88	0.56	0.50	0.88	0.40	0.44	0.88	0.75	0.13	0.79	0.69	0.19	0.31	0.94	0.94	0.79	0.44	0.88
0.53	0.57	0.80	0.47	0.50	0.67	0.67	0.53	0.64	0.80	0.27	0.47	0.36	0.33	0.00	0.73	0.87	0.33	0.27	0.80	0.50	0.20	0.80	0.53	0.20	0.57	0.33	0.20	0.07	0.80	0.80	0.64	0.60	0.73
0.56	0.80	0.69	0.75	0.73	0.81	0.81	0.75	0.80	0.69	0.69	0.69	0.60	0.69	0.73	0.00	0.63	0.63	0.75	0.69	0.80	0.75	0.69	0.75	0.75	0.71	0.75	0.75	0.81	0.69	0.56	0.57	0.63	0.44
0.63	0.73	0.13	0.94	0.87	0.75	0.81	0.75	0.87	0.25	0.81	0.81	0.73	0.88	0.87	0.63	0.00	0.75	0.88	0.19	0.80	0.94	0.13	0.81	0.94	0.71	0.75	0.94	0.94	0.31	0.50	0.79	0.63	0.63
0.50	0.73	0.69	0.63	0.53	0.75	0.81	0.63	0.87	0.69	0.44	0.44	0.40	0.56	0.33	0.63	0.75	0.00	0.25	0.75	0.53	0.44	0.69	0.63	0.56	0.64	0.38	0.56	0.44	0.81	0.81	0.64	0.69	0.69
0.63	0.73	0.81	0.63	0.60	0.75	0.81	0.69	0.87	0.81	0.44	0.56	0.33	0.50	0.27	0.75	0.88	0.25	0.00	0.81	0.47	0.31	0.81	0.56	0.38	0.57	0.31	0.38	0.25	0.81	0.81	0.64	0.69	0.75
0.63	0.67	0.19	0.94	0.87	0.88	0.81	0.81	0.80	0.19	0.81	0.81	0.80	0.88	0.80	0.69	0.19	0.75	0.81	0.00	0.80	0.88	0.19	0.75	0.81	0.64	0.69	0.81	0.88	0.44	0.63	0.64	0.69	0.69
0.60	0.50	0.73	0.53	0.57	0.60	0.60	0.80	0.86	0.67	0.53	0.33	0.43	0.40	0.50	0.80	0.80	0.53	0.47	0.80	0.00	0.60	0.73	0.40	0.40	0.46	0.53	0.47	0.47	0.80	0.80	0.62	0.67	0.87
0.50	0.67	0.81	0.44	0.53	0.56	0.75	0.69	0.67	0.88	0.31	0.63	0.40	0.44	0.20	0.75	0.94	0.44	0.31	0.88	0.60	0.00	0.88	0.75	0.31	0.71	0.56	0.31	0.19	0.88	0.81	0.57	0.56	0.75
0.56	0.73	0.06	0.94	0.80	0.75	0.81	0.75	0.87	0.25	0.75	0.75	0.73	0.88	0.80	0.69	0.13	0.69	0.81	0.19	0.73	0.88	0.00	0.75	0.88	0.64	0.69	0.88	0.88	0.44	0.63	0.71	0.75	0.69
0.69	0.40	0.75	0.88	0.80	0.81	0.50	0.75	0.73	0.69	0.81	0.63	0.73	0.75	0.53	0.75	0.81	0.63	0.56	0.75	0.40	0.75	0.75	0.00	0.63	0.21	0.38	0.63	0.63	0.69	0.63	0.43	0.81	0.75
0.75	0.60	0.88	0.25	0.47	0.56	0.75	0.63	0.67	0.81	0.38	0.50	0.33	0.13	0.20	0.75	0.94	0.56	0.38	0.81	0.40	0.31	0.88	0.63	0.00	0.64	0.56	0.06	0.19	0.88	0.88	0.64	0.50	0.81
0.57	0.15	0.64	0.93	0.77	0.79	0.29	0.79	0.69	0.57	0.86	0.64	0.77	0.79	0.57	0.71	0.71	0.64	0.57	0.64	0.46	0.71	0.64	0.21	0.64	0.00	0.36	0.64	0.64	0.57	0.57	0.31	0.86	0.71
0.44	0.53	0.69	0.81	0.67	0.81	0.63	0.75	0.73	0.63	0.63	0.63	0.60	0.69	0.33	0.75	0.75	0.38	0.31	0.69	0.53	0.56	0.69	0.38	0.56	0.36	0.00	0.56	0.44	0.63	0.63	0.43	0.81	0.69
0.69	0.67	0.88	0.31	0.47	0.63	0.69	0.56	0.67	0.81	0.31	0.56	0.33	0.19	0.20	0.75	0.94	0.56	0.38	0.81	0.47	0.31	0.88	0.63	0.06	0.64	0.56	0.00	0.13	0.88	0.88	0.64	0.50	0.81
0.56	0.67	0.88	0.44	0.47	0.63	0.69	0.56	0.73	0.88	0.19	0.56	0.33	0.31	0.07	0.81	0.94	0.44	0.25	0.88	0.47	0.19	0.88	0.63	0.19	0.64	0.44	0.13	0.00	0.88	0.88	0.71	0.56	0.81
0.63	0.60	0.44	1.00	0.93	0.81	0.69	0.75	0.80	0.44	0.88	0.88	0.80	0.94	0.80	0.69	0.31	0.81	0.81	0.44	0.80	0.88	0.44	0.69	0.88	0.57	0.63	0.88	0.88	0.00	0.31	0.57	0.75	0.56
0.63	0.60	0.63	1.00	1.00	0.81	0.69	0.75	0.80	0.63	0.88	0.88	0.80	0.94	0.80	0.56	0.50	0.81	0.81	0.63	0.80	0.81	0.63	0.63	0.88	0.57	0.63	0.88	0.88	0.31	0.00	0.36	0.81	0.56
0.50	0.38	0.64	0.79	0.85	0.71	0.50	0.86	0.62	0.57	0.86	0.71	0.85	0.79	0.64	0.57	0.79	0.64	0.64	0.64	0.62	0.57	0.71	0.43	0.64	0.31	0.43	0.64	0.71	0.57	0.36	0.00	0.79	0.64
0.75	0.73	0.75	0.50	0.53	0.63	0.81	0.81	0.80	0.63	0.56	0.69	0.60	0.44	0.60	0.63	0.63	0.69	0.69	0.69	0.67	0.56	0.75	0.81	0.50	0.86	0.81	0.50	0.56	0.75	0.81	0.79	0.00	0.81
0.63	0.80	0.69	0.94	0.87	0.94	0.81	0.75	0.80	0.81	0.81	0.81	0.73	0.88	0.73	0.44	0.63	0.69	0.75	0.69	0.87	0.75	0.69	0.75	0.81	0.71	0.69	0.81	0.81	0.56	0.56	0.64	0.81	0.00

