

Online Supplement: Sequence Analysis and Crisis Bargaining

Figures

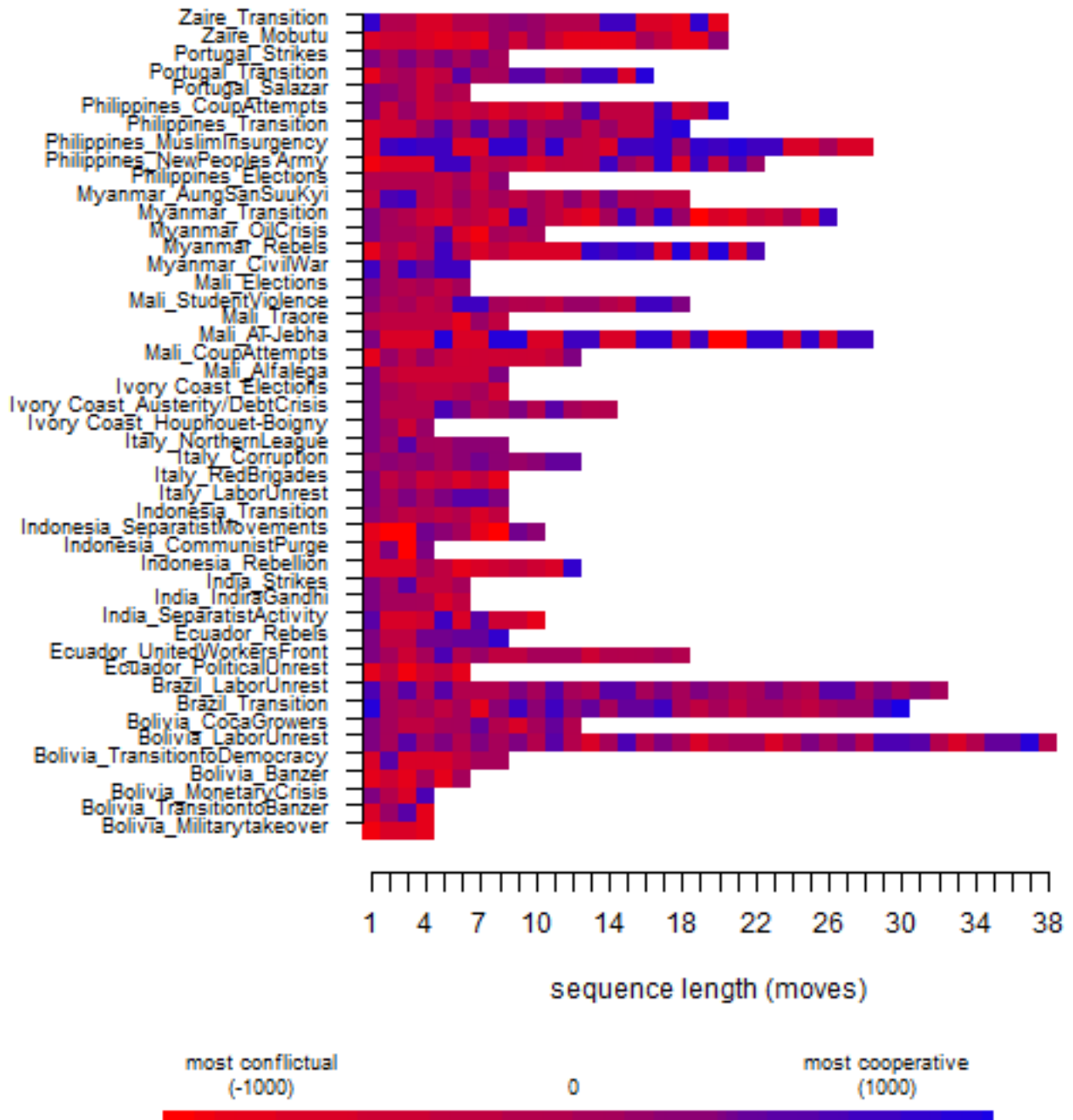


Figure 1: Sequence index plot

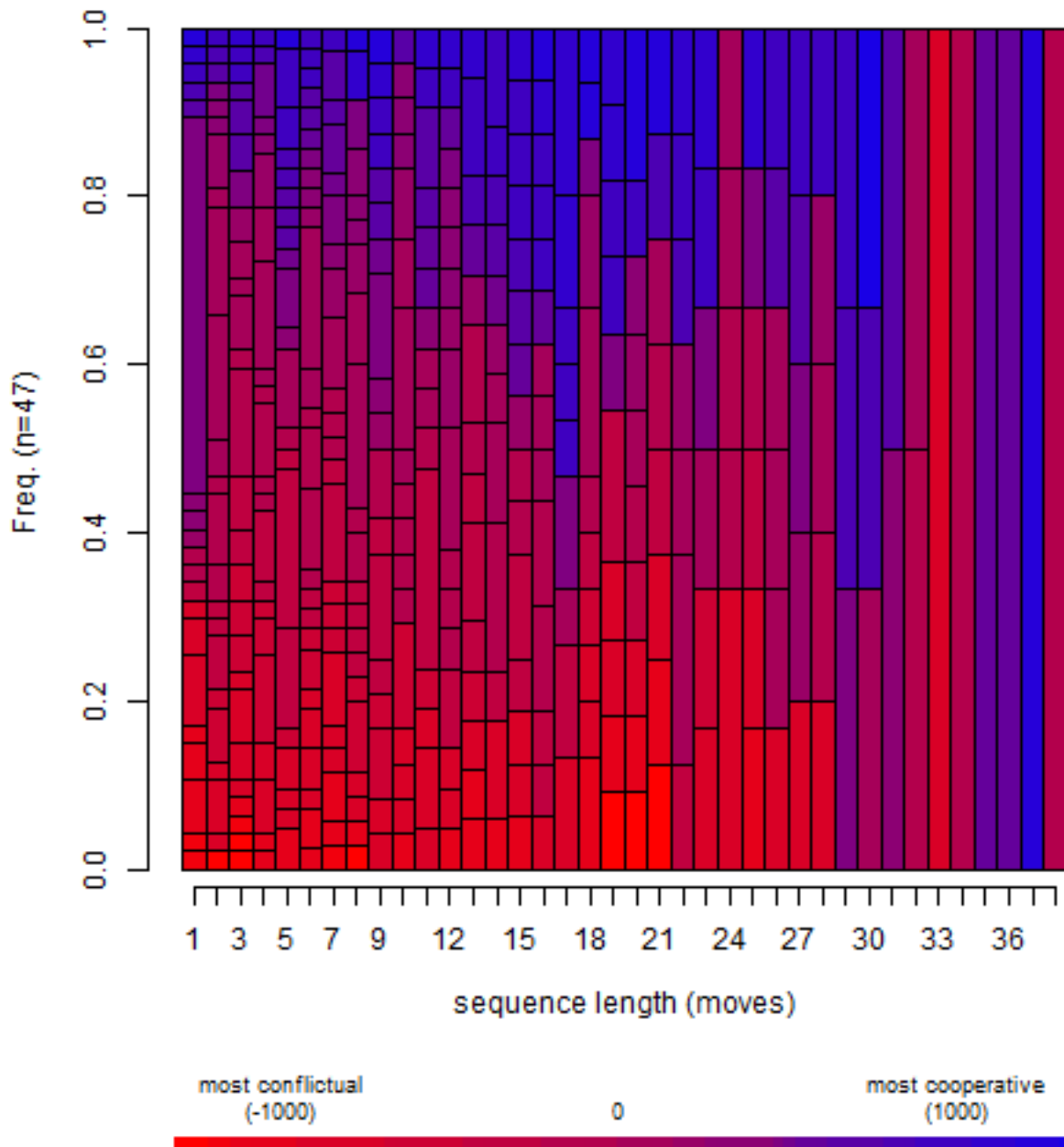


Figure 2: Sequence density plot

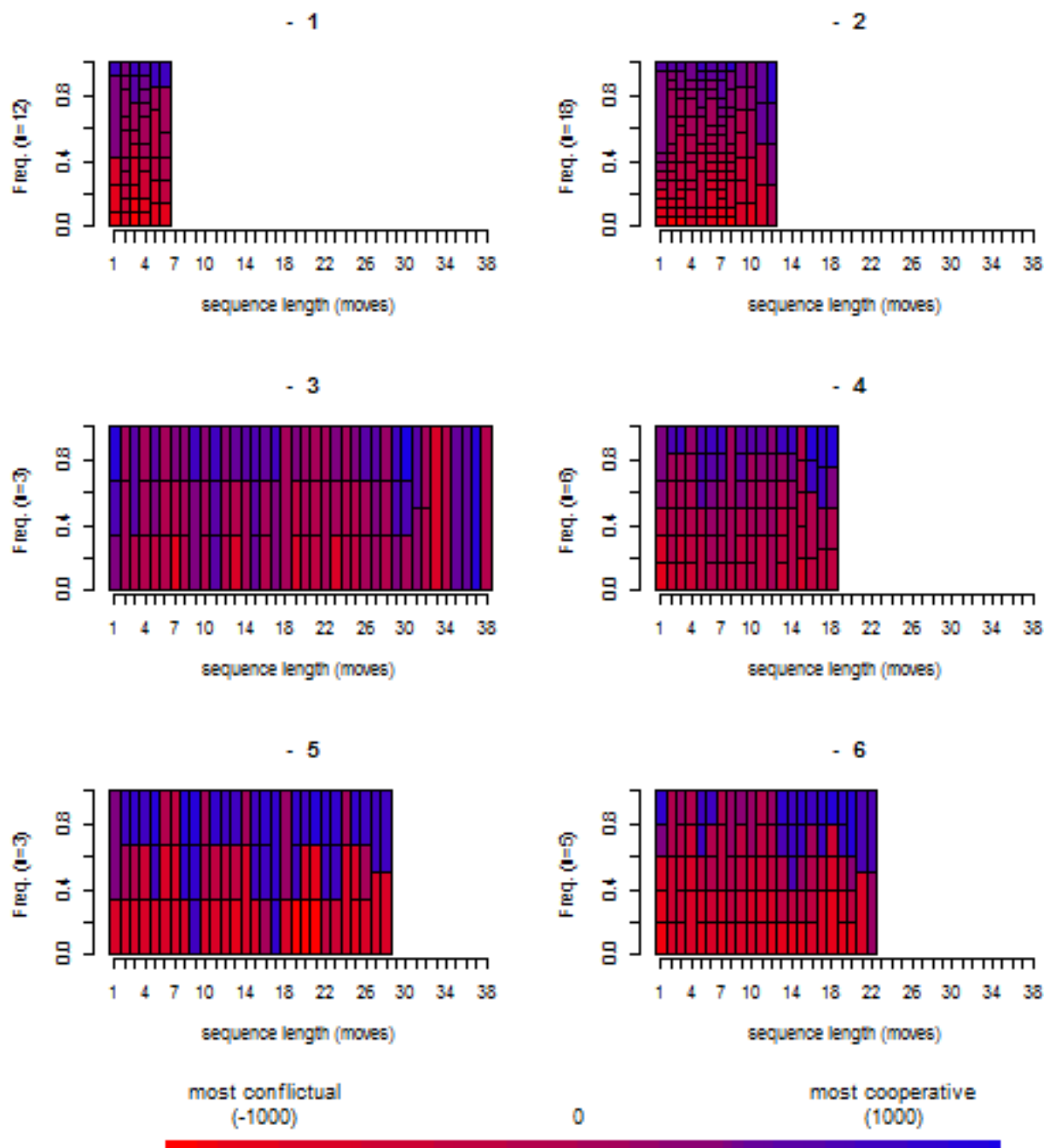


Figure 3: Sequence density plot by cluster, using Ward (1963)

