Data Notes

The Cease-Fires Data Set

developed for data analysis in:

Virginia Page Fortna
Peace Time: Cease-Fire Agreements and the Durability of Peace
Princeton University Press, 2004

please email comments or questions to vpf4@columbia.edu
**UNIVERSE OF CASES AND VERSIONS OF THE DATA:**

The data cover all cease-fires in interstate wars ending between 1946 and 1994. There are 48 basic cases in the data set, each representing a dyadic cease-fire between principal belligerents in a Correlates of War (COW) interstate war.¹

In order to avoid omitting the shortest lived cease-fires, wars which COW considers a single case but which start and stop more than once are split into separate cases for each cease-fire.² Warnumb numbers with .2, (e.g. 148.2), indicate the second portion of split cases.

There are two versions of the data, a time-constant covariates version, which is used primarily for analysis of agreements as the dependent variable, and a time-covarying variates version, which is used primarily for duration analysis with the duration of peace as the dependent variable.

**Time-Constant Data**

The time-constant (tc) version (ceasefires.tc.dta) consists of the 48 original cease-fires, plus 15 follow-up agreements:

In several cases the original cease-fire was later followed up with a new, usually stronger, agreement. Because this research focuses on the content of agreements, these new agreements are considered as separate cases in this version of the data.³ Id numbers with .4 .5 or .6 mark followup agreements.

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¹ For COW coding criterion see Singer and Small 1994and Singer 1980. “Principal belligerents” are the main participants in a war, defined as states whose troop contribution was at least 1/10th the number contributed by the largest troop provider. (Source: Clodfelter 1992). For example, the Korean War includes the US and South Korea vs. China and North Korea, for a total of 4 dyads (rather than 28 dyads if every minor participant was included). In a few cases, a state meets this formal rule, but not necessarily our common understanding of the main players in the war: Jordan’s peripheral participation in the Yom Kippur War (id=31, warnumb=181); Cuba’s role in the Ethiopian Somalian war (id=35, warnumb=189); Libya’s role in the Ugandan-Tanzanian war (id=38, warnumb=190). These cases are marked by drop=1 for robustness checks (see below). Kuwait does not meet the troop contribution criterion in the Gulf War but was clearly a principal belligerent.

² In most cases these start-and-stop wars were identified with COW data on dates participants left and reentered the war (yearlef, yearent2, yearlef2, etc.). Where research turned up cease-fires that went into effect but subsequently failed within single COW wars (e.g. in the Azeri-Armenian war) these cases were also split so that each cease-fire is considered a separate war.

³ In some cases, several agreements were reached in quick succession. To avoid over-counting these cases, agreements reached within a year of the original cease-fire are considered part of a single agreement, with mechanism and agreement codings reflecting the full set of measures implemented in the series.
Agreement variables differ across original and follow-up cases for a given dyad, but in most cases situational variables are the same, as they reflect aspects of the war.  

In this version, each case consists of a single observation, representing a snap-shot of the case.

**Time-Varying Data**

In the time-varying (tv) version of the data (ceasefires.tv.dta), there are 48 cases, but each case consists of multiple observations over time. Each observation runs from the cease-fire or the end of the previous time period, until the end of the calendar year, a substantial change in agreement terms (e.g., the signing of a follow-up agreement), or another war between the same belligerents, whichever comes first.

For each case, observations run continuously from the cease-fire until another war or January 1 1998, at which point the data are censored. Much of these data are based on dyad-year data generated in EUGene. (Bennett and Stam 2000. Software available at www.eugenesoftware.org)

There are a total of 876 observations in the time-varying data.

The time-varying data were stset in STATA using the following command:

```
. stset date1, id(id) failure(newwar) time0(date0) origin(time date0)
```

Analysis time is in days.

**Individual Case Notes**

id=9 (Palestine 2) Lebanon & Israel fight again 11 April 1992, (See Maoz 2001).

id=21 (North vs South Vietnam) is censored in the time-varying version on the day after the cease-fire in 1975 because South Vietnam ceased to exist.

id=28 (India-Pakistan after Bangladesh war) war resumes in 1999 in Kargil after the time-varying data are censored (this failure is noted in the time-constant version).

id =39 (First Sino-Vietnamese) date of cease-fire failure somewhat unclear. COW3 lists the Second Sino-Vietnamese war as starting on 5 January 1987, but MID lists it as starting in October 1986 (the exact day is missing). An earlier version of COW (COW2) listed the war as starting in September 1985. Bercovitch and Jackson 1997, p.216 note clashes until March 1987.

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4 One exception is prepond, the measure of preponderance of power (in the time-varying data, prep_att is constant over life of case).

5 Note that there is a break in id=8 (Israel-Syria) because Syria “ceases to exist” between for 1959 and 1960 while united with Egypt as the UAR.
“with particularly heavy fighting in October 1986 and January 1987.” I use 15 October 1986 as the day the next war begins.

id=44 (US and Iraq in Gulf War) war resumes in 2003 after these data were compiled.