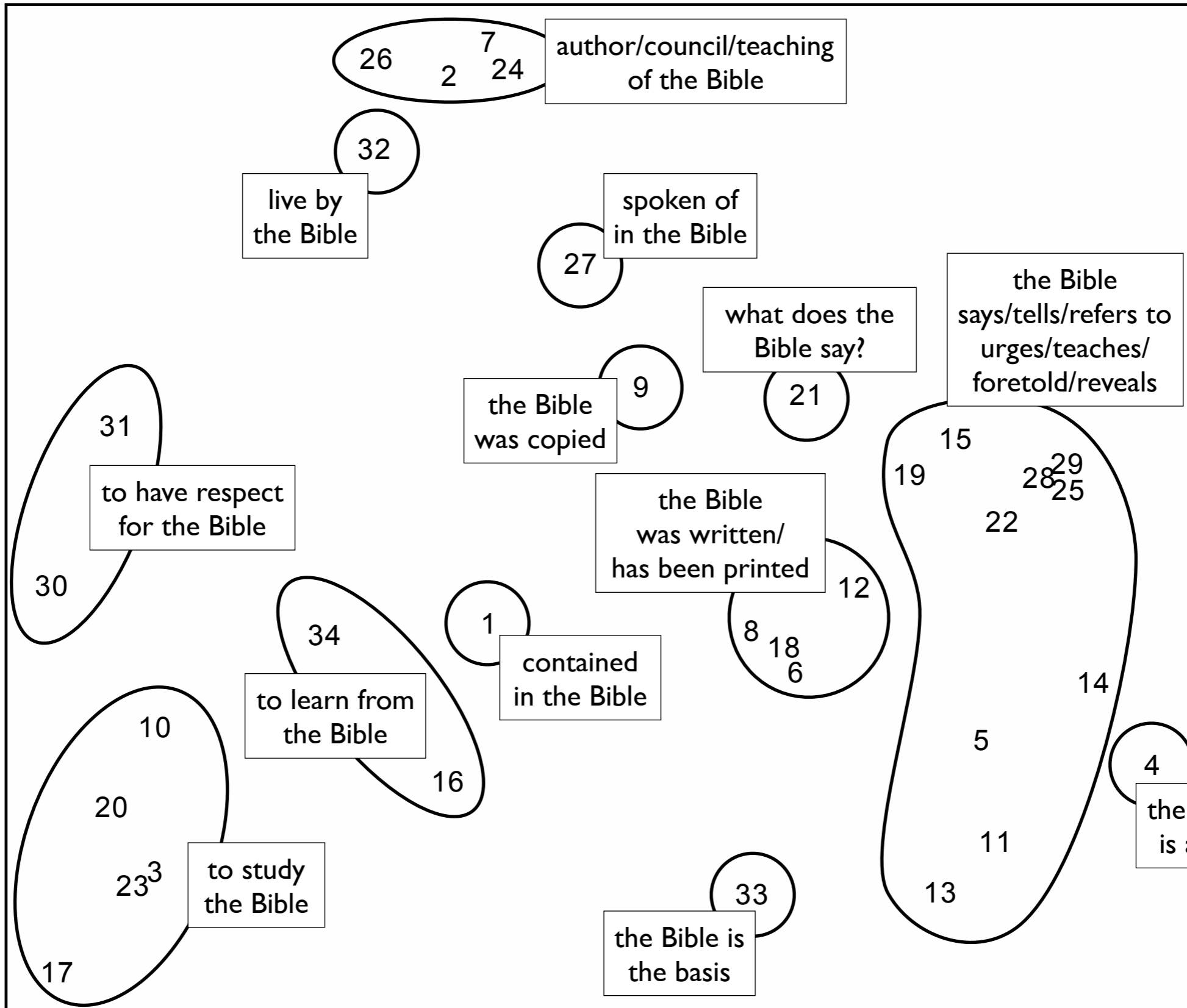
0.00	0.67	0.50	0.75	0.67	0.75	0.69	0.75	0.73	0.56	0.44	0.63	0.53	0.75	0.53	0.56	0.63	0.50	0.63	0.63	0.60	0.50	0.56	0.69	0.75	0.57	0.44	0.69	0.56	0.63	0.63	0.50	0.75	0.63														
0.67	0.00	0.73	0.80	0.73	0.67	0.20	0.73	0.64	0.60	0.80	0.67	0.93	0.73	0.57	0.80	0.73	0.73	0.73	0.67	0.50	0.67	0.73	0.40	0.60	0.15	0.53	0.67	0.67	0.60	0.60	0.38	0.73	0.80														
0.50	0.73	0.00	0.88	0.80	0.69	0.81	0.75	0.80	0.25	0.75	0.75	0.13			0.69	0.13	0.69	0.81	0.19	0.73	0.81	0.06	0.75	0.88	0.64	0.69	0.88	0.88	0.44	0.63	0.64	0.75	0.69														
0.75	0.80	0.88	0.00	0.40	0.31	0.81	0.56	0.53	0.88	0.44	0.44				0.75	0.94	0.63	0.63	0.94	0.53	0.44	0.94	0.88	0.25	0.93	0.81	0.31	0.44	1.00	1.00	0.79	0.50	0.94														
0.67	0.73	0.80	0.40	0.00	0.60	0.80	0.60	0.79	0.80	0.47	0.47				0.73	0.87	0.53	0.60	0.87	0.57	0.53	0.80	0.80	0.47	0.77	0.67	0.47	0.47	0.93	1.00	0.85	0.53	0.87														
0.75	0.67	0.69	0.31	0.60	0.00	0.69	0.63	0.53	0.75	0.63	0.63	0.67	0.44	0.67	0.81	0.75	0.75	0.75	0.88	0.60	0.56	0.75	0.81	0.56	0.79	0.81	0.63	0.63	0.81	0.81	0.71	0.63	0.94														
0.69	0.20	0.81	0.81	0.80	0.69	0.00	0.63	0.60	0.75	0.81	0.75	0.93	0.75	0.67	0.81	0.81	0.81	0.81	0.81	0.60	0.75	0.81	0.50	0.75	0.29	0.63	0.69	0.69	0.69	0.69	0.50	0.81	0.81														
0.75	0.73	0.75	0.56	0.60	0.63	0.63	0.00	0.47	0.88	0.56	0.50	0.67	0.63	0.53	0.75	0.75	0.63	0.69	0.81	0.80	0.69	0.75	0.75	0.63	0.79	0.75	0.56	0.56	0.75	0.75	0.86	0.81	0.75														
0.73	0.64	0.80	0.53	0.79	0.53	0.60	0.47	0.00	0.73	0.80	0.73	0.86	0.67	0.64	0.80	0.87	0.87	0.87	0.80	0.86	0.67	0.87	0.73	0.67	0.69	0.73	0.67	0.73	0.80	0.80	0.62	0.80	0.80														
0.56	0.60	0.25	0.88	0.80	0.75	0.75	0.88	0.73	0.00	0.81	0.75	0.80	0.81	0.80	0.69	0.25	0.69	0.81	0.19	0.67	0.88	0.25	0.69	0.81	0.57	0.63	0.81	0.88	0.44	0.63	0.57	0.63	0.81														
0.44	0.80	0.75	0.44	0.47	0.63	0.81	0.56	0.80	0.81	0.00	0.56	0.27	0.38	0.27	0.69	0.81	0.44	0.44	0.81	0.53	0.31	0.75	0.81	0.38	0.86	0.63	0.31	0.19	0.88	0.88	0.86	0.56	0.81														
0.63	0.67	<p>On average, there is a small difference between the role in context 4 and 14</p> <p>4: The Bible is a precious gift from God.</p> <p>14: The Bible reveals Jehovah's personality to us.</p>														0.81	0.33	0.63	0.75	0.63	0.50	0.64	0.63	0.56	0.56	0.88	0.88	0.71	0.69	0.81																	
0.53	0.93															0.80	0.43	0.40	0.73	0.73	0.33	0.77	0.60	0.33	0.33	0.80	0.80	0.85	0.60	0.73																	
0.75	0.73															0.88	0.40	0.44	0.88	0.75	0.13	0.79	0.69	0.19	0.31	0.94	0.94	0.79	0.44	0.88																	
0.53	0.57															0.80	0.50	0.20	0.80	0.53	0.20	0.57	0.33	0.20	0.07	0.80	0.80	0.64	0.60	0.73																	
0.56	0.80															0.69	0.80	0.75	0.69	0.75	0.75	0.71	0.75	0.75	0.81	0.69	0.56	0.57	0.63	0.44																	