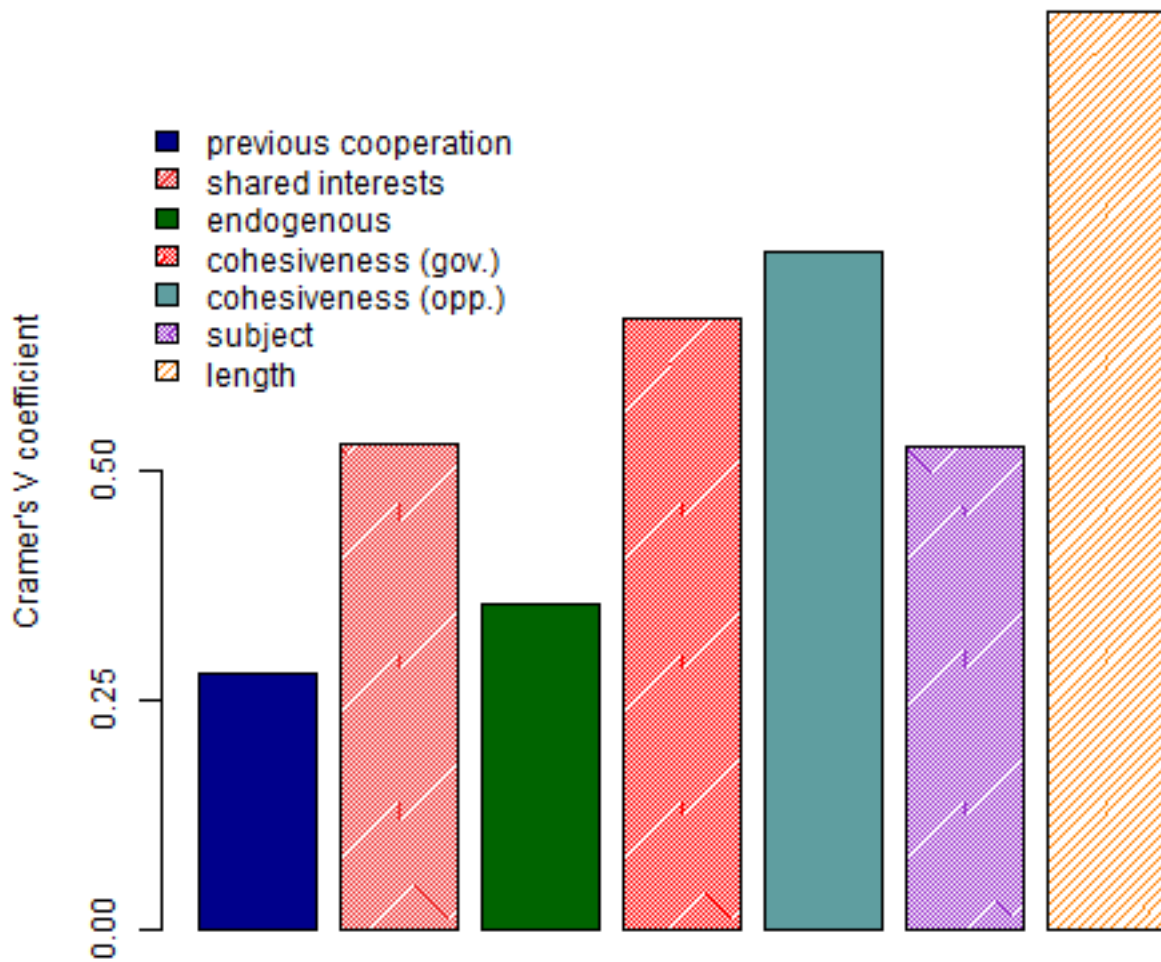


Figure 4: Bar plot:
 Cramer V coefficients, by covariate
above 0.50 denotes threshold for strong association

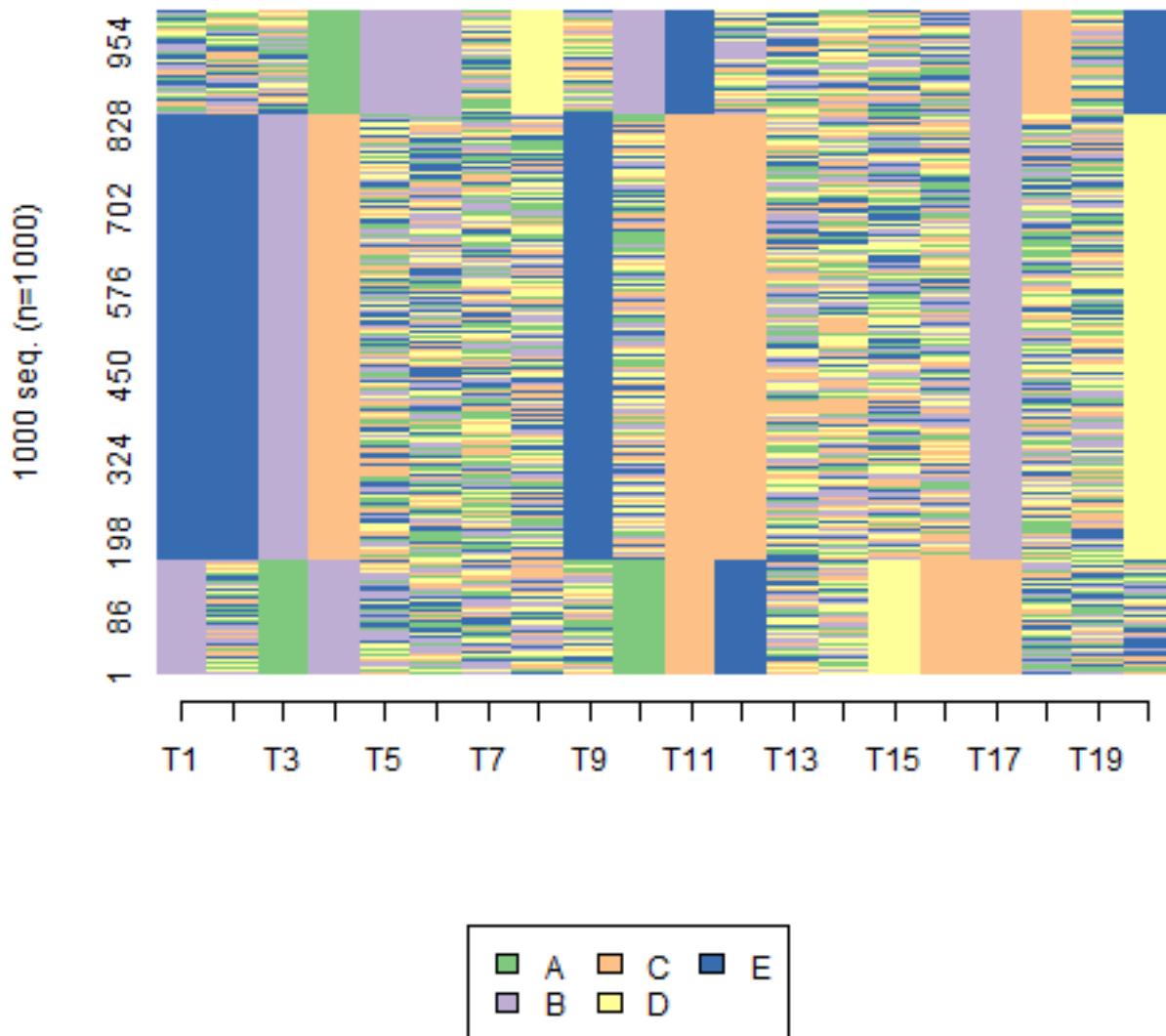


Figure 5: Sequence index plot:
 simulated sequences
 (0.5 affected by systematic error)