Vietnam-Cambodia (COW warnumb=187) is excluded because there was no cease-fire. The interstate war “ends” when Vietnamese forces replace Pol Pot with a new puppet government (which signs an agreement with Vietnam). However, because the Khmer Rouge continue to fight Vietnamese forces and the new Cambodian government, this war simply becomes a civil war.
### List of Cases

<table>
<thead>
<tr>
<th>id</th>
<th>War</th>
<th>Between</th>
<th>Cease-Fire (follow-up agreement)</th>
<th>War Resumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Palestine 1</td>
<td>Israel</td>
<td>Iraq</td>
<td>18 Jul 1948</td>
</tr>
<tr>
<td>2</td>
<td>Palestine 1</td>
<td>Israel</td>
<td>Egypt</td>
<td>18 Jul 1948</td>
</tr>
<tr>
<td>3</td>
<td>Palestine 1</td>
<td>Israel</td>
<td>Syria</td>
<td>18 Jul 1948</td>
</tr>
<tr>
<td>4</td>
<td>Palestine 1</td>
<td>Israel</td>
<td>Lebanon</td>
<td>18 Jul 1948</td>
</tr>
<tr>
<td>5</td>
<td>Palestine 1</td>
<td>Israel</td>
<td>Jordan</td>
<td>18 Jul 1948</td>
</tr>
<tr>
<td>6</td>
<td>Palestine 2</td>
<td>Israel</td>
<td>Iraq</td>
<td>31 Oct 1948</td>
</tr>
<tr>
<td>7</td>
<td>Palestine 2</td>
<td>Israel</td>
<td>Egypt</td>
<td>07 Jan 1949</td>
</tr>
<tr>
<td>8</td>
<td>Palestine 2</td>
<td>Israel</td>
<td>Syria</td>
<td>31 Oct 1948</td>
</tr>
<tr>
<td>9</td>
<td>Palestine 2</td>
<td>Israel</td>
<td>Lebanon</td>
<td>31 Oct 1948</td>
</tr>
<tr>
<td>10</td>
<td>Palestine 2</td>
<td>Israel</td>
<td>Jordan</td>
<td>31 Oct 1948</td>
</tr>
<tr>
<td>11</td>
<td>Korean</td>
<td>USA</td>
<td>China</td>
<td>27 Jul 1953</td>
</tr>
<tr>
<td>12</td>
<td>Korean</td>
<td>USA</td>
<td>No. Korea</td>
<td>27 Jul 1953</td>
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<tr>
<td>13</td>
<td>Korean</td>
<td>So. Korea</td>
<td>China</td>
<td>27 Jul 1953</td>
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<tr>
<td>14</td>
<td>Korean</td>
<td>So. Korea</td>
<td>No. Korea</td>
<td>27 Jul 1953</td>
</tr>
<tr>
<td>15</td>
<td>Russo - Hungarian</td>
<td>USSR</td>
<td>Hungary</td>
<td>14 Nov 1956</td>
</tr>
<tr>
<td>15.4</td>
<td>follow-up agreement</td>
<td></td>
<td>(27 May 1957)</td>
<td></td>
</tr>
<tr>
<td>15.5</td>
<td>follow-up agreement</td>
<td></td>
<td>(07 Sep 1967)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Sinai</td>
<td>UK</td>
<td>Egypt</td>
<td>06 Nov 1956</td>
</tr>
<tr>
<td>17</td>
<td>Sinai</td>
<td>France</td>
<td>Egypt</td>
<td>06 Nov 1956</td>
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<td>Sinai</td>
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<td>06 Nov 1956</td>
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<tr>
<td>19</td>
<td>Sino - Indian</td>
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<td>22 Nov 1962</td>
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<td>(07 Sep 1993)</td>
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<td>19.5</td>
<td>follow-up agreement</td>
<td></td>
<td>(26 Nov 1996)</td>
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<td>20</td>
<td>Vietnamese</td>
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<td>21</td>
<td>Vietnamese</td>
<td>No. Vietnam</td>
<td>So. Vietnam</td>
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<td>22</td>
<td>Second Kashmir</td>
<td>Pakistan</td>
<td>India</td>
<td>23 Sep 1965</td>
</tr>
<tr>
<td>23</td>
<td>Six Day</td>
<td>Israel</td>
<td>Egypt</td>
<td>10 Jun 1967</td>
</tr>
<tr>
<td>24</td>
<td>Six Day</td>
<td>Israel</td>
<td>Syria</td>
<td>10 Jun 1967</td>
</tr>
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<td>26</td>
<td>War of Attrition</td>
<td>Israel</td>