0.63	0.73															0.19	0.80	0.94	0.13	0.81	0.94	0.71	0.75	0.94	0.94	0.31	0.50	0.79	0.63	0.63																	
0.50	0.73															0.75	0.53	0.44	0.69	0.63	0.56	0.64	0.38	0.56	0.44	0.81	0.81	0.64	0.69	0.69																	
0.63	0.73															0.81	0.47	0.31	0.81	0.56	0.38	0.57	0.31	0.38	0.25	0.81	0.81	0.64	0.69	0.75																	
0.63	0.67															0.00	0.80	0.88	0.19	0.75	0.81	0.64	0.69	0.81	0.88	0.44	0.63	0.64	0.69	0.69																	
0.60	0.50															0.80	0.00	0.60	0.73	0.40	0.40	0.46	0.53	0.47	0.47	0.80	0.80	0.62	0.67	0.87																	
0.50	0.67															0.88	0.60	0.00	0.88	0.75	0.31	0.71	0.56	0.31	0.19	0.88	0.81	0.57	0.56	0.75																	
0.56	0.73															0.19	0.73	0.88	0.00	0.75	0.88	0.64	0.69	0.88	0.88	0.44	0.63	0.71	0.75	0.69																	
0.69	0.40															0.75	0.88	0.80	0.81	0.50	0.75	0.73	0.69	0.81	0.63	0.73	0.75	0.53	0.75	0.81	0.63	0.56	0.75	0.40	0.75	0.75	0.00	0.63	0.21	0.38	0.63	0.63	0.69	0.63	0.43	0.81	0.75
0.75	0.60															0.88	0.25	0.47	0.56	0.75	0.63	0.67	0.81	0.38	0.50	0.33	0.13	0.20	0.75	0.94	0.56	0.38	0.81	0.40	0.31	0.88	0.63	0.00	0.64	0.56	0.06	0.19	0.88	0.88	0.64	0.50	0.81
0.57	0.15	0.64	0.93	0.77	0.79	0.29	0.79	0.69	0.57	0.86	0.64	0.77	0.79	0.57	0.71	0.71	0.64	0.57	0.64	0.46	0.71	0.64	0.21	0.64	0.00	0.36	0.64	0.64	0.57	0.57	0.31	0.86	0.71														
0.44	0.53	0.69	0.81	0.67	0.81	0.63	0.75	0.73	0.63	0.63	0.63	0.60	0.69	0.33	0.75	0.75	0.38	0.31	0.69	0.53	0.56	0.69	0.38	0.56	0.36	0.00	0.56	0.44	0.63	0.63	0.43	0.81	0.69														
0.69	0.67	0.88	0.31	0.47	0.63	0.69	0.56	0.67	0.81	0.31	0.56	0.33	0.19	0.20	0.75	0.94	0.56	0.38	0.81	0.47	0.31	0.88	0.63	0.06	0.64	0.56	0.00	0.13	0.88	0.88	0.64	0.50	0.81														
0.56	0.67	0.88	0.44	0.47	0.63	0.69	0.56	0.73	0.88	0.19	0.56	0.33	0.31	0.07	0.81	0.94	0.44	0.25	0.88	0.47	0.19	0.88	0.63	0.19	0.64	0.44	0.13	0.00	0.88	0.88	0.71	0.56	0.81														
0.63	0.60	0.44	1.00	0.93	0.81	0.69	0.75	0.80	0.44	0.88	0.88	0.80	0.94	0.80	0.69	0.31	0.81	0.81	0.44	0.80	0.88	0.44	0.69	0.88	0.57	0.63	0.88	0.88	0.00	0.31	0.57	0.75	0.56														
0.63	0.60	0.63	1.00	1.00	0.81	0.69	0.75	0.80	0.63	0.88	0.88	0.80	0.94	0.80	0.56	0.50	0.81	0.81	0.63	0.80	0.81	0.63	0.63	0.88	0.57	0.63	0.88	0.88	0.31	0.00	0.36	0.81	0.56														
0.50	0.38	0.64	0.79	0.85	0.71	0.50	0.86	0.62	0.57	0.86	0.71	0.85	0.79	0.64	0.57	0.79	0.64	0.64	0.64	0.62	0.57	0.71	0.43	0.64	0.31	0.43	0.64	0.71	0.57	0.36	0.00	0.79	0.64														
0.75	0.73	0.75	0.50	0.53	0.63	0.81	0.81	0.80	0.63	0.56	0.69	0.60	0.44	0.60	0.63	0.63	0.69	0.69	0.69	0.67	0.56	0.75	0.81	0.50	0.86	0.81	0.50	0.56	0.75	0.81	0.79	0.00	0.81														
0.63	0.80	0.69	0.94	0.87	0.94	0.81	0.75	0.80	0.81	0.81	0.81	0.73	0.88	0.73	0.44	0.63	0.69	0.75	0.69	0.87	0.75	0.69	0.75	0.81	0.71	0.69	0.81	0.81	0.56	0.56	0.64	0.81	0.00														



