Scoring rules 0.4

How two countries are scored: the data, the formulas, a worked example, how sure we are, the checks and the limits.

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ABSTRACT

NationsRelations scores how two countries relate along four dimensions (UN votes, trade, security and shared clubs) and combines them into a relationship index from −100 (opposed) to +100 (very close). The rules are fixed, the same for every pair, and written out in full here. No score is produced by a language model. This paper specifies scoring rules 0.4, which score 18,721 pairs of 194 countries (the 193 UN member states and the observer state of Palestine) from data loaded in October 2026. It gives the data, the formulas and their parameters, a worked example, what is deliberately not scored, how sure we are of each number, the checks that were made, and the limits.

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CITE AS

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1 What changed from the previous version

- No security score and no index for a pair in which one government fought an authority that rules part or all of the other country without holding its UN seat (the authorities named in rules 0.3: the Ansarallah (Houthi) authorities in Yemen from 2015, the Taliban in Afghanistan in 1996–2001 and from 2022). Who the relationship is with, and which rules apply, is unclear there: the government the UN seats did not do the fighting, and the authority that did is not a state in the UN's list. Under 0.3 such fighting was left out of the security score, so pairs such as Saudi Arabia–Yemen read “Very close” and the United States–Yemen “Distant”. These 24 pairs are now labelled “Not computable”; their pages show the votes, trade and the fighting with its source, and say why there is no index.

2 Purpose and principles

The site answers one question for any two countries: how do they really get along? It does so in three voices. **Say** is what governments say about each other in their General Debate speeches at the UN. **Do** is what they do: how they vote, how much they trade, whether they fought on opposite sides or the same side, which clubs they share. **Live** is how their people are connected (migration, refugees, football).

- **One rule for every country.** A score is never adjusted for one pair; a change of rule applies to all pairs and gets a new version.
- **Rate claims, not countries.** The index describes data. The labels describe the data, not the countries or their governments.
- **Fingerprint first, one number second.** The four scores are the main view; the index is always shown next to its weights, which readers can change.
- **Words are shown, not scored,** until stance labels have been checked by people. The Live layer is never scored.
- **No score comes from AI.** A language model may answer a reader's question from one page's data, and every number it uses is checked against that data.

3 Data

Source	Used for	Period
Nations on Record: UN General Assembly votes (Voeten et al., UN Digital Library)	Yearly agreement between countries; resolution-level votes for topics	1946–2025
UN General Debate speeches (Baturo, Dasandi and Mikhaylov; Nations on Record)	Sentences in which one country names another (258,844)	1946–2025
IMF International Trade in Goods, via Nations on Record	Goods exports in each direction, by year	to 2025
Uppsala Conflict Data Program, Dyadic and Battle-Related Deaths, version 26.1	Who fought on which side, and when	1946–2025
Ideal points (Bailey, Strezhnev and Voeten)	A voting position per country and year, with a 90% range (11,459 values)	to 2025
Group memberships, checked by hand (Nations on Record)	Shared clubs and NATO	current
UN DESA International Migrant Stock 2024; UNHCR; international football results	Live layer only; never scored	various

Russia includes the Soviet Union and Germany includes West Germany, as in Nations on Record. Observer states, such as Palestine, do not vote in the General Assembly, so some pairs have no votes score and therefore no index. Licences and loading dates are listed on the Data page.

4 Pairs, orientation and time windows

A pair is stored once, with the two ISO 3166-1 alpha-3 codes in alphabetical order; a page shows the pair from the side named first in its address. Votes and trade use the last 3 years with data (2022–2024 for votes, 2023–2025 for trade in this release). Armed conflict is read up to the last year of the UCDP data (2025). Speech counts use all sessions since 1946 and, as “recent”, the last 10 General Debates.

5 The four scores

UN votes, −100 to +100

For each pair we take the mean yearly agreement over the window, where yearly agreement is the agreement score of Voeten et al. on recorded votes on whole texts (final passage): the same vote counts 1, an abstention against a yes or a no counts ½, a yes against a no counts 0 (Lijphart's index; identical to Signorino and Ritter's S-score). Before 8 November 2026 this paper called it the share of votes on which the two cast the same vote; the computation has not changed. The score does not use that share directly. Most of the world votes alike, so a global ranking would make France and Germany +62 and Canada and the United States +6. Instead each country ranks its own voting partners by that mean:

```
position of B for A = (average ascending rank of B among A's partners − 1) ÷ (number of partners − 1)
position of the pair = average of the position of B for A and the position of A for B
votes score = round(200 × position of the pair − 100)
```