<td>Egypt</td>
<td>07 Aug 1970</td>
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<td>27</td>
<td>Football</td>
<td>El Salvador</td>
<td>Honduras</td>
<td>18 Jul 1969</td>
</tr>
<tr>
<td>27.5</td>
<td>follow-up agreement</td>
<td></td>
<td>(09 Aug 1976)</td>
<td></td>
</tr>
<tr>
<td>27.6</td>
<td>follow-up agreement</td>
<td></td>
<td>(30 Oct 1980)</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Event</td>
<td>Country 1</td>
<td>Country 2</td>
<td>Date 1</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
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<td>------------</td>
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<tr>
<td>28</td>
<td>Bangladesh</td>
<td>India</td>
<td>Pakistan</td>
<td>17 Dec 1971</td>
</tr>
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<td>28.5</td>
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<td>Israel</td>
<td>Egypt</td>
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<td>follow-up agreement</td>
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<td>Israel</td>
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<td>Israel</td>
<td>Jordan</td>
<td>24 Oct 1973</td>
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<td>follow-up agreement</td>
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<tr>
<td>32</td>
<td>Turco - Cypriot 1</td>
<td>Turkey</td>
<td>Cyprus</td>
<td>29 Jul 1974</td>
</tr>
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<td>Turco - Cypriot 2</td>
<td>Turkey</td>
<td>Cyprus</td>
<td>16 Aug 1974</td>
</tr>
<tr>
<td>35</td>
<td>Ethiopia - Somalia</td>
<td>Cuba</td>
<td>Somalia</td>
<td>14 Mar 1978</td>
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<td>36</td>
<td>Ethiopia - Somalia</td>
<td>Ethiopia</td>
<td>Somalia</td>
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<td>follow-up agreement</td>
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<tr>
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<td>Uganda - Tanzania</td>
<td>Tanzania</td>
<td>Uganda</td>
<td>12 Apr 1979</td>
</tr>
<tr>
<td>38</td>
<td>Uganda - Tanzania</td>
<td>Tanzania</td>
<td>Libya</td>
<td>12 Apr 1979</td>
</tr>
<tr>
<td>39</td>
<td>Sino - Vietnamese</td>
<td>China</td>
<td>Vietnam</td>
<td>10 Mar 1979</td>
</tr>
<tr>
<td>40</td>
<td>Iran - Iraq</td>
<td>Iran</td>
<td>Iraq</td>
<td>20 Aug 1988</td>
</tr>
<tr>
<td>40.5</td>
<td>follow-up agreement</td>
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<td></td>
</tr>
<tr>
<td>41</td>
<td>Falklands</td>
<td>UK</td>
<td>Argentina</td>
<td>20 Jun 1982</td>
</tr>
<tr>
<td>41.5</td>
<td>follow-up agreement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Lebanon</td>
<td>Israel</td>
<td>Syria</td>
<td>05 Sep 1982</td>
</tr>
<tr>
<td>43</td>
<td>Sino - Vietnamese</td>
<td>China</td>
<td>Vietnam</td>
<td>06 Feb 1987</td>
</tr>
<tr>
<td>43.5</td>
<td>follow-up agreement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43.6</td>
<td>follow-up agreement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Gulf War</td>
<td>USA</td>
<td>Iraq</td>
<td>11 Apr 1991</td>
</tr>
<tr>
<td>45</td>
<td>Gulf War</td>
<td>Saudi Arabia</td>
<td>Iraq</td>
<td>11 Apr 1991</td>
</tr>
<tr>
<td>46</td>
<td>Gulf War</td>
<td>Kuwait</td>
<td>Iraq</td>
<td>11 Apr 1991</td>
</tr>
<tr>
<td>47</td>
<td>Azeri - Armenian 1</td>
<td>Armenia</td>
<td>Azerbaijan</td>
<td>21 Mar 1992</td>
</tr>
<tr>
<td>48</td>
<td>Azeri - Armenian 2</td>
<td>Armenia</td>
<td>Azerbaijan</td>
<td>12 May 1994</td>
</tr>
<tr>
<td>51</td>
<td>First Kashmir</td>
<td>India</td>
<td>Pakistan</td>
<td>01 Jan 1949</td>
</tr>
</tbody>
</table>