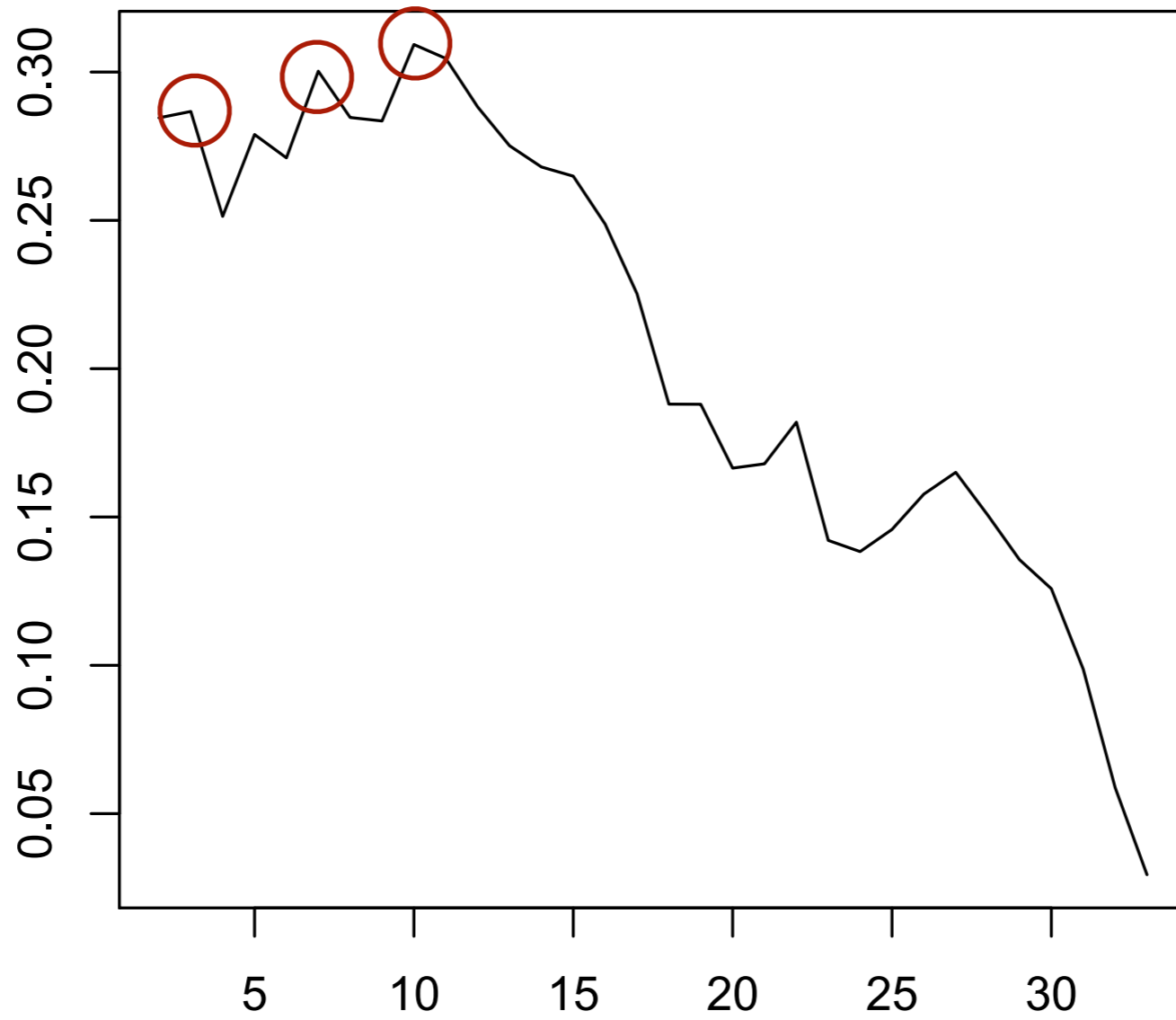




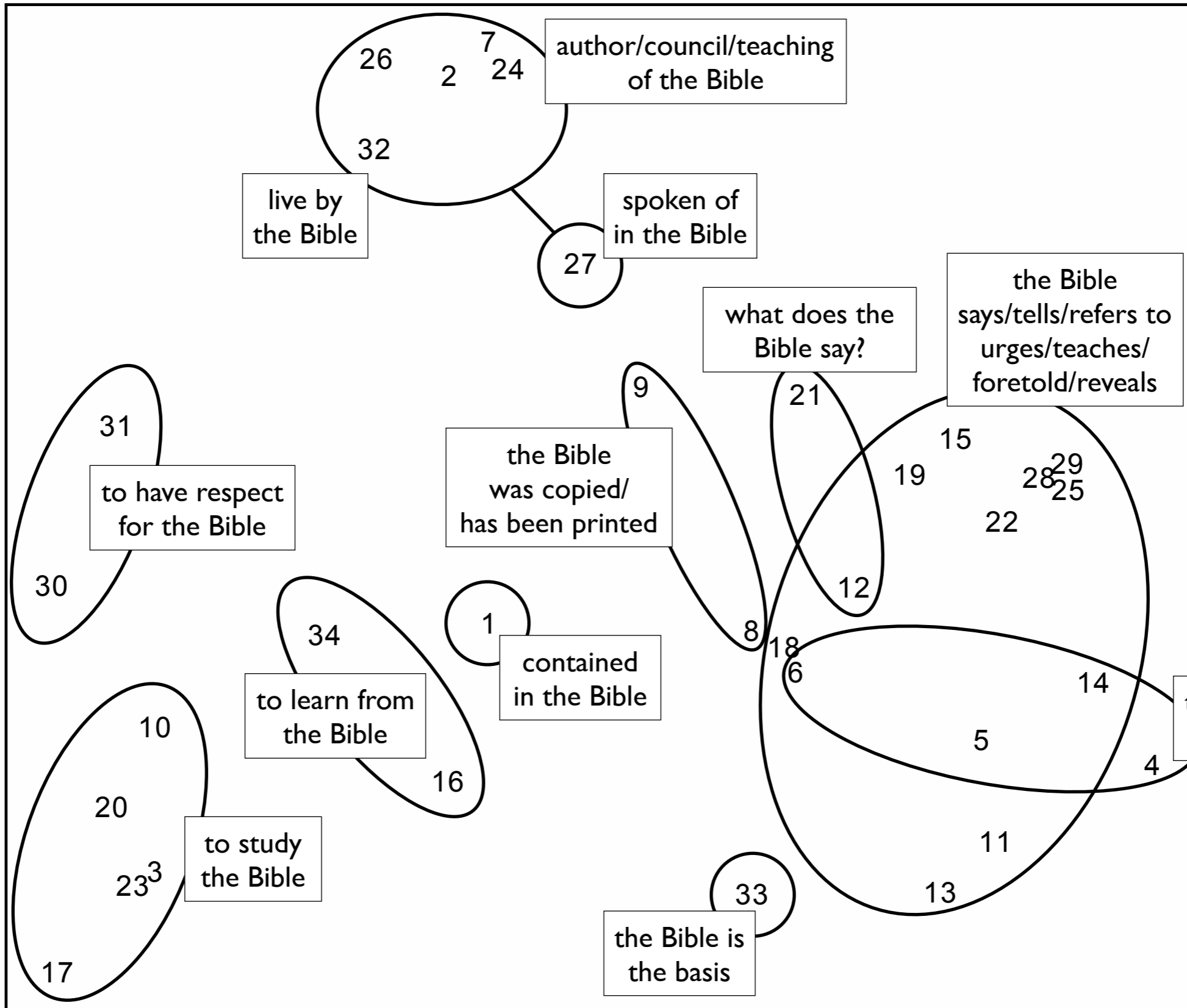


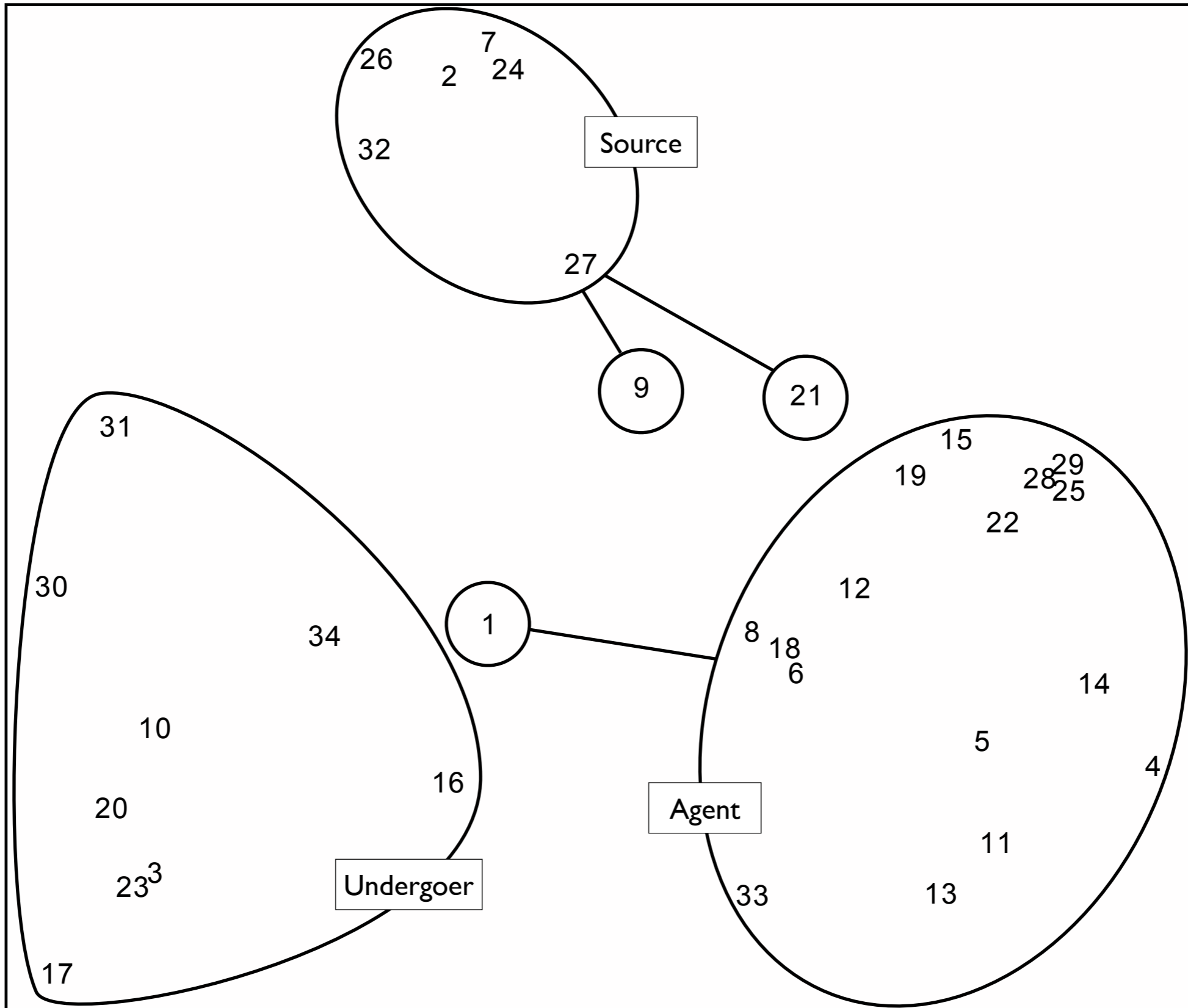


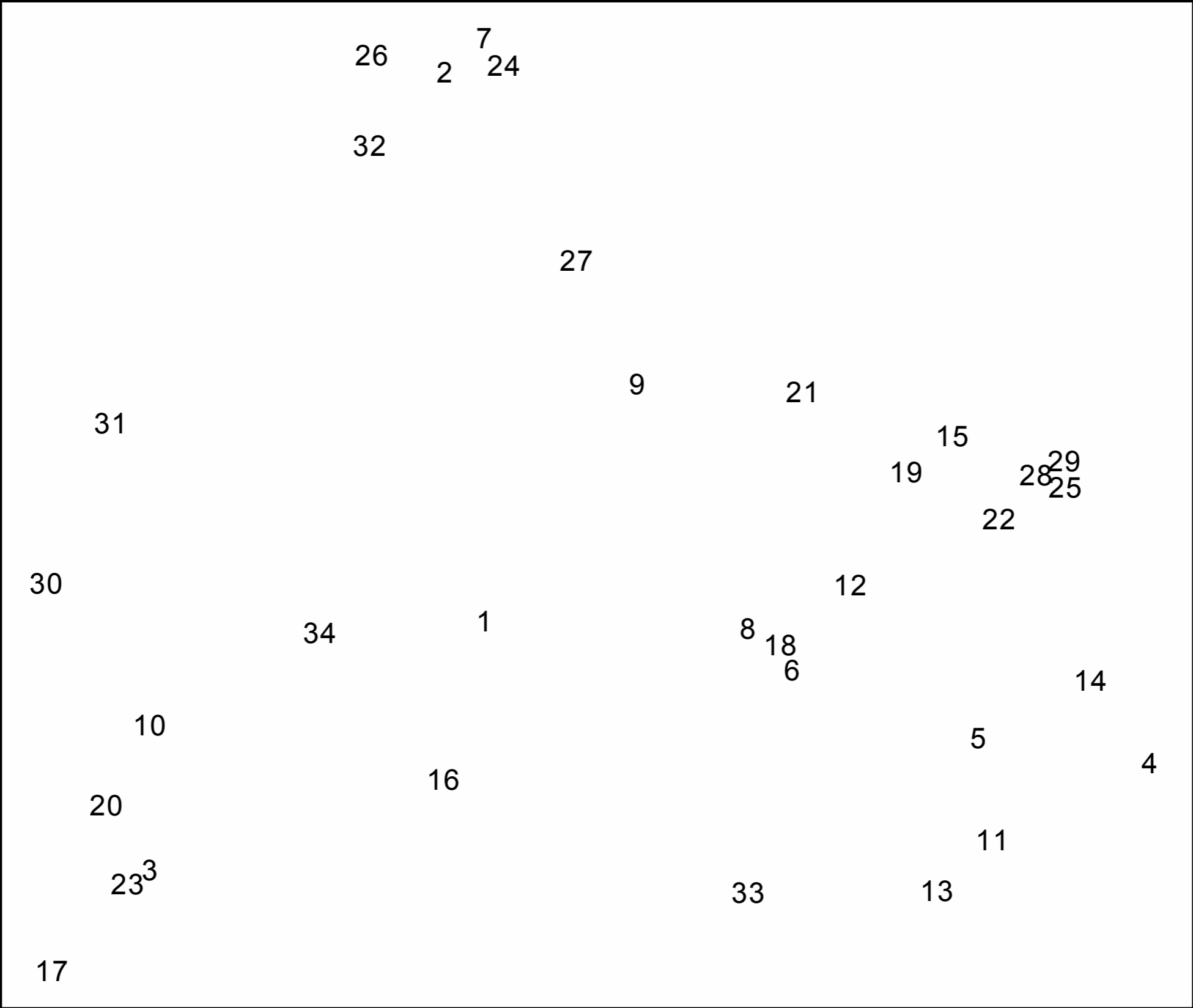
“Fit” of clustering



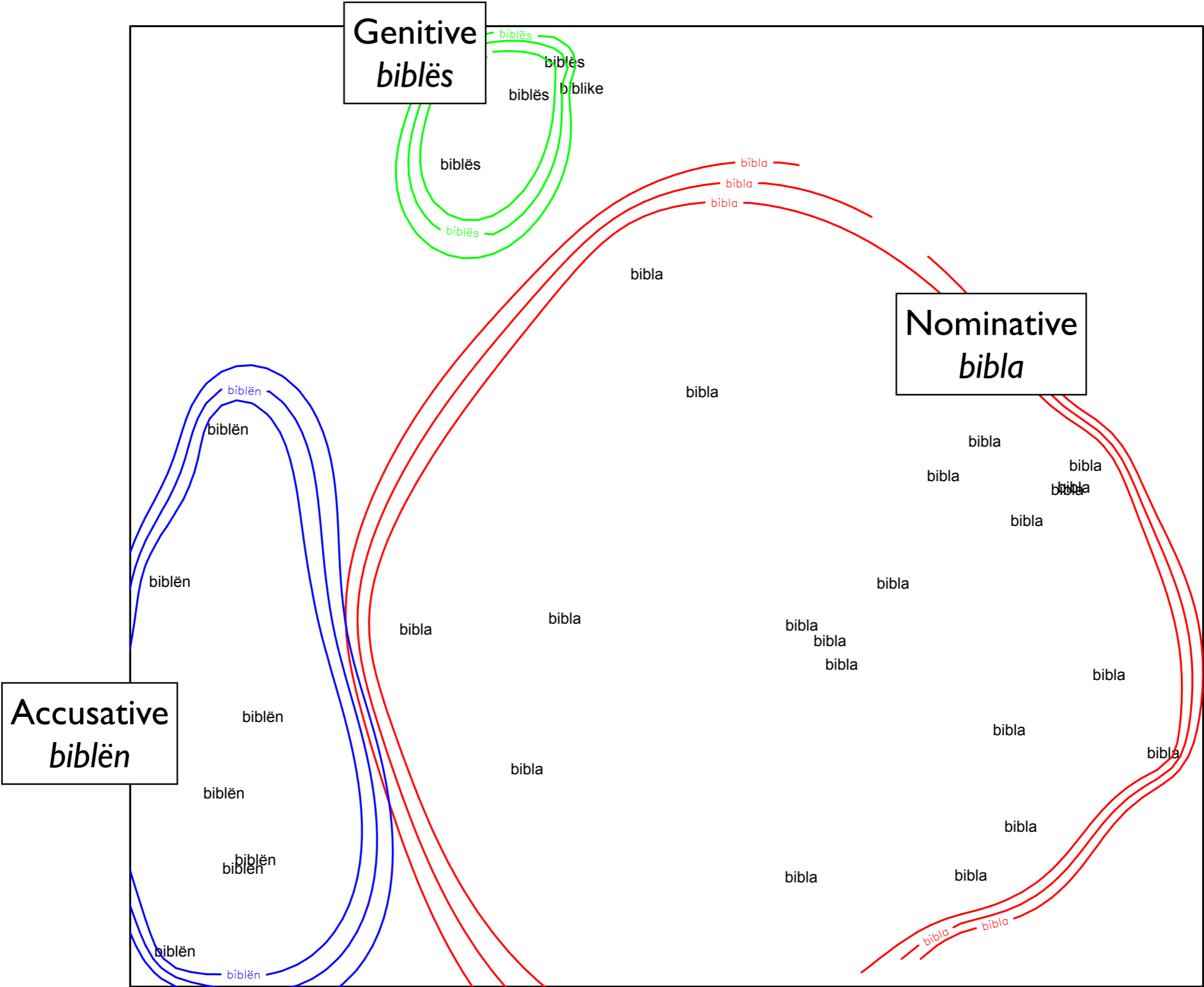
Number of clusters