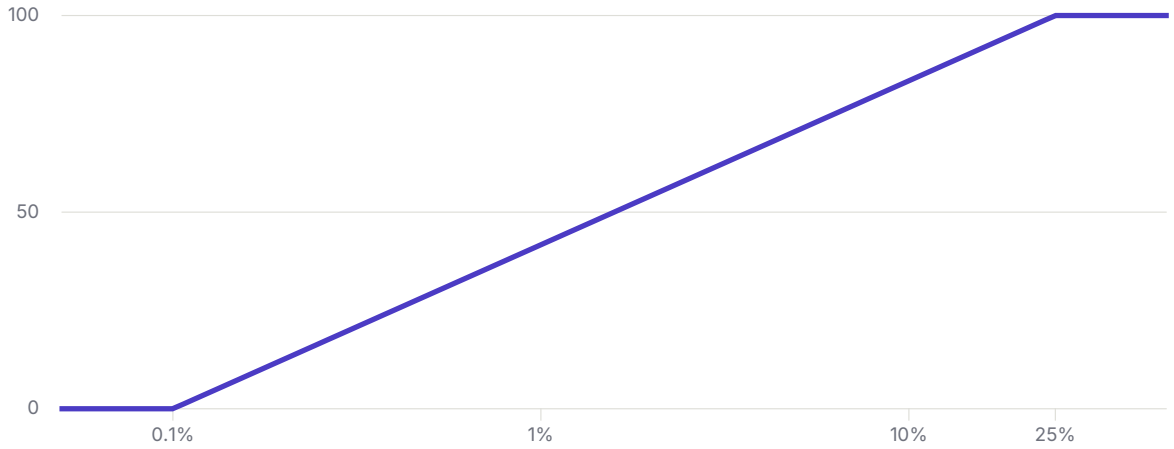
A position of 1 means the closest partner, 0 the furthest. Countries that voted alike share a rank (average rank). A pair with no votes in the window has no votes score.

Trade, 0 to 100

Goods trade between the two is the sum of exports in both directions, averaged over the window. Each country’s total trade is its exports plus imports, averaged over the same window. The score follows the larger of the two shares (the more dependent side), on a logarithmic scale, because a percentile would make 0.1% of Iran’s trade look like a middling tie:

```
trade score = round(100 × clip((log10(larger share) − log10(0.1%)) ÷ (log10(25%) − log10(0.1%)), 0, 1))
```

A share of 0.1% or less scores 0 and 25% or more scores 100. The window ends at the last year in which at least 80% of countries report. If either country has no trade totals there is no trade score.



The trade score as a function of the larger share of total trade (logarithmic horizontal axis). Vertical: trade score.

Security, −100 to +100

From the Uppsala Conflict Data Program. For each year and pair we record the most direct relation: **primary** (both are main parties of the same conflict, on opposite sides), **direct** (one is a main party and the other sends troops to a side), **proxy** (both only send troops to the sides of a third party’s conflict, as

peacekeeping contributors do). Proxy relations count for little as fighting and never as alliance. A relation fades with the years since the last data year:

Years since the relation was last recorded	Weight kept
0 to 4	1
5 to 14	0.5
15 to 29	0.2
more than 29	0

```
opposed = largest of: 100 × kept (primary), 60 × kept (direct), 30 × kept (proxy)
if opposed > 0:  security score = −opposed        (recent fighting on opposite sides outweighs any alliance)
otherwise:  security score = min(80, 50 if both are in NATO + 30 × kept (fighting side by side, primary or direct))
```

The UN is the reference for who represents a country: the government that holds its UN seat. UCDP names as a country's government whoever holds its capital; where the two differ, the authority UCDP calls the government counts as a non-state party and the side that holds the seat as the government (Yemen from 2015, Afghanistan in 1996–2001 and from 2022). Fighting against such an authority is shown as context, not counted as a war between two states.

No security score and no index are computed for a pair in which one government fought such an authority: who the relationship is with, and which rules apply, is unclear. These pairs are labelled “Not computable”, and their pages show the fighting as context.

No security score is computed when one of the two is a UN non-member observer State (Palestine). UCDP records wars between states; a conflict over the territory of a country it does not list as a state, fought between a government and armed groups, is not one, so a score of 0 would wrongly read as “no armed conflict”. The pair page shows such conflicts as context.

Shared clubs, 0 to 100

25 points for each tracked group both belong to (EU, AU, ARAB, ASEAN, BRICS, G7, G20, GCC, P5; P5 is the five permanent members of the Security Council) and 25 for the same UN regional group, capped at 100. Membership lists are checked by hand.

6 The index

The index is the weighted average of the scores that exist, with default weights votes 35, trade 20, security 30, inst 15 (sum 100); readers can change the weights on every pair page and see the effect at once.

```
index = round( sum of (weight × score) ÷ sum of the weights of the scores that exist )
```

The index is shown only if both a votes score and a trade score exist; otherwise the pair is labelled “Not enough data”. Labels describe the number:

Index	Label
+55 and above	Very close
+25 to +54	Close
0 to +24	Neutral
−30 to −1	Distant
below −30	Opposed

One exception: when the security score is −60 or lower, the label is “Distant” at most, whatever the index. Such a score means the two are recorded on opposite sides of armed conflict in the last five data years, and a friendlier label would hide that. The index is not changed.