* War resumes after data are censored
**Variables**

Variables are included in both versions of the data, unless noted otherwise – tc refers to time-constant version, tv to time-varying version.\(^5\)

**Variables for Data Manipulation**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td><strong>id</strong></td>
<td>case id number</td>
</tr>
<tr>
<td><strong>warnumb</strong></td>
<td>COW war number</td>
</tr>
<tr>
<td><strong>war</strong></td>
<td>war name</td>
</tr>
<tr>
<td><strong>ccode1</strong></td>
<td>COW country code for belligerent 1</td>
</tr>
<tr>
<td><strong>ccode2</strong></td>
<td>COW country code for belligerent 2</td>
</tr>
<tr>
<td><strong>cluster</strong></td>
<td>conflict cluster</td>
</tr>
<tr>
<td>1 =</td>
<td>arab-israeli (including all dyads in Sinai war)</td>
</tr>
<tr>
<td>2 =</td>
<td>india-pakistan</td>
</tr>
<tr>
<td>3 =</td>
<td>korea</td>
</tr>
<tr>
<td>4 =</td>
<td>russo- hungary</td>
</tr>
<tr>
<td>5 =</td>
<td>sino-indian</td>
</tr>
<tr>
<td>6 =</td>
<td>vietnam</td>
</tr>
<tr>
<td>7 =</td>
<td>football war</td>
</tr>
<tr>
<td>8 =</td>
<td>turco-cypriot</td>
</tr>
<tr>
<td>9 =</td>
<td>ethiopia somalia</td>
</tr>
<tr>
<td>10 =</td>
<td>uganda-tanzania</td>
</tr>
<tr>
<td>11 =</td>
<td>sino-vietnam</td>
</tr>
<tr>
<td>12 =</td>
<td>iran-iraq</td>
</tr>
<tr>
<td>13 =</td>
<td>falklands</td>
</tr>
<tr>
<td>14 =</td>
<td>gulf war</td>
</tr>
<tr>
<td>15 =</td>
<td>azeri-armenian</td>
</tr>
</tbody>
</table>

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\(^6\) In the time varying version, some variables are indicated only for the first observation in the case (i.e., for cfyear=1)
**cfdate**

Date of cease-fire (tc only)

Source: COW and research on individual cases.

**date0**

Start date of observation (tv only)

**date1**

End date of observation (tv only)

Note: for first observation, date0 = cfdate.

**newwar**

Period ends with no new COW war for the dyad (tv only)

- 0 = period ends with no new COW war for the dyad
- 1 = period ends with outbreak of a new COW war for the dyad (i.e., peace failure)

**cfyear**

Observation is not first observation for the case (tv only)

- 0 = observation is not first observation for the case
- 1 = first observation for each case

**followup**

Follow up agreement cases

- -1 = cases that precede a followup agreement (e.g. id 27)
- 0 = cases with no followup agreement
- 1 = cases that are the followup to an earlier case (e.g. id 27.5)

**fudate**

Date of followup agreement (tc only)

**morewar**

No new war (up to 1 Jan 2000) (tc only)

- 0 = no new war (up to 1 Jan 2000)
- 1 = belligerents fought again in full-scale war

**nextdate**

Date of next war, if any, between same belligerents (tc only)

**peace**

Duration of peace, in months (tc only)

Measured from cfdate to nextdate, fudate, or to 1 Jan 2000, whichever comes first

Note: if morewar=0 cases are censored at the start of 2000; if followup= -1, cases are censored at the date of the followup agreement.
Unlike the duration of peace in the time-varying data, this measure accounts for the failure of peace between India and Pakistan in 1999. Errata: Table 6.4, column 3 in Fortna 2004, p.207 erroneously reports results using peace rather than nf_peace. Results are not substantially different, however.

nf_peace duration of peace without censoring at followup cases, in months (tc only)
            Measured from cfdate to nextdate or to 1 Jan 2000, whichever comes first.\(^7\)

Note: Coded as missing for follow-up agreement cases.

uncensor case is uncensored (tc only)
0 = censored case (morewar=0 or followup=-1)
1 = uncensored case (morewar=1)

Note: id 28 (Bangladesh) is censored for peace (because of a follow up agreement) but nor for nf_peace. Marked here as uncensored.

drop cases to drop for robustness checks
0 = regular case
1 = questionable whether principal belligerent (i.e., meets objective 1/10 troop criteria but not necessarily common sense to include it)
2 = marks all but one of the observations in cases for which all belligerents signed identical agreements (remaining case selected at random)

match random id marker (tc only)
For use in blind coding of cases

\(^7\) Unlike the duration of peace in the time-varying data, this measure accounts for the failure of peace between India and Pakistan in 1999. Errata: Table 6.4, column 3 in Fortna 2004, p.207 erroneously reports results using peace rather than nf_peace. Results are not substantially different, however.
Situational Variables

Decisiveness Measures

tie military outcome
0 = victory for ccode1
1 = tie

Sources: Stam 1996, and for cases not included Stam’s data, COW’s “outcome” variable.
Note: where Stam and COW disagree (10 cases), I used Stam, as military outcomes are the focus of his study.