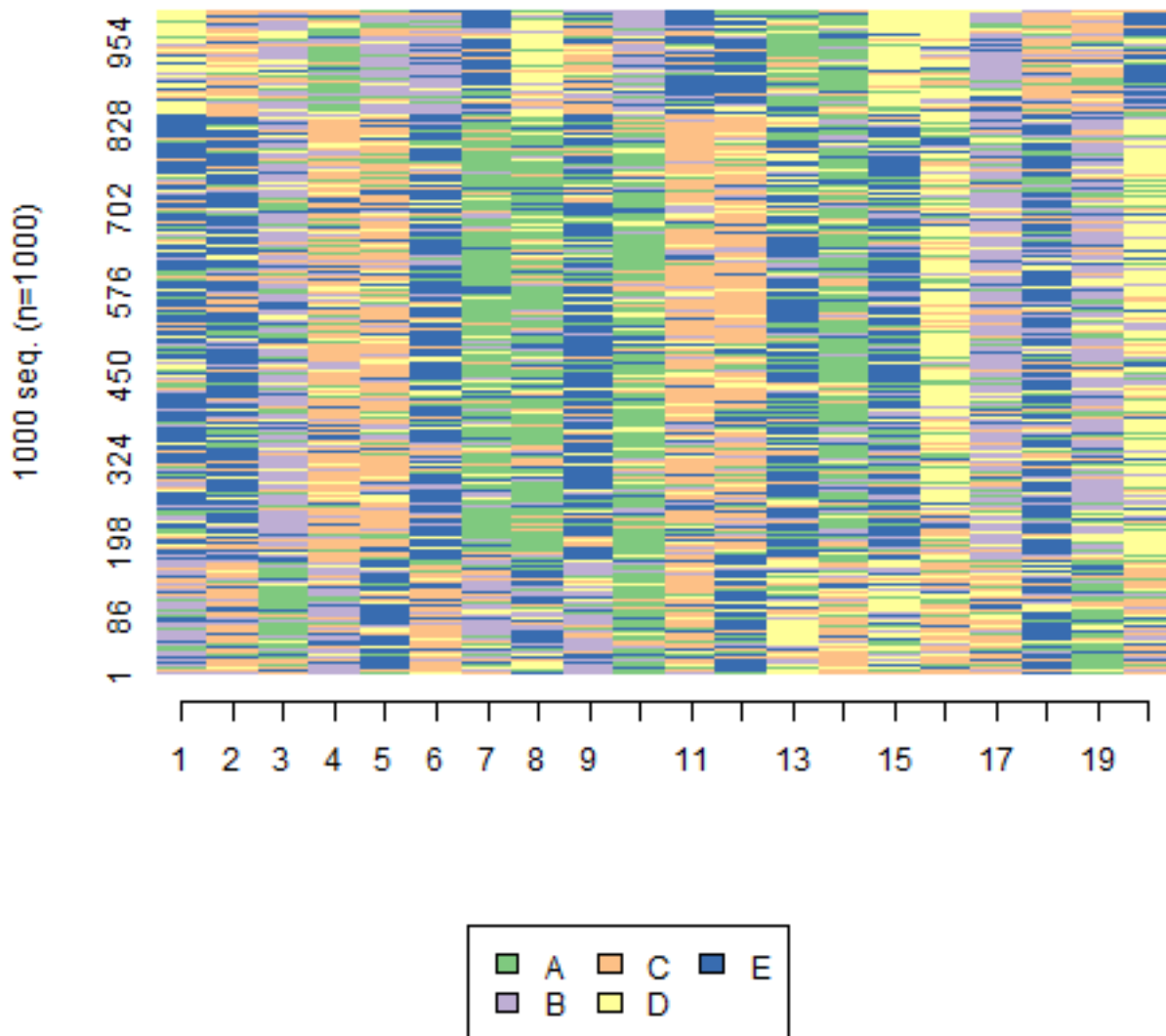


Figure 6: Sequence index plot:
 simulated sequences
 (0.5 affected by random error)

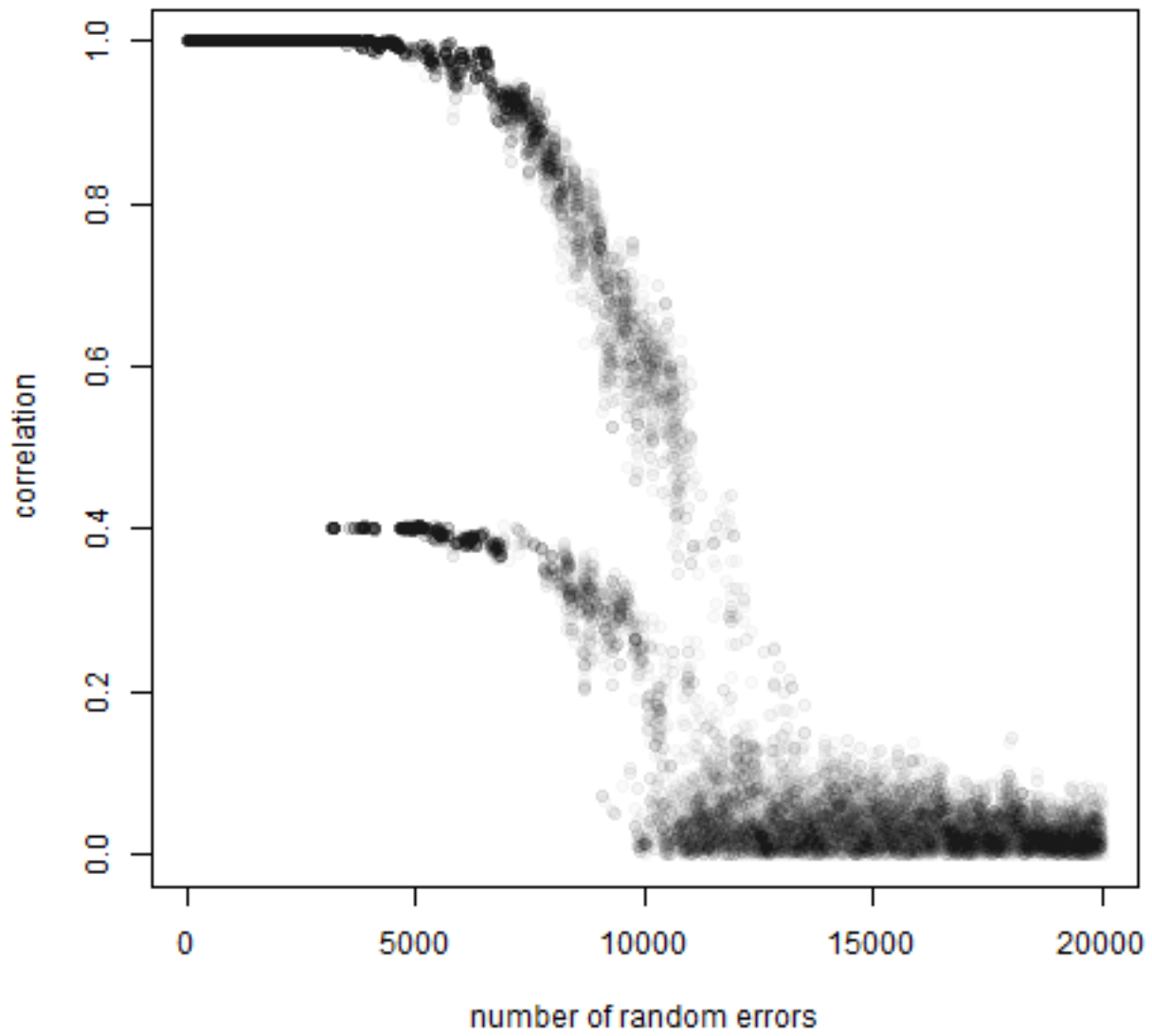


Figure 7: Correlation plot:
Simulated sequences with increasing random error, using OM

Appendix A

Coding schemes

Table A-1: Crises included in Banks (1999)

- **Riots** = Any violent demonstration or clash of more than 100 citizens involving the use of physical force.
- **Anti-Government Demonstrations** = Any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature.
- **Revolutions** = Any illegal or forced change in the top government elite, any attempt at such change, or any successful armed rebellion whose aim is independence from central government.
- **Guerrilla Warfare** = Any armed activity, sabotage, or bombings carried on by independent bands of citizens or irregular forces and aimed at the overthrow of the present regime.

Table A-2: Davis, Leeds and Moore (1998)'s IPI coding scheme

IPI CONFLICT SCALE

1. Mildly negative statements (verbal or printed) about other parties, their representatives, proposals, or activities. No action threatened or implied.

- 101. Negative statements, verbal or printed, directed at specific actors or specific policies/activities.
- 102. Calls for reform activities; appeals for support or liberalization; calls for a ceasing of opposition activities with no threat of violence.
- 103. Appeals to foreign actors to criticize domestic actors.
- 104. Failure to meet, canceling planned meeting with explicit political justification.
- 105. Denying a request.
- 109. Other negative statements.

2. Strongly negative statements representing implicit or explicit threats.

- 201. Threats directed at particular actors/policies. (*e.g., rumors/threats of a coup; death threats; calls for a vote of no-confidence in parliament; calls for strikes, economic boycotts, or for supporters to stockpile/take up arms; rumors of threatening action; failed plots; formal investigations.*)
- 202. Rejection of proposals for reform/change. (*e.g., government rejects opposition proposals for reform, democratization; opposition rejects government compromise; reaching deadlock in negotiations.*)
- 203. Appeals for foreign action/interventions.
- 209. Other 200 level events.

3. Non-violent protests, demonstrations, or strikes with political intent. Minor restrictions on political and economic participation. Legal actions protesting leadership or policies.