7 A worked example

India and Pakistan, as built on 2026-10-20. Inputs: for India, Pakistan ranks 5 of 191 voting partners; for Pakistan, India ranks 82 of 191. Goods trade is 0.0654% of India's trade and 0.769% of Pakistan's. UCDP records them opposed as main parties in 2025, the last data year. They share no tracked group but belong to the same UN regional group.

Score	Calculation	Result
UN votes	positions 98 and 57; average 78; 200 × 0.776 − 100	+55
Trade	larger share 0.769%; on the log scale	37
Security	primary, last year: 100 × 1	−100
Shared clubs	0 groups + same region = 1 × 25	25

index = (35×55 + 20×37 + 30×(−100) + 15×25) ÷ 100 = +0.4, shown as 0: Distant

8 What is not scored

- **Words.** The sentences in which one country names another, and the keywords beside the name, are shown and counted. A keyword in the same sentence says nothing about who is accused of what, so words do not enter a score until stance labels have been checked by people.
- **People.** Migration, refugees and football are shown for context. People moving between two countries says nothing about whether their governments get along.
- **Moments.** The dated events on featured pairs are editorial context with a reference; they never enter a score.

9 Votes by topic

Overall agreement hides what separates two governments, so agreement is also counted per issue: disarmament, Middle East, human rights, colonialism, nuclear weapons, economic development, using the topic labels of the UN voting dataset. Only roll-call votes on whole texts count (amendments and single paragraphs are left out), yes, abstain and no are counted vote by vote with the same rule as the headline agreement (the same vote 1, an abstention against a yes or a no ½, a yes against a no 0; until 8 November 2026 an abstention counted as a full difference here). The window starts in 2010. Disarmament, colonialism and economic development are coded together by the source from 2019, so they count votes to 2018. A share needs at least 5 shared votes. The thin line on each bar is the 95% Wilson range for the number of votes; votes are not independent draws, so it understates the uncertainty.

10 Voting positions

Ideal points (Bailey, Strezhnev and Voeten) summarise all of a country's recorded votes in one number per year, with a 90% range; higher means voting more like the United States and Western democracies. It is not a moral score. Two countries are called clearly apart on this dimension only if their 90% ranges do not overlap; if they overlap, their votes alone cannot tell the positions apart.

11 How sure we are

Each score carries a level, High, Medium, Low or None, that says how much data stands behind it. The level never changes a score.

Score	High	Medium	Low	None
UN votes	150 or more shared whole-text votes in the window	50 to 149	fewer than 50	no shared votes

Score	High	Medium	Low	None
Trade	goods trade reported in all 3 years	in 2 years	in one year or none	no trade series
Security	always: UCDP covers every UN member state	–	–	pairs with a non-member observer State: not computed
Shared clubs	always: the list is fixed	–	–	–
Index	as sure as the weaker of votes and trade			no index

150 shared votes give a sampling range of about ±8 points for a share near 50%, 50 about ±14.

12 Checks that were made

- **Recomputation.** The trade, security, shared-clubs and index scores of all 18,721 pairs were recomputed from the stored facts with the formulas above and equal the stored values; the votes score was reproduced to within 2.6 points by the simple rank formula (ties between countries explain the difference).
- **Topics.** For a test pair the numbers of shared votes and shares per topic equal those of the topic view of Nations on Record, which applies the same rules.
- **Automated tests** cover the scoring rules, the explanations, the confidence levels, the data downloads and the API.
- **Editorial review.** The thirty featured pairs were reviewed by the owner; hooks that did not match the data were corrected. Mistakes reported by readers are decided in public on the Corrections page.

13 Limits

- UN votes and speeches are what governments say in one forum. Bilateral diplomacy, treaties, embassies and sanctions are not in the data of this version.
- Trade covers goods, not services, investment or energy pipelines, in current dollars; customs data cannot tell zero trade from trade that was not reported.
- UCDP counts conflicts between state or organised parties with at least 25 battle-related deaths a year. Violence by groups without a government side does not count against a government.
- One index compresses a two-sided relationship; the trade score follows the more dependent side, and a pair can be close for one of them and distant for the other.
- The windows are short by design (three years), so a score reflects now rather than history; the yearly series on each pair page show the history.
- Source data are updated once a year when the General Assembly sessions are published; scores can move when the data move, and the version and build date say which data.

14 Reproducibility and versions

Every score on a page, in a file or in a PDF carries the rules version and the build date. The rules version changes only when a rule or parameter changes; a change applies to all pairs, is announced on the What changed page, and gets its own frozen page like this one. Page addresses never change. The code that builds the scores is deterministic, the source files and the database are backed up with a manifest of the rules version and loading dates, and the scores of all pairs can be downloaded.

15 How to cite

NationsRelations. (2026). Scoring rules 0.4: method paper (revision 1). https://nationsrelations.org/method/0.4. Rules released 2026-11-14; scores built 2026-11-14. Licence: CC BY-NC 4.0. A DOI is not yet assigned; one is planned with the first yearly release.

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