For first portion of COW wars split in two (see above):
id=1-5 (Palestine 1) coded 0, a victory for Israel as it was clear that Israel was dominating militarily even before the stoppage (see Goldstein 1992).

id=32 (Turco-Cypriot 1), coded 1, a tie as there was a standoff after initial Turkish invasion, until Turkey partitions Cyprus by force in id=33 (See Brogan 1990, p.348).

id=47 (Azeri-Armenian 1) coded 0, military stalemate in 1992
id=48 (Azeri-Armenian 2) occurs after COW and Stam’s data. coded 1, military victory for Armenia, as it has occupied all of Nagorno-Karabakh and almost 20% of Azerbaijan’s territory by 1994 (See Carley 1998).

untie opposite of tie (military victory) (tv only)
= 1 if tie=0
= 0 if tie=1

Note: used in Fortna 2003. Referred to as military victory.

imposed imposed outcome
0 = relatively balanced victory or tie
1 = lopsided military outcome (tie = 0 and MID “settlement” = imposed)

Note: some cases in which MID lists the settlement as imposed are coded as a tie according to Stam, and therefore here, (e.g., France and Britain vs. Egypt in the Sinai and the US and Vietnam). Imposed is recoded for Bangladesh, which is listed as “negotiated” rather than “imposed” in MID (reflecting MID’s concern with whether negotiations took place, rather than the military outcome.)

8 Dyads are arranged such that the victor, if there is one, is listed first as ccode1.
EUGene was run to collect directed dispute dyad data; with one case per dispute-year; target vs. initiator dropped if no new dispute; including all joiners; using both directions of the dyad; counting cases prior to war’s start year. Ongoing disputes counted as one per year they last.

**foreign**  
Victor-imposed regime change  
0 = no new government imposed  
1 = winner imposes new government on loser

Source: Werner 1999’s variable “FOREIGN”  
Note: only coded 1 for three dyads: Russo-Hungarian, Ugandan-Tanzanian, No. vs. So. Vietnam

**Cost Measures**

**death1**  
code1’s battle deaths  

**death2**  
code2’s battle deaths

Source: COW3. For COW wars split in two (see above), battle deaths for each part are from Clodfelter 1992. If data were not available for each part, COW’s battle deaths numbers were divided proportional to the duration of fighting in that segment

**lnDeaths**  
cost of war: natural log of battle deaths for dyad  
\[ \text{lnDeaths} = \ln(\text{death1} + \text{death2}) \]

**s1_death**  
total deaths on side of war, for ccode1  

**s2_death**  
total deaths on side of war, for ccode2

**t_deaths**  
total deaths for war (not just dyad)  
\[ \text{t_deaths} = (\text{s1_death} + \text{s2_death}) \]

**duration**  
duration of war, in months  
Measured from COW start date to cfdate

**History of Conflict Measures**

**disputes**  
prior militarized interstate disputes  
\[ \text{disputes} = \text{number of MID disputes in dyad before war} \]

Source: EUGene generated dataset, using 1996 MID data.

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* EUGene was run to collect directed dispute dyad data; with one case per dispute-year; target vs. initiator dropped if no new dispute; including all joiners; using both directions of the dyad; counting cases prior to war’s start year. Ongoing disputes counted as one per year they last.
dyadage years disputes possible
  = number of years both states in the interstate system (since 1816) at time the war started

Source: COW codebook
Note: a few states drop out and rejoin the system (e.g. France drops out for 1943; Syria drops out in 1959-60; Egypt drops out 1883-1936) – these years are not included in dyadage, as there could be no disputes recorded in those years.

cfhist history of conflict at time of cease-fire
  = (disputes/dyadage)

Note: Coded 1 for wars at independence (e.g., First Arab-Israeli War and First Kashmir War). Errata: earlier versions of the tv data used erroneously had id 48 (Azeri-Armenia 2) coded as 1 instead of 2. This makes no difference to the results, but for exact replication use:

cfhist_r replication cfhist
  = cfhist, except in id=48 (where =1 instead of 2)

Stakes Measures

stake stakes of the conflict
  1 = threat to influence in the international or regional system
  2 = threat to political system (overthrow of regime, intervention, subversion.)
  3 = threat to territorial integrity (integration, annexation, separatism)
  4 = threat of grave damage (large casualties, mass bombings, etc)
  5 = threat to existence (survival of population, existence of country, annexation, occupation)

stake_ip stakes < 3
stake_t stakes = 3
stake_g stakes = 4
stake_e stakes = 5

Source: International Crisis Behavior (ICB2) data (Brecher and Wilkenfeld 1992) coding of "gravity of value threatened" (GRAVCR), reordered following Gelpi 1997. This measure represents the highest value threatened in the dyad.
Note: most of the COW wars are included in ICB as a single crisis. For those wars that corresponded to several crises, I judged the value threatened by the war as a whole. Data filled in for:
  id 44-46 Gulf War: coded 4 for Iraq vs. US and Saudi Arabia, 5 for Iraq and Kuwait
  id 31 Jordan-Israel given same coding (4) as other dyads in Yom Kippur war
  id 35 Cuba-Somalia given same (3) as Ethiopia-Somalia in warnumb 189
**rev_type**  
issue at stake  
1 = war fought over territory  
2 = war fought over policy  
3 = war fought over regime/government

**revTerr**  
territorial issue  
0 = war fought policy or regime/government (rev_type > 1)  
1 = war fought over territory (rev_type = 1)

Source: Militarized Interstate Dispute data (Jones, Bremer, and Singer 1996) “revision type.” Note: the one case coded by MID as “other” (the Football war) is coded here as territorial because the issues were a combination of disputed boundaries and land pressures/immigration (See Anderson 1981; Martz 1978.