- 301. Non-violent protests and other non-violent conflictual political actions. (*e.g., sit ins; hunger strikes; self-imposed political exiles; legislators' political refusal to take seats; executive veto; political elite's resignation for political reasons.*)
- 302. Non-violent political strikes. (*e.g., student strikes; labor strikes for political reasons; general strikes; boycotting local elections.*)
- 303. Individual restrictions on free speech/free press/individual action. (*e.g., closing a newspaper; confiscation of anti-regime propaganda; fines or other restrictions on papers.*)
- 304. Legal actions to increase power/mobilize resources. (*e.g., additional police; military call-ups; placing of forces; abolishing social welfare programs; imposing draft/conscription; mobilizing significant political figures to join a group; formation of a united front; creating new groups or organizations; filing a lawsuit for political reasons; bringing opponents to trial; firing striking workers.*)
- 305. Vote of confidence won by incumbent.
- 306. Executive adjustment (*Replacement of Cabinet Officials.*)
- 307. Judicial Decision (conflict for loser).
- 309. Other 300 level events.

4. Minor political violence and more significant restrictions on political and economic participation. Legal actions by elites undermining governance.

401. Riots, violent demonstrations: property damage, but no deaths.

402. Police violence in response to protest or riots, no deaths.

403. Suicide protests.

404. Major national strikes; boycotting national elections.

405. Acts of intimidation that are not life threatening and brief in duration. (*e.g., physical coercion to intimidate member(s) of other groups; abductions which last less than 24 hours.*)

406. Minor restrictions on political/economic participation. (*e.g., enacting new laws restricting freedom of speech and association; closing universities, schools, or public facilities for political reasons; short term restrictions on travel and internal movement; or widespread media censorship.*)

407. Failure to form a ruling coalition in legislature.

408. Interbranch conflict. (*e.g., judiciary overrules executive, legislature overturns veto, executive refuses to implement legislation.*)

409. Other 400 level protests and restrictions on political participation.

5. General restrictions on political and economic participation, and political violence. Legal actions ending tenure of ruling group. Illegal attempts at restricting rival power.

501. General restrictions on political participation. (*e.g., declaring curfews; complete censorship.*)

502. Illegal actions to increase coercive power/mobilize coercive resources. (*e.g., creating private militia, military wings for opposition groups/parties; robbing banks or kidnapping for ransom; secret trials.*)

503. Actions to limit opposition activities or restrictions on political groups/individuals. (*e.g., arrests of rival elites or mass arrests/detentions; deporting individual dissidents; police raids of rival headquarters; reshuffling of the military; outlawing political parties; dissolving labor unions; forbidding public gatherings.*)

504. Riot with 10 or fewer deaths; police violence in response to protest or riot involving deadly force and/or ten or fewer deaths.

505. Violent political acts. (*e.g., bombings of nonhuman targets; sabotage; hijacking of planes or buses with political demands; political kidnappings; shootings with no deaths; seizing territory temporarily with limited violence (no deaths).*)

506. Legal actions ending tenure of ruling group. (*e.g., vote of confidence lost by incumbent; coalition collapse; impeachment.*)

507. Violating a cease fire.

509. Other 500 level political violence or restrictions.

6. Illegal attempts at ending tenure of ruling group or extra legal violent activities.

601. Temporary restrictions or bans on fundamental freedoms. (*e.g., imposing regional states of emergency or total curfews with the constitution retained.*)

602. Riot or police violence in response to protest or riot involving 11-99 deaths.

603. Breaking a truce.

604. Armed attacks with 15 or fewer deaths; bombings of human targets.

605. Unsuccessful assassination attempt.

606. Political convictions.

607. Capturing adversary's troops.

608. Extra legal activities threatening elites or preventing opponent's activities. (*e.g., barracks uprisings, minor coup attempts (less than 10 dead), reports of disappearances.*)

609. Other 600 level political violence or restrictions.

7. Extensive political violence.

701. Major rioting or government violence in response to protest or riot involving hundreds of deaths.

702. Political assassinations/executions of significant figures. (*includes extra legal armed attacks by state against political leaders or death squad activity.*)

703. Declaration of a nation-wide state of emergency that is temporary and most of constitution remains in effect.

704. Military clash, raid, or ambush, with both sides armed.

705. Violent unsuccessful coup attempt (*greater than 9 dead*).

706. Nonviolent coup that only rotates rulers (*i.e., does not alter structure of government*).

707. Breaking a peace treaty, renewing hostilities.

708. Armed attack on unarmed group involving 16-30 deaths.

709. Other 700 level political violence or restrictions.

8. Changing the structure of government or very high levels of political violence.

801. Ending normal governmental policy/decision making process. (*e.g., executive suspension of legislature; legislature's suspension of executive power; abolition of civil courts; voiding the results of an election.*)

802. Nonviolent coup that alters the structure of government (*less than 10 dead*).

803. Violent coup that only rotates rulers (*i.e., does not alter structure of government*).

804. Forced relocation of population into protective villages under the control of the government.

805. Massacre of civilians (*more than 30 dead*).

806. Rebel occupation of territory that lasts longer than 24 hrs.

809. Other 800 level political violence or restrictions.

9. Societal upheaval.

901. Rebels setting up rival government.

902. Declaration of martial law.

903. Forced expulsion of portions of the population (*i.e., they leave the country as refugees*).

904. Violent coup that alters the structure of government.

909. Other 900 level political violence or restrictions.

10. Civil war.

1001. Genocidal/Political action (*i.e., executions of hundreds of members of an ethnic/political group*).

1002. Major battle (*defending territory with conventional military tactics and weaponry with many deaths*).

1003. Violent coup followed by purge (*government structure altered and many former government leaders executed*).

1009. Other 1000 level political violence or restrictions.

IPI COOPERATION SCALE

1. Mildly positive statements, verbal or printed, about other parties, their proposals, or activities. No action promised.

101. Statements of support.

102. Appeals to foreign actors for support of other domestic actors.

103. Proposals for action. (*e.g., requesting support; presenting conditions for negotiation or peace.*)

109. Other 100 level events.

2. Strongly positive statements about other parties, their representatives, proposals, or activities. Implied or literal promises of action.

201. Promises directed at particular actors.

202. Promises designed to end dispute.

203. Talks/meetings between groups that have not consistently cooperated in the past (groups that have not been engaged in a protracted conflict).

209. Other 200 level events.

3. Minor cooperative actions.

301. Relaxing individual restrictions on free speech/free press/individual action.

302. Agreeing to minor reform. (*e.g., ousting corrupt officials; agreeing to investigate war crimes/human rights violations; social welfare program concessions.*)

303. Actions carrying out promises to end minor disputes.

304. Agreements between groups that have not consistently cooperated in the past (groups that have not been engaged in a protracted conflict).

305. Judicial decision (cooperation for winner).

306. Helping another group to mobilize resources/gain political advantage. (*e.g., government rewriting electoral law to advantage one party; raising money/support for a group; regime support demonstrations.*)

309. Other 300 level events.

4. Agreements to attempt to settle protracted conflict or relaxing minor restrictions.

401. Relaxing minor restrictions on political/economic freedom. (*e.g., relaxing travel & movement restrictions; reopening universities; relaxing widespread censorship; ending local curfew.*)

402. Agreements to talk, planning a meeting, or reports of talks between parties to a protracted social conflict. (*e.g., secret negotiations, dialogue through a third party, meetings of minor officials, exchange of position papers/ideas.*)

409. Other 400 level events.

5. Relaxing government sanctions or actions designed to mitigate protracted conflict.

501. Relaxing government sanctions. (*e.g., releasing arrested or detained individuals; relaxing complete censorship.*)

502. Cease fire (*single event, day, or battle*).

503. Releasing hostages.

504. Agreements/proposals designed to overcome protracted conflict. (*e.g., party in power introducing legislation to open political system; suffrage/land reform; agreeing to allow elections to be held; agreeing to consider granting relative autonomy.*)

505. Talks or negotiations between parties to a protracted social conflict.

506. Small scale/individual surrender of rebels.

509. Other 500 level events.

6. Reforms; relaxing major restrictions; truces.

601. Relaxation of major repressive activities. (*e.g., ending ban or restrictions on fundamental freedoms; ending regional state of emergency; ending total curfew; releasing political prisoners; granting amnesty to political leaders; allowing exiled leaders to return; legalizing banned political groups; returning expropriated property; establishing the rights of minorities/individuals.*)

602. Truce. (*e.g., agreement to halt hostilities indefinitely or for a period of negotiation; renouncing the armed struggle.*)

603. Implementing policy reform. (*e.g., making taxes more equitable; adjusting social welfare programs; instituting land reform; setting a date for national elections; holding minor elections; allowing opposition parties to take power following election; staging a trial of previous leaders or human rights violators.*)

609. Other 600 level events.

7. Substantial agreements.

701. Ending nationwide state of emergency.

702. Convening a commission to write new constitution (multiple parties/groups involved).

703. Peace treaties.

704. Holding major national elections without full participation.

709. Other 700 level events.

8. Conflict Termination: The parties agree to terminate the internal war but do not create new institutions for managing the underlying conflict.

801. Holding elections under old constitution in which all parties to the conflict participate.

802. Reestablishing civil society - constitution, parliament, courts, judicial process.

803. Ending martial law.

804. Ratifying/passing new constitution.

805. Territorial withdrawal (rebels relinquishing territory after a peace treaty).

809. Other 800 level events.

9. Conflict Settlement: The internal war is terminated and the underlying conflict settled as a consequence of the construction of institutions that will manage future conflict.

901. Implementing new constitution that guarantees political and civil rights to all participants in the conflict or one that grants autonomy to specific groups.