albanian



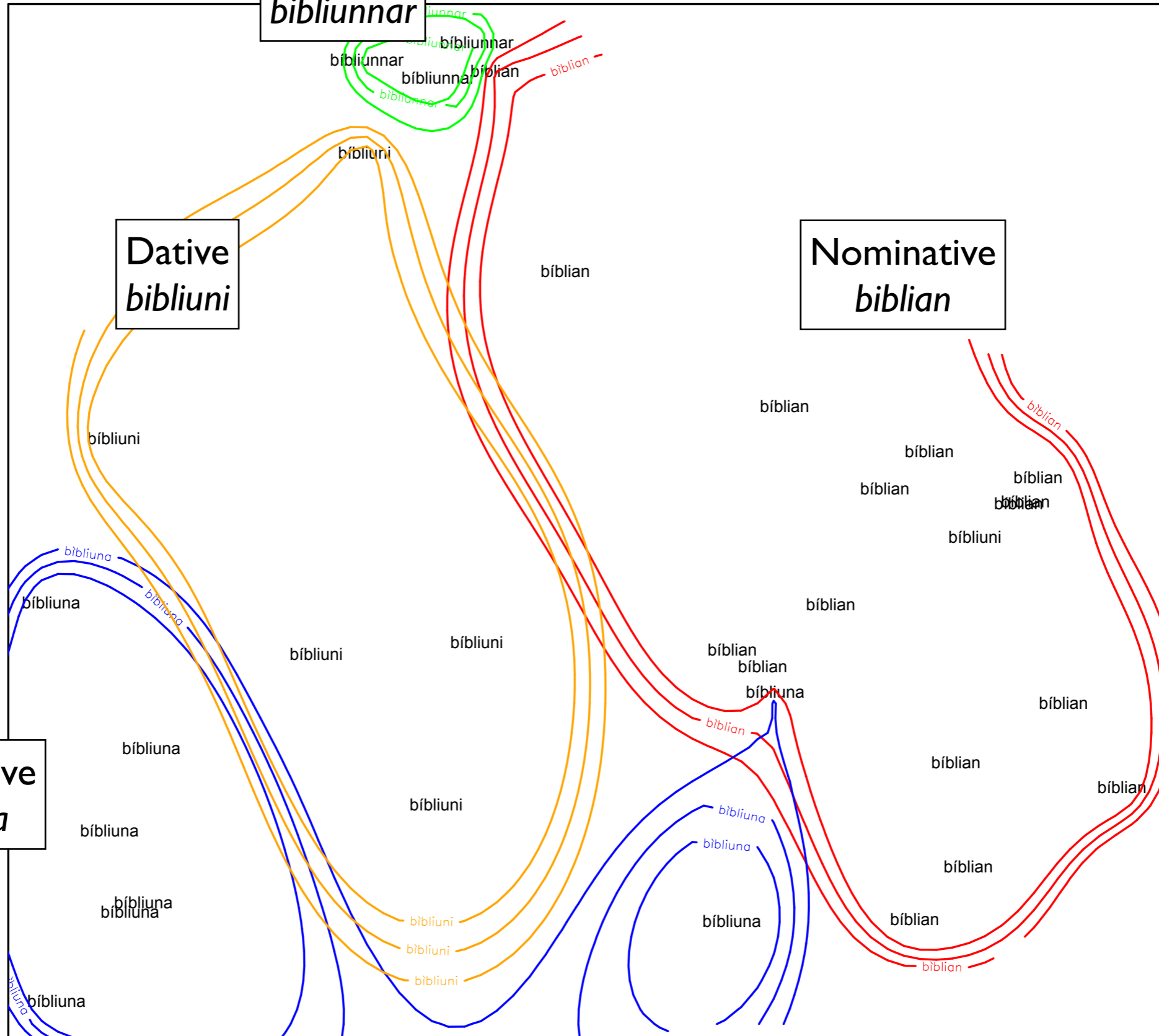
faroese

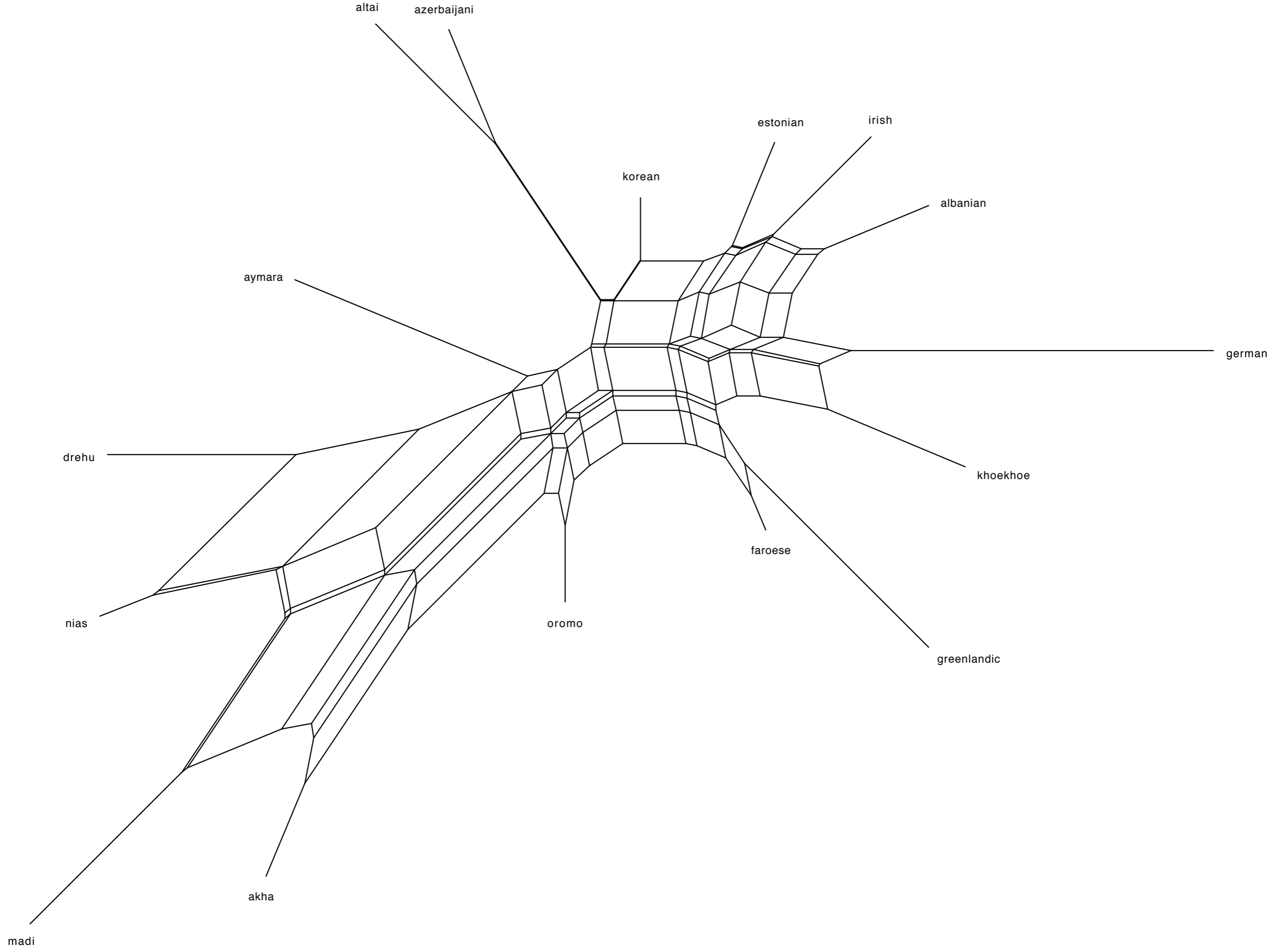
Genitive
bibliunnar

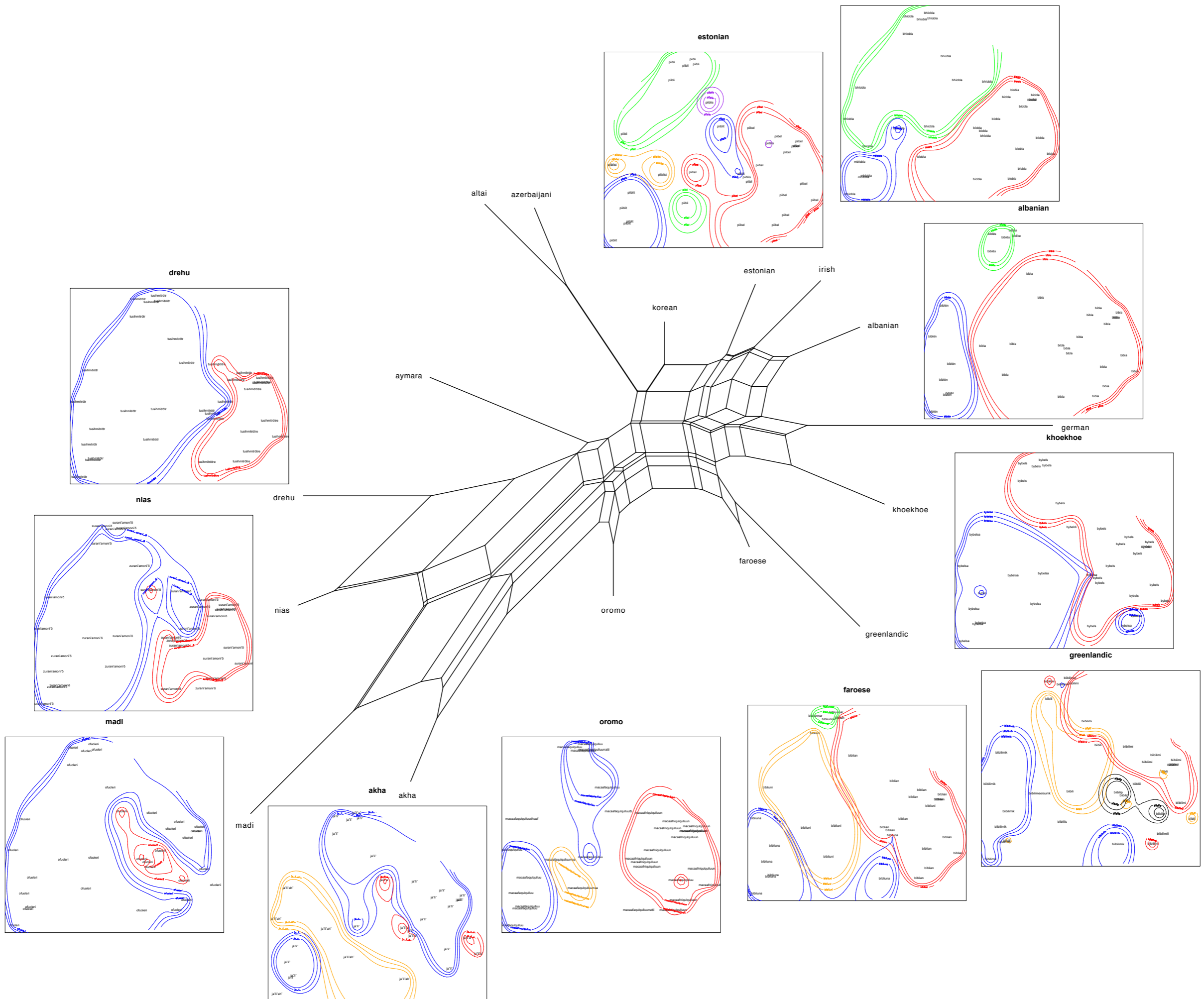
Dative
bibliuni

Nominative
biblian

Accusative
bibliuna







estonian

irish

albanian

drehu