**Measures of Who Fought**

**multi**  
multilateral war  
0 = bilateral war  
1 = dyad was part of a multilateral war

**contig**  
contiguous  
0 = dyad not contiguous by land and separated by at least 150 miles of water  
1 = dyad contiguous by land, or separated by less than 150 miles of water

**gp_bel**  
great power as belligerent in war  
0 = no great power belligerent in war  
1 = Great Britain, France, or China as belligerent in the war  
2 = US or Soviet Union as belligerent in the war

**perm5**  
permanent five member of Security Council as belligerent in war  
0 = gp_bel = 0  
1 = gp_bel > 0

**usbel**  
US as belligerent in war  
0 = US not a belligerent  
1 = US fought in the war

Note: gp_bel, perm5 and usbel mark whether the great power is listed as a participant in the war,
not just the dyad (e.g., all dyads in the Sinai war, including Israel-Egypt, are coded gp_bel = 1).
Does not indicate other forms of involvement (aid, etc.).

**israel**  
Arab-Israeli dyad  

0 = not and Arab-Israeli dyad  
1 = dyad consists of Israel and an Arab state  

Note: unlike gp_bel etc, israel marks participation in the dyad, not the war (so Britain and France vs. Egypt in the Sinai war are coded israel = 0).

### Capability Measures

**cap_1**  
code1's military capabilities index  

**cap_2**  
code2's military capabilities index  

Source: COW National Capabilities Data. Average of state’s share of the system’s total population, urban population, iron and steel production, energy consumption, military manpower and military expenditures.

**prepond**  
preponderance of power  

= \(|\text{cap}_1 - \text{cap}_2|/(\text{cap}_1 + \text{cap}_2)\)  

**prep_att**  
preponderance of power at cease-fire  

(tv only)  

= prepond for cfyear=1 (constant over life of case)  

Note: prepond varies over the life of a case, prep_att is constant.

**maxcap**  
military capabilities of the stronger side  

= the larger of cap_1 and cap_2 in cfyear, multiplied by 10,000.  

**lagcap_1**  
lagged capabilities index  

= cap_1 from previous year  

**lagcap_2**  
lagged capabilities index  

= cap_2 from previous year  

**d_relcap**  
change in relative capabilities  

(tv only)  

= \(|((\text{cap}_1-\text{lagcap}_1)/\text{lagcap}_1) - ((\text{cap}_2-\text{lagcap}_2)/\text{lagcap}_2)|\)
Following Werner 1999, p. 923, fn. 7
Note: \( d_{relcap} \) is missing after 1994 because COW capability data ends then. Also note that \( d_{relcap} \) outliers (all 7 cases in which \( d_{relcap} > 1 \)) are all in 1993, possibly reflecting changes with the end of the cold war.\(^{10}\)

\[ \text{lagrelcp} \quad \text{lagged change in relative capabilities} \quad \text{(tv only)} \]
\[ = d_{relcap} \text{ from previous year} \]

Note: missing for cases in which war resumes in less than 1 year – beware missing data bias!

**Expected Utility Measures**

\[ \text{equilib} \quad \text{equilibrium outcome in “international interaction game”} \quad \text{(tv only)} \]
\[ 0 = \text{status quo (in both ccode1 vs. ccode2 and ccode2 vs. ccode1, status quo is predicted)} \]
\[ 1 = \text{demand (negotiation or acquiescence predicted in either ccode1 vs. ccode2 or ccode2 vs. ccode1, but capitulation or force predicted in neither)} \]
\[ 2 = \text{force (capitulation expected in either, but not war) [no cases in this category]} \]
\[ 3 = \text{war (war predicted in either ccode1 vs. ccode2 or ccode2 vs. ccode1)} \]


\[ \text{eudemand} \quad \text{demand predicted in equilibrium} \quad \text{(tv only)} \]
\[ 0 = \text{equilib not 1} \]
\[ 1 = \text{equilib = 1} \]

\[ \text{euwar} \quad \text{war predicted in equilibrium} \quad \text{(tv only)} \]
\[ 0 = \text{equilib not 3} \]
\[ 1 = \text{equilib = 3} \]

**Democracy Measures**

\[ \text{dem1} \quad \text{annual Polity democracy score for ccode1} \]
\[ \text{dem2} \quad \text{annual Polity democracy score for ccode2} \]

Source: EU Gene, using Polity III’s “dem” variable Jaggers and Gurr 1996.
Note: consists of democ score minus autoc score, ranges from -10 to 10