902. Election contested under new constitution with full participation.

909. Other 900 level events.

10. Conflict Resolution.

1001. The internal war is terminated because the underlying conflict is resolved such that each party's needs are guaranteed.

1009. Other 1000 level events.

Appendix B

Supplement to SqA example
(Casper and Wilson 2012)

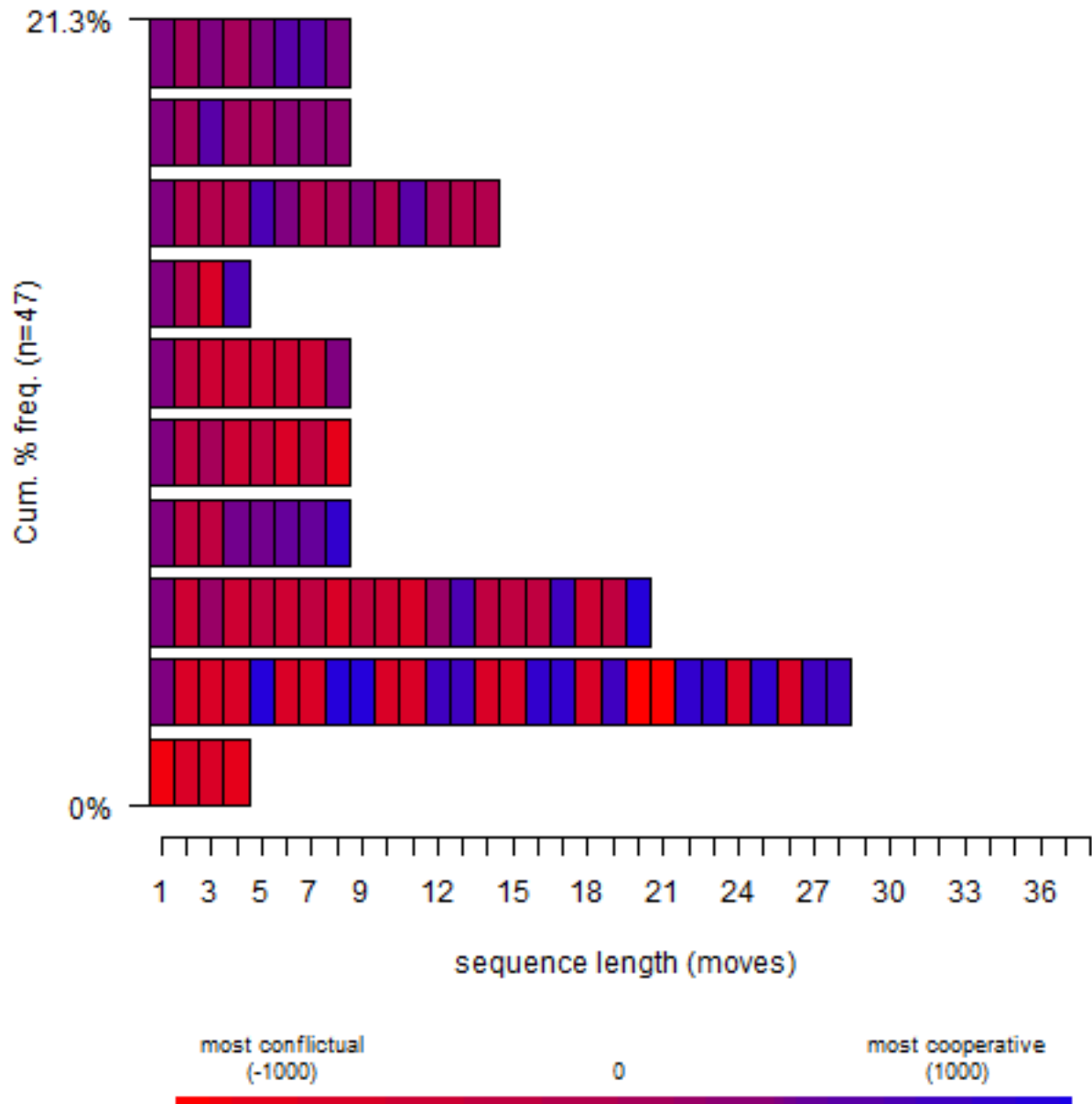


Figure B-1: Frequency plot:

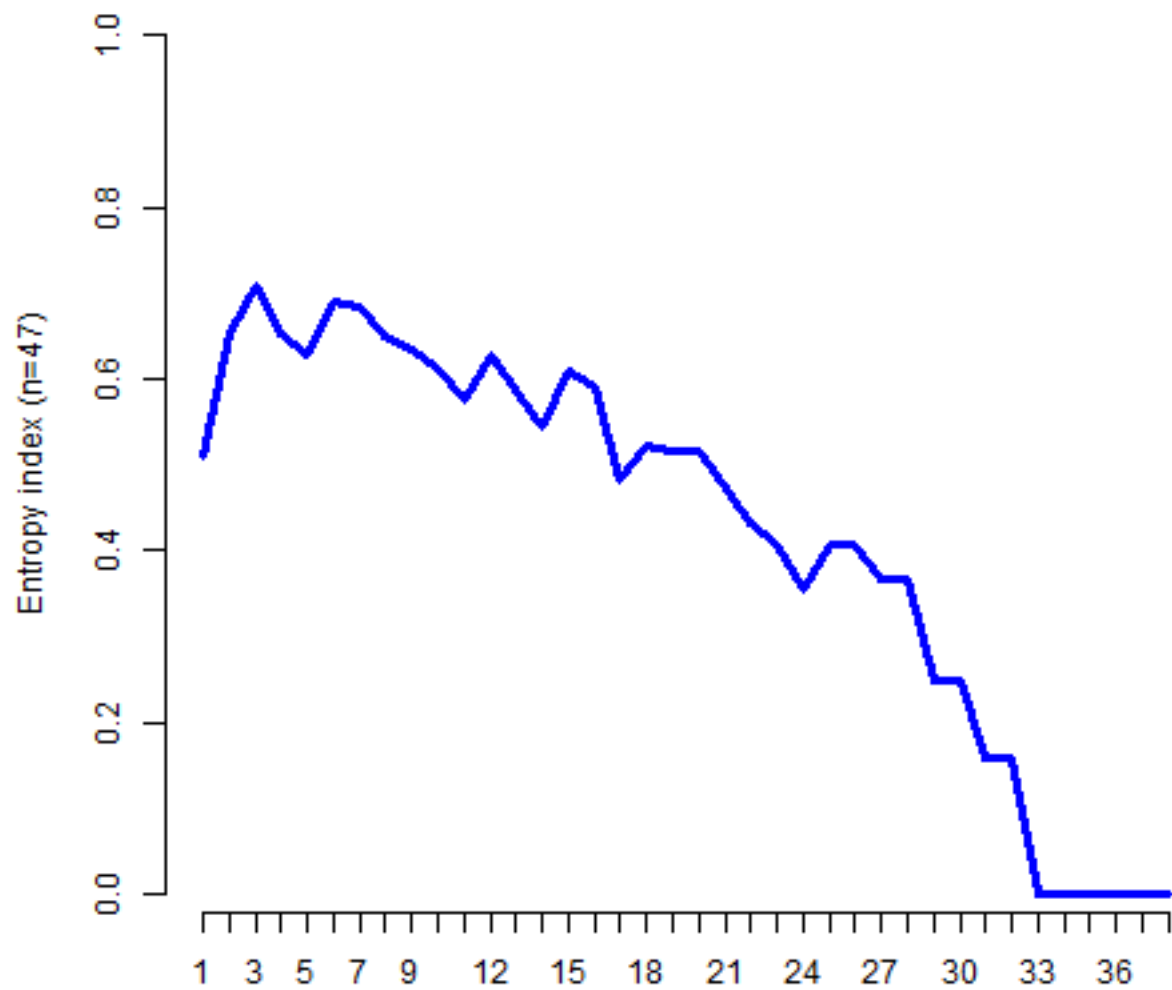


Figure B-2: Line plot:
Sample entropy, by moves

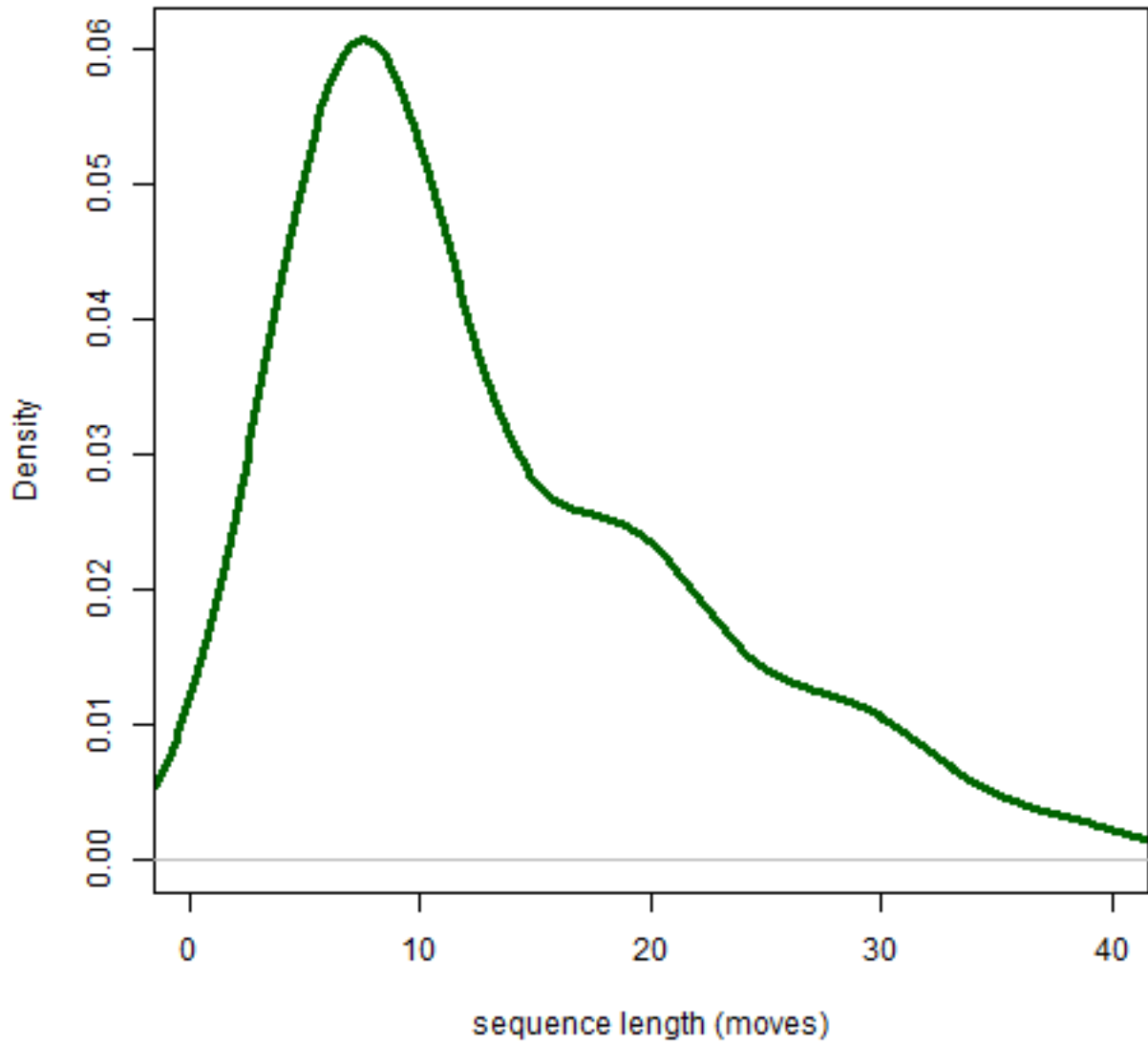


Figure B-3: Line plot:
Distribution of sequence length, by moves

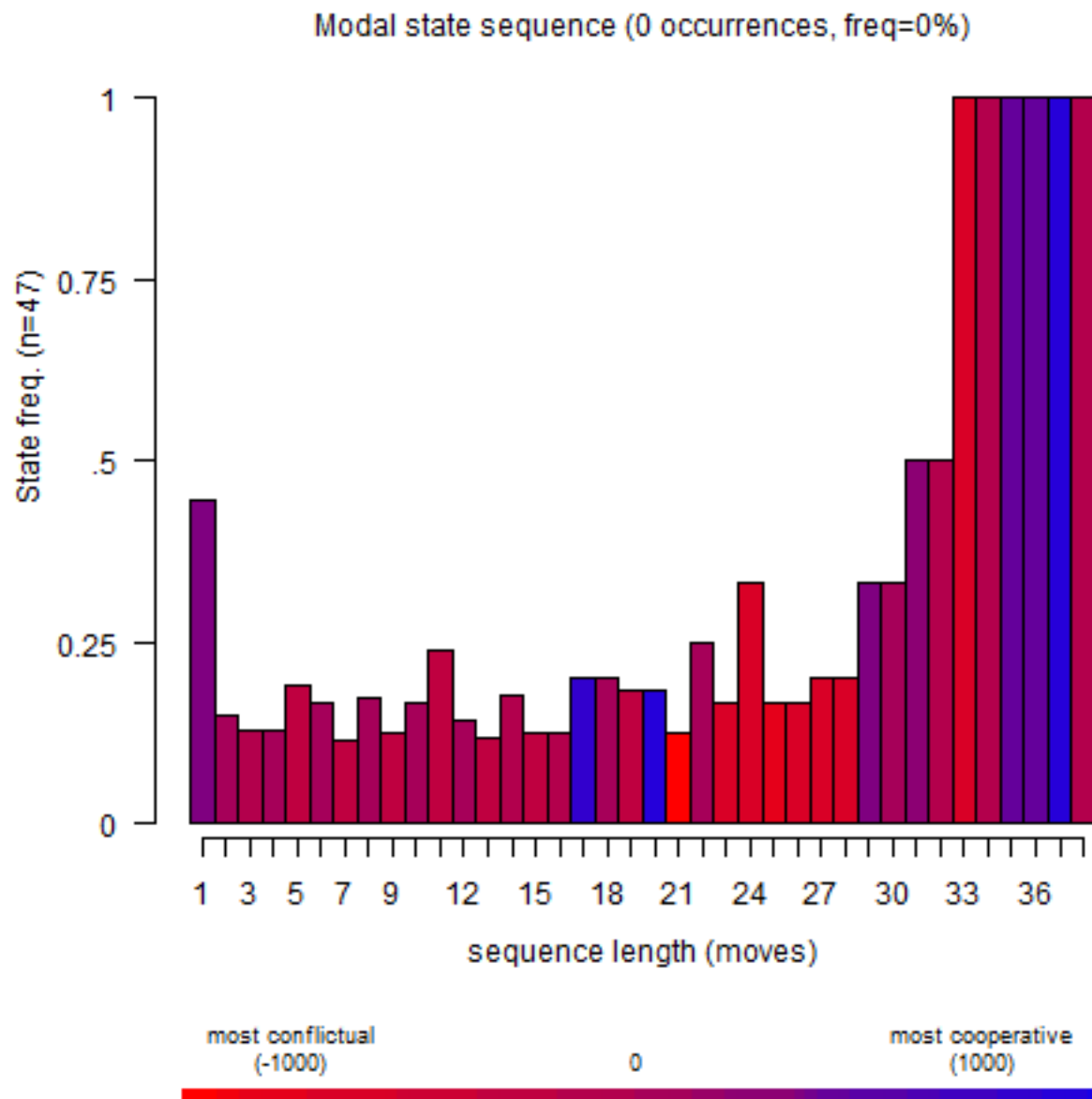


Figure B-4: Modal states plot

Graphical representation of distance matrix

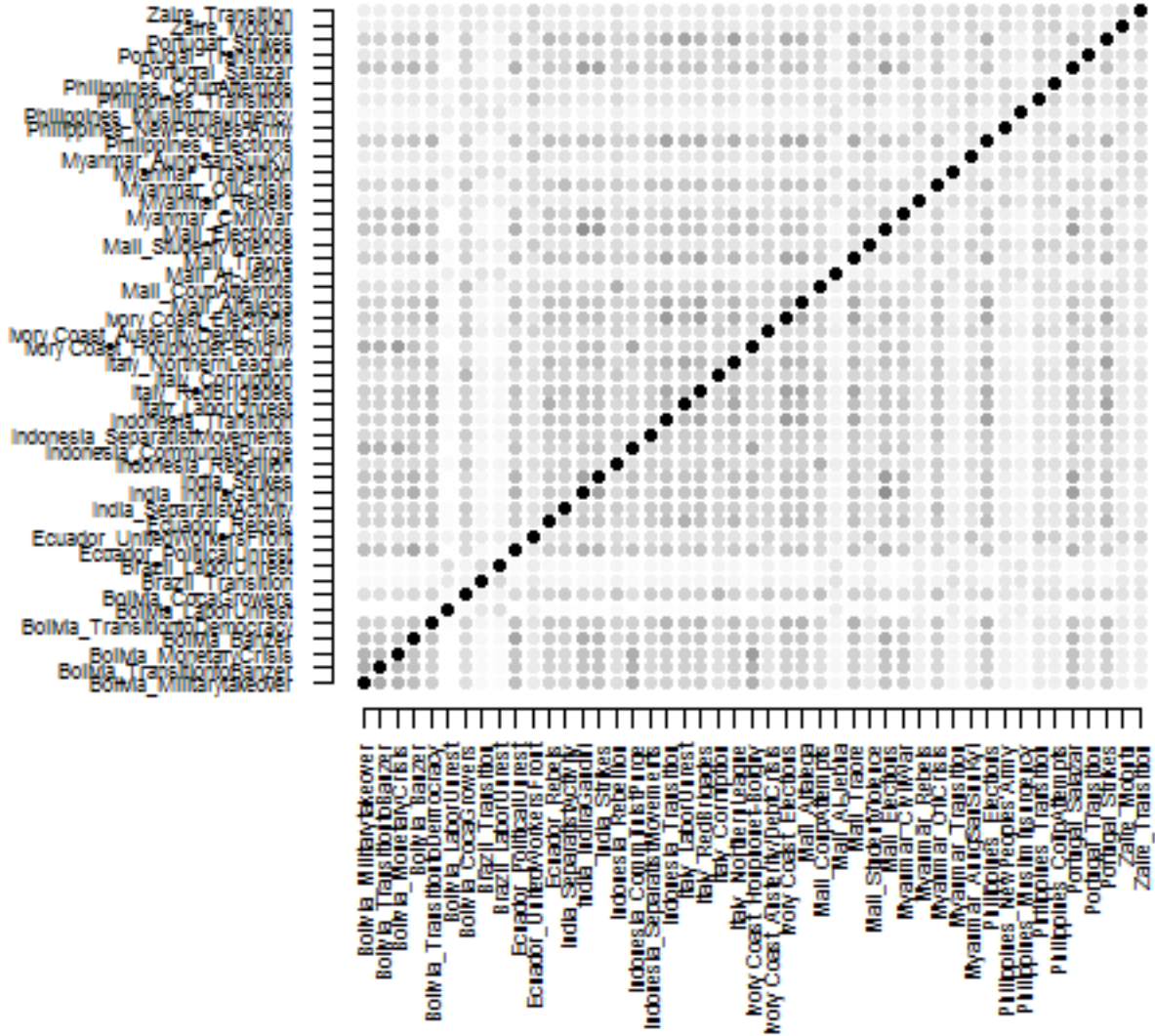


Figure B-5: Distance matrix:
OM values calculated using IPI differences
*Darkness denotes a better match.

