

Tower of Babble?

Predicting UN (in)action

Final Presentation

DAT7

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Can we predict what the UN Security Council will do?



Building a predictive model

- Inputs: records of UN Security Council meetings
- Outcomes: UN Security Council Resolutions
- Timeframe: 1994 – 2014
- Total observations: 1,236
- Only considering matters of peace and security, not admission of new members, appointment of judges to international courts, etc.

Possible outcomes

Started with 6 categories...

- 0 – no action
- 1 – soft measures (observers)
- 2 – prohibitive measures (embargoes)
- 3 – hard measures (peacekeeping missions)
- 4 – reversal of soft measures
- 5 – reversal of prohibitive measures
- 6 – reversal of hard measures

... and ended with 2.

- 0 – soft action / no action
- 1 – intervention (mission, sanctions, embargoes)

→ Not enough observations for 6 categories, many fit into more than one

Dataframe

	record	day	press_release	topic	year	category	outcome	region	record_number	meeting_text
0	S/PV.3326	6-Jan	SC/5770	Rwanda	1994	0	S/RES/893 (1994)	4	3326	Ô¸UNITED\r\nNATIO Council\...
1	S/PV.3329	14-Jan	SC/5775	South Africa	1994	0	S/RES/894 (1994)	4	3329	Ô¸UNITED\r\nNATIO Council\...
2	S/PV.3331	28-Jan	SC/5779	Middle East UNIFIL	1994	0	S/RES/895 (1994)	3	3331	UNITED\r\nSNATIONS\ Council\r\nPROVISION/
3	S/PV.3332	31-Jan	SC/5780	Georgia	1994	0	S/RES/896 (1994)	5	3332	UNITED\r\nSNATIONS\ Council\r\nPROVISION/
4	S/PV.3334	4-Feb	SC/5782	Somalia	1994	1	S/RES/897 (1994)	4	3334	UNITEDUNITED\r\nSNA Council...

Naïve Bayes & Scikit-learn

- Feature: meeting text
- Response: category
- ngram_range: 5
- Accuracy: 75%
- AUC: 0.82
- More FN than FP → higher specificity, lower sensitivity

Naïve Bayes & Scikit-learn

Most informative for intervention

-11.9945 000 people lost lives endless
-11.9945 04 2014 meeting called order
-11.9945 07 2014 meeting called order
-11.9945 07 2014 president floor representative

-11.9945 10 20 meeting called order
-11.9945 10 20 new york president
-11.9945 10 2013 meeting called order

-11.9945 10 despite present quiet israeli
-11.9945 10 president like inform council

-11.9945 10 year capacity building plan
-11.9945 10 years security council äôs
-11.9945 1044 1996 send clear unambiguous
-11.9945 1062 contains text draft resolution
-11.9945 1063 contains text draft resolution

-11.9945 11 16 new york president
-11.9945 11 25 adoption agenda agenda
-11.9945 11 25 new york president
-11.9945 11 35 new york president
-11.9945 11 50 new york president
-11.9945 11 april 1996 charg äôaffaires

Most informative for soft action

-5.1121 kingdom great britain northern ireland
-5.1141 united kingdom great britain northern
-5.6974 great britain northern ireland united
-5.8568 northern ireland united states americ

-5.8568 britain northern ireland united states
-6.0258 sent signature member delegation concerned
-6.0284 security council corrections submitted origin

-6.0284 records security council corrections
-6.0309 text printed official records securit

-6.0309 printed official records security council
-6.0309 official records security council corrections
-6.0309 languages final text printed official
-6.0309 final text printed official records
-6.0439 record sent signature member delegati

-6.0439 incorporated copy record sent signature
-6.0439 copy record sent signature member
-6.0465 speeches delivered languages final text
-6.0465 delivered languages final text printed
-6.0623 security council concluded present stage
-6.0676 present stage consideration item agenda

All of this text is in every record... this list doesn't really tell us much...

Naïve Bayes & NLTK: Outcomes

- Accuracy: 58%

Most Informative Features

Ivoire = True	interv : soft_a =	18.8 : 1.0
sustaining = True	interv : soft_a =	13.1 : 1.0
immunities = True	interv : soft_a =	10.1 : 1.0
eligible = True	interv : soft_a =	6.6 : 1.0
arbitral = True	interv : soft_a =	5.2 : 1.0
electricity = True	interv : soft_a =	4.5 : 1.0
intensification = True	soft_a : interv =	4.4 : 1.0
postpone = True	interv : soft_a =	3.7 : 1.0
granting = True	interv : soft_a =	3.1 : 1.0
designing = True	soft_a : interv =	2.4 : 1.0
regional = True	interv : soft_a =	2.1 : 1.0
968 = True	soft_a : interv =	2.1 : 1.0
Western = True	soft_a : interv =	2.1 : 1.0
sécurité = True	interv : soft_a =	2.1 : 1.0
279 = True	interv : soft_a =	2.1 : 1.0
UNODC = True	interv : soft_a =	1.7 : 1.0
aegis = True	soft_a : interv =	1.7 : 1.0
regional = False	soft_a : interv =	1.4 : 1.0
second = True	interv : soft_a =	1.4 : 1.0
four = True	interv : soft_a =	1.4 : 1.0

Naïve Bayes & NLTK: Inputs

- Accuracy: 87%

Most Informative Features