\(^{10}\) Values are higher than average in 1991 and 1992, and dramatically so in 1993.
onedem  at least one democracy in dyad
  0 = neither dem1 nor dem2 > 5
  1 = either dem1 or dem2 > 5

twodem  joint democracy
  0 = either dem1 or dem2 (or both) < 6
  1 = both dem1 and dem2 > 5

Note: to reduce the number of observations with missing data, I interpolated onedem and twodem for some years in which polity data was missing (e.g., Egypt is considered a non-democracy in 1952, because its scores in 1951 and 1953 are 1 and -7 respectively). If the year before or after the missing data the dem score was close to the threshold, I left onedem (and if necessary, twodem) missing (e.g., Syria in 1958, as it rated a 7 in 1957), I also did not fill in data for newly independent states such as Israel in 1948 (it rates a 10 in 1949) or India in 1949 (it rates 9 in 1950). Interpolated data for: Egypt 1952; Hungary 1956; Honduras 1981; Somalia 1991-1994; Ethiopia 1991-1993; Uganda 1979-1980, 1985. None of these were considered democracies.

lagdem1  lagged democracy score for ccode1
         = dem1 in previous year

lagdem2  lagged democracy score for ccode2
         = dem2 in previous year

politych  polity change (tv only)
         = abs(dem1-lagdem1)+abs(dem2-lagdem2)

newdem  new democracy (tv only)
  0 = neither side newly a democracy
  1 = one side newly a democracy, i.e., lagdem < 6 and dem > 5

Note: once a state becomes a new democracy, newdem = 1 for each subsequent period until that state’s democracy’s score falls below 6 (thus providing a very lenient test of the hypothesis that states crossing the threshold to democracy are more war prone).

Predicted Peace

i_Intime  predicted baseline prospects for peace (tv only)
         = -1 * ln(predicted peace duration)

Where duration is predicted from the model shown in Table 3.1, col. 1 of Fortna 2004, p.86.
Agreement Variables

Coded by Fortna on the basis of case specific sources and the text (if any) of cease-fire agreements reached.

Only mechanisms that were actually implemented are coded. So, for example, if an agreement has a provision for troop withdrawal, but troops were never actually withdrawn, withdraw is coded 0.

Agreement variables can vary over the life of a case in tv data.

**formal**  
formalism of cease-fire agreement  
0 = no declared cease-fire  
1 = unilaterally declared cease-fire, tacitly accepted by the other side  
2 = tacit or informal acceptance of cease-fire proposal (e.g., UN resolution or mediator’s plan)  
3 = formal acceptance of cease-fire proposal  
4 = formal bilateral or multilateral agreement

**formal_d**  
formalism dummy  
0 = formal < 3  
1 = formal > 2

**withdraw**  
withdrawal of forces  
0 = none  
1 = partial (some areas or part way)  
2 = to status quo ante  
3 = beyond status quo ante

Note: Includes unilateral withdrawals, but not withdrawals out of only narrow demilitarized zones.

**with_dum**  
withdrawal dummy  
0 = withdraw = 0  
1 = withdraw > 0

**with_sqa**  
withdrawal at least to status ante  
0 = withdraw < 2  
1 = withdraw > 1
\textbf{dmz} \hspace{1cm} \text{demilitarized areas} \\
0 = \text{none} \\
1 = \text{partial (some demilitarized areas, but not along full border or front, or < 2 km wide)} \\
2 = \text{demilitarized zone at least 2 km wide}

\textbf{dmz\_dum} \hspace{1cm} \text{dmz dummy} \\
0 = \text{dmz = 0} \\
1 = \text{dmz > 0}

\textbf{dmz\_wide} \hspace{1cm} \text{width of demilitarized zone at widest point, in km.}

\textbf{ac} \hspace{1cm} \text{arms control} \\
0 = \text{none} \\
1 = \text{arms embargo or standfast (no increase or movement forward of weapons or troops)} \\
2 = \text{areas limited to defensive forces only or other limits on arms near the cease-fire line} \\
3 = \text{prohibition on specific weapons or weapons programs}

\textbf{ac\_dum} \hspace{1cm} \text{arms control dummy} \\
= 1 \text{ if } ac>0

\textbf{pk} \hspace{1cm} \text{peacekeeping} \\
0 = \text{none} \\
1 = \text{monitoring (unarmed military observers)} \\
2 = \text{peacekeeping forces (armed)}

\text{Note: peacekeeping measures do not include enforcement missions (such as the UN force in Korea), but do include non-UN missions (such as the Neutral Nations Monitoring Group deployed after the Korean armistice)}

\textbf{pk\_dum} \hspace{1cm} \text{peacekeeping dummy} \\
0 = \text{pk = 0} \\
1 = \text{pk > 0}

\textbf{pk\_num} \hspace{1cm} \text{number of peacekeepers} \\
= \text{number of monitors and/or peacekeeping forces}