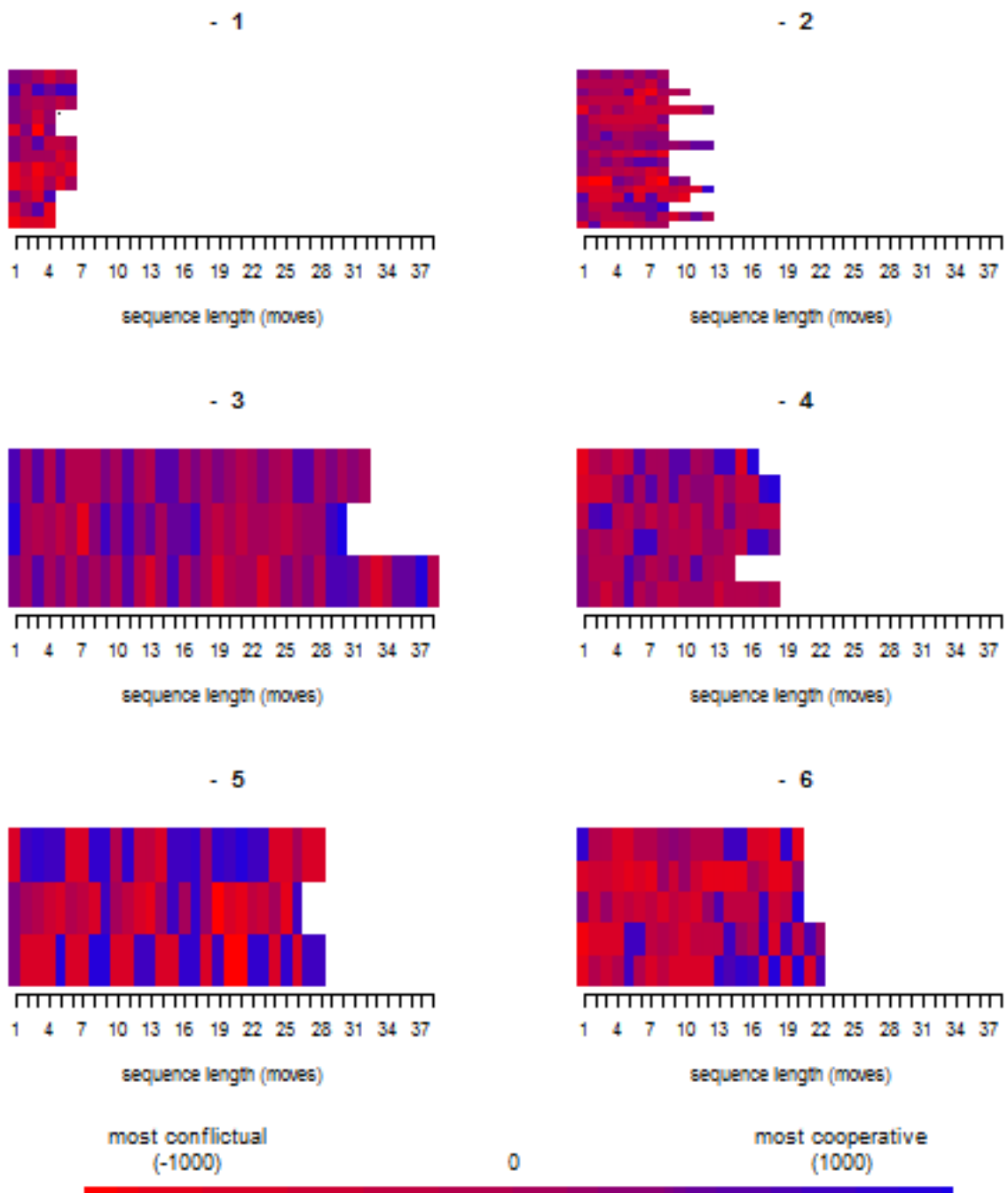


Figure B-6: Sequence index plot by cluster, using Ward (1963)