estonian

irish

albanian

korean

german

khoekhoe

aymara

khoekhoe

faroese

oromo

greenlandic

greenlandic

nias

drehu

faroese

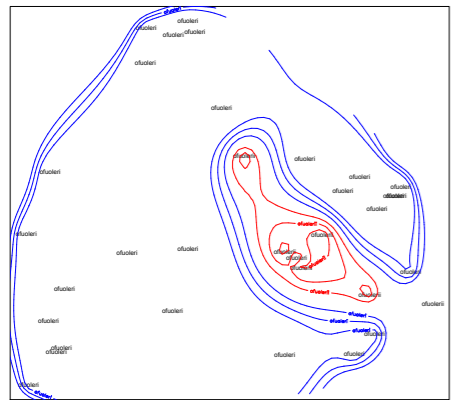
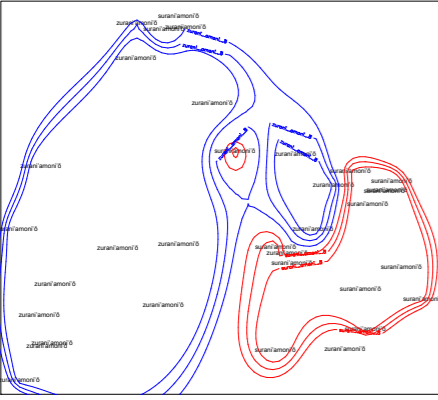
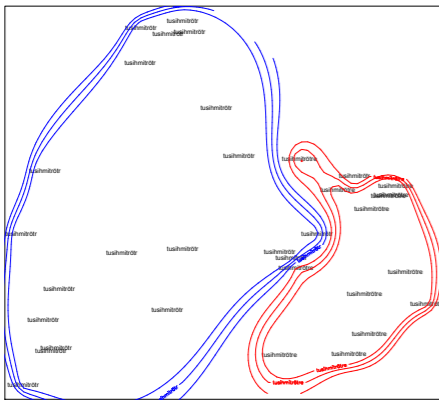