\text{Note: if more than one force present, coded number of more important/active group only.}
pk_who    peacekeeping provided by whom
          0 = no pk
          1 = UN
          2 = regional organization (e.g., OAS)
          3 = ad hoc international group (e.g., Neutral Nations in Korea)

pk_pre    pre-existing peacekeeping mission
          0 = peacekeeping new for this war, or no peacekeeping
          1 = peacekeepers present from earlier conflict

Note: coded 0 if there was any new mission, even if there was also a pre-existing one

newpk    peacekeeping (new missions only)
          0 = no peacekeeping, or old mission only
          1 = new monitoring mission deployed for this conflict
          2 = new peacekeeping forces mission deployed for this conflict

Note. newpk = pk if pk_pre = 0; newpk = 0 if pk_pre = 1

newpkdum peacekeeping dummy (new missions only)
           0 = newpk = 0
           1 = newpk > 0

pkopC    highest value of pk over the lifespan of the case

pk_dumC  was there ever peacekeeping in the case?
          0 = pkopC = 0
          1 = pkopC > 1

ext_inv   external involvement
          0 = none
          1 = mediation (third party involvement as mediator of the cease-fire, exercising restraint, acting as patron for one side, etc.)
          2 = guarantee (third party provides explicit or well-understood guarantee of peace)

Note: Does not include UN mediation of the cease-fire or guarantees; it must be a sovereign state taking a particular interest in the process.
19

**internal**  
internal control  
0 = none  
1 = responsibility for irregular forces, actions from territory, etc. stated, but no concrete measures  
2 = concrete measures to ensure control

**paragraph**  
specificity of agreement  
= number of paragraphs in agreement text

Note: Counting rules: count paragraphs of agreement text or UN resolution, not including preamble nor details of boundary markers. Count all numbered or lettered or full paragraphs (e.g. 1...2...a...b... = 4, but 1...2a...b... = 3). Don’t count correspondence unless agreement terms were only spelled out in correspondence. If there was a series of agreements in quick succession, use most detailed.

**detail**  
specificity group  
0 = 0 paragraphs  
1 = 1-20 paragraphs  
2 = 21-80 paragraphs  
3 = over 80 paragraphs

**info**  
confidence-building measures  
0 = none  
1 = information exchanged on mines, troop rotations, and/or maneuvers  
2 = hot-line established  
3 = on-site verification or aerial surveillance system established

Note: highest value coded.  
id=41 (Falklands) follow-up agreement included both hot-line and info on maneuvers;  
id=22 had both mine clearing info and a hot-line.

**info_dum**  
confidence-building measures dummy  
0 = info = 0  
1 = info > 0

**disp_res**  
dispute resolution  
0 = none  
1 = ongoing third party mediation (not including peacekeepers providing dispute resolution)  
2 = joint commission of belligerents to resolve issues as they arise
\textbf{cf\_pa} \hspace{1em} \text{cease-fire or peace agreement}

0 = no agreement (war fizzles or is ended unilaterally)
1 = cease-fire or armistice
2 = renunciation of use of force, restoration of diplomatic relations, or full fledged peace treaty

\textbf{paC} \hspace{1em} \text{peace treaty (constant over lifespan of case) (tv only)}

= 1 if cf\_pa = 2 within a year of the original cease-fire (i.e. does not include followup agreements.

Note: used in Fortna 2003. Referred to as \textit{treaty}.

\textbf{settle} \hspace{1em} \text{settlement of political issues}

0 = no settlement
1 = settlement imposed by force or unilateral action (de facto)
2 = settlement by agreement (de jure), even if this is part of decisive victory

\textbf{index} \hspace{1em} \text{index of agreement strength, normalized}

= \text{formal\_d} + \text{with\_sqa} + \text{dmz\_dum} + \text{ac\_dum} + \text{pk/2} + \text{ext\_inv/2} + \text{detail/3} + \text{internal/2} + \text{info\_dum} + \text{disp\_res/2}

Note: missing values for mechanisms counted as zero.

\textbf{strength} \hspace{1em} \text{subjective coding of agreement strength}

0 = none (no mechanisms)
1 = very weak (a few, weak mechanisms, e.g. withdrawal to status quo ante, or a partial DMZ)
2 = weak (slightly more or more extensive measures, e.g., a peacekeeping mission or a mechanism for dispute resolution)
3 = moderate (more substantial mechanisms, e.g., formal and specific agreement involving peacekeepers, and/or a wider DMZ or concrete measures to disarm rogue groups)
4 = strong (formal, very detailed agreements, that implement large peacekeeping missions, arms control provisions, and CBMs etc.)
REFERENCES


Maoz, Zeev. 2001. Comments on the MID 2.1 Dataset and its Transformation to Dyadic MID Data DYADMID1.1. Tel Aviv: Tel Aviv University.