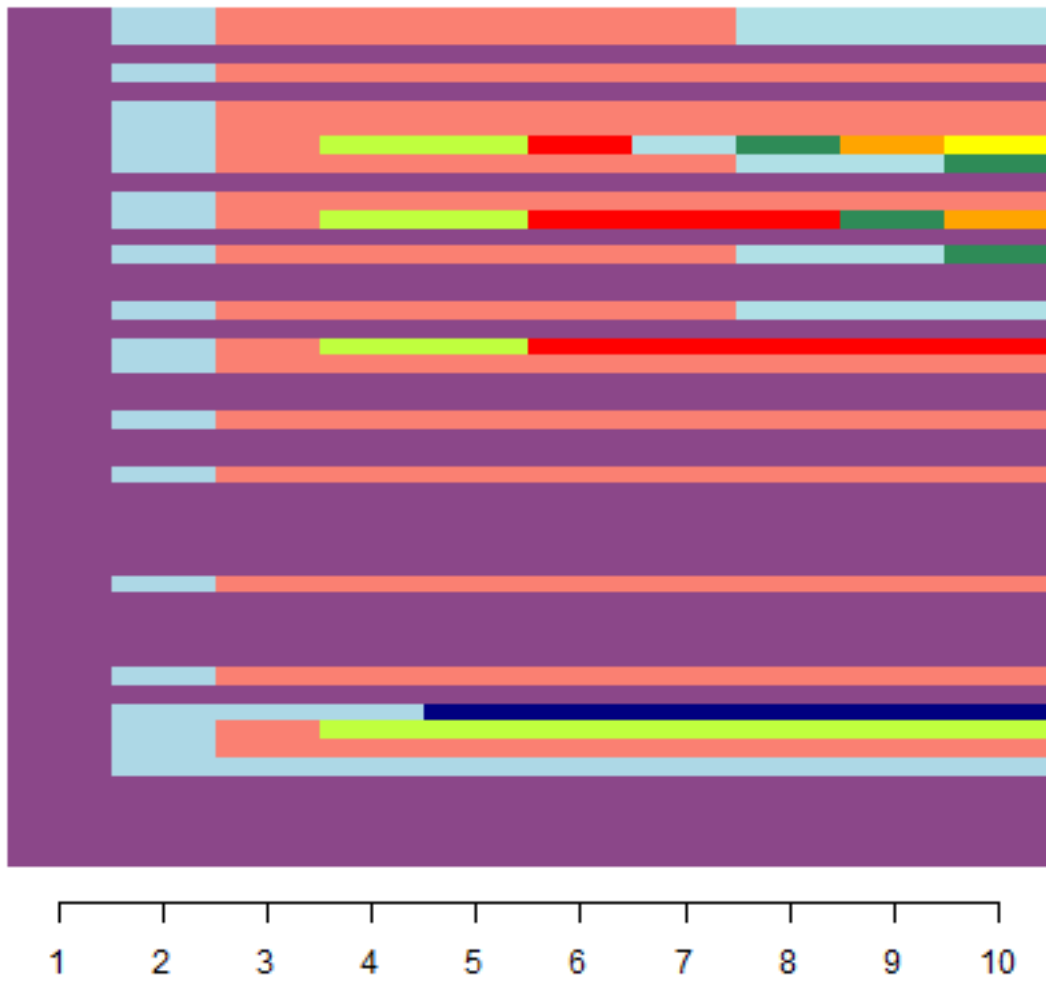


Figure B-7: Cluster assignment, by number of clusters

Appendix C: Supplement to OM robustness test

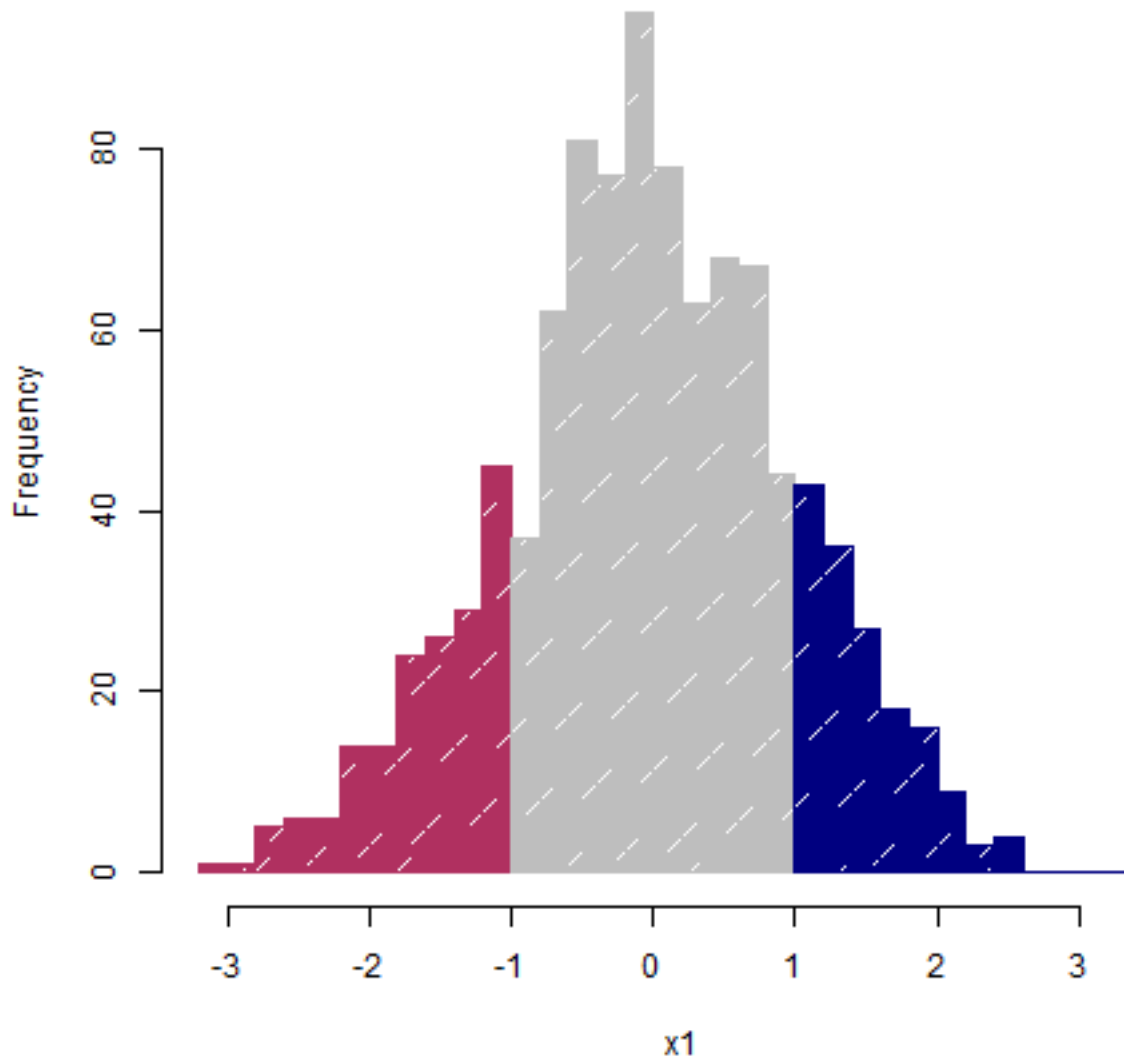


Figure C-1: Histogram:
1000 simulated draws from a normal distribution
(split into three discrete categories)

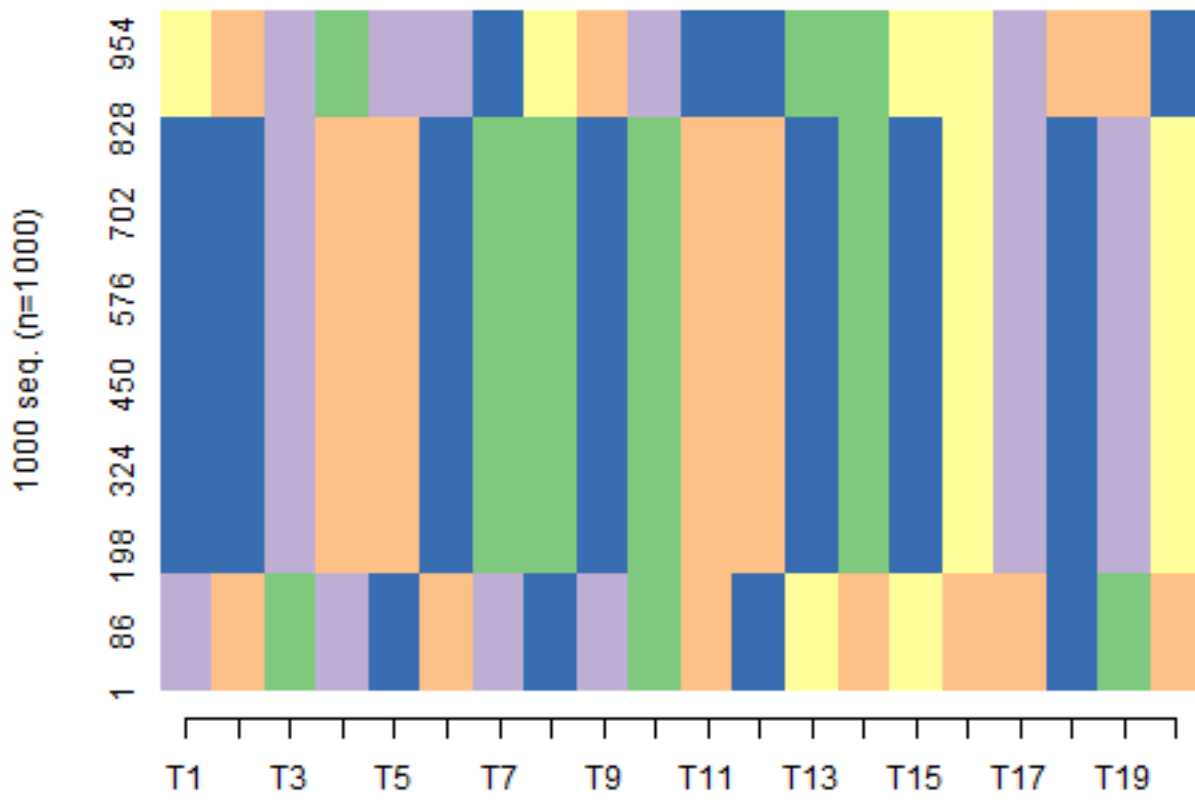


Figure C-2: Sequence index plot
 1000 randomly generated sequences
 (split into three discrete categories)

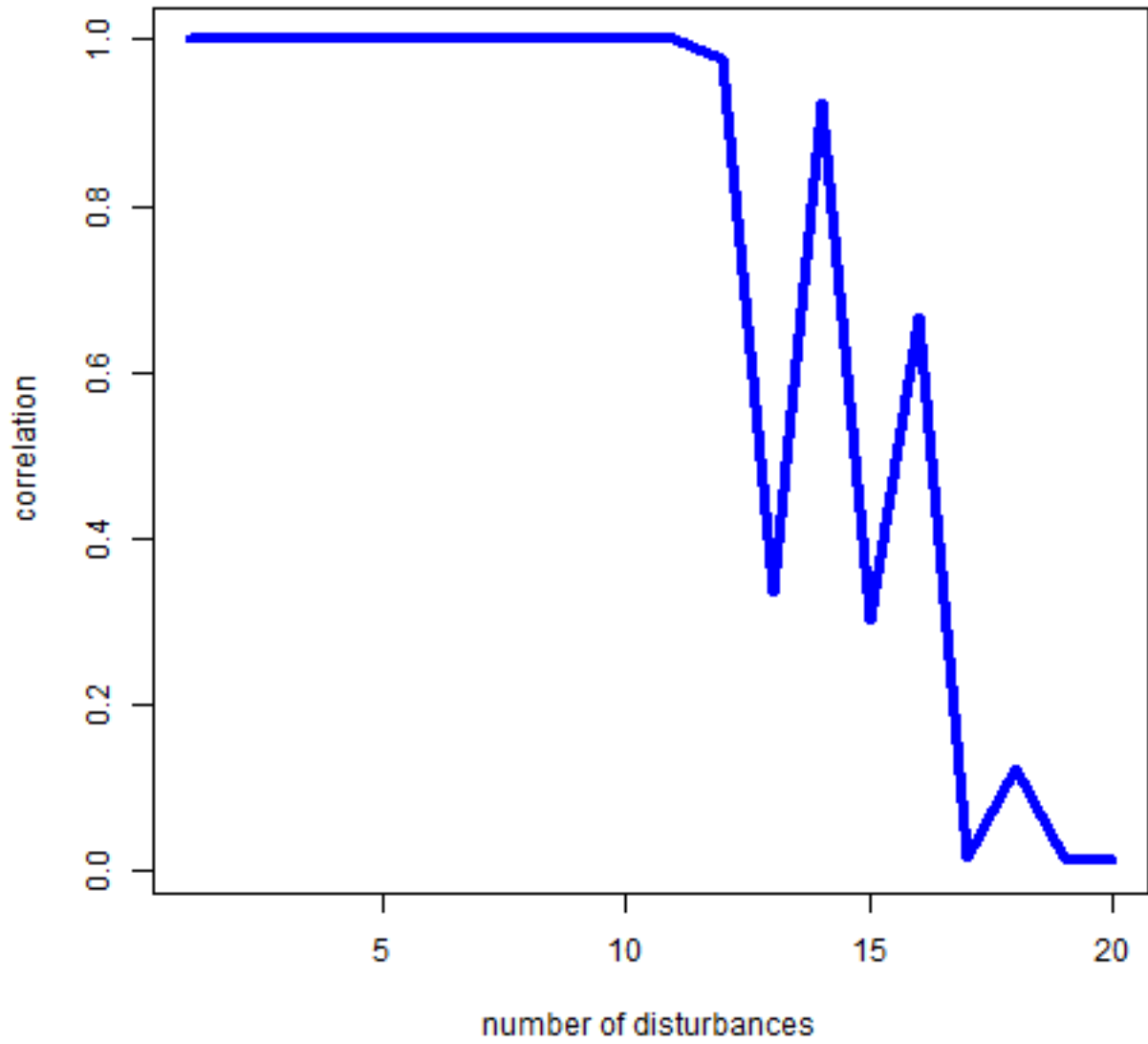


Figure C-3: Correlation plot:
Simulated sequences with increasing systematic error, using OM

References

Banks, Arthur S. 1999. "Cross-National Time-Series Data Archive." Binghamton, NY: Banner Software.

Casper, Gretchen and Matthew Wilson. 2012. Bargaining During Crises: Subsequence that Reinforce or Undermine Democracy. Annual Meeting of the Midwest Political Science Association, Chicago, 12-15 April.

Davis, David R., Brett Ashley Leeds and Will H. Moore. 1998. Measuring Dissident and State Behavior: the Intranational Political Interactions (IPI) Project. Workshop on Cross-National Data Collection, Texas A&M University.

Ward, Joe H. 1963. "Hierarchical Grouping to Optimize an Objective Function." *Journal of the American Statistical Association* 58:236–244.