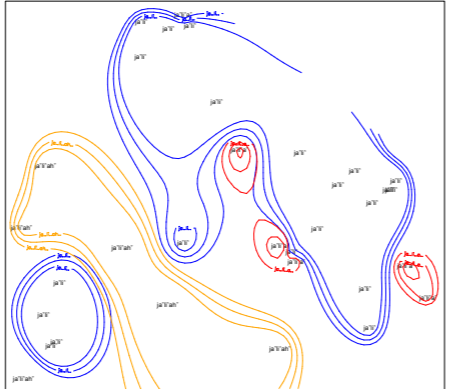
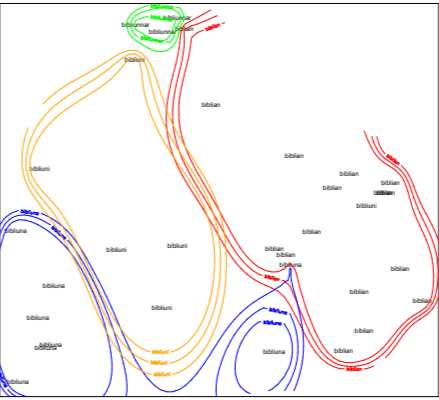
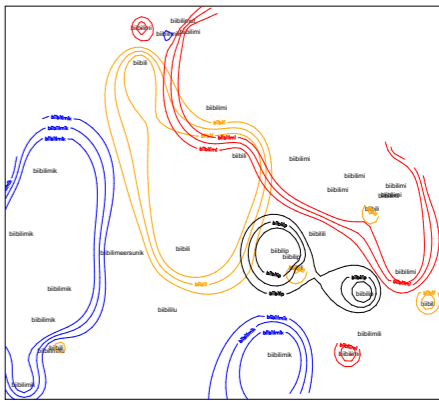
oromo

akha

akha

madi

madi



Conclusions

- Contextually Situated Roles are empirically the most basic level of grammatical roles
- Cross-linguistic diversity in marking gives us a window onto the similarity between roles
- Grammatical relations or Macro-roles can be induced from this similarity
- Alignment typology can be induced from the language-specific clustering of contextually situated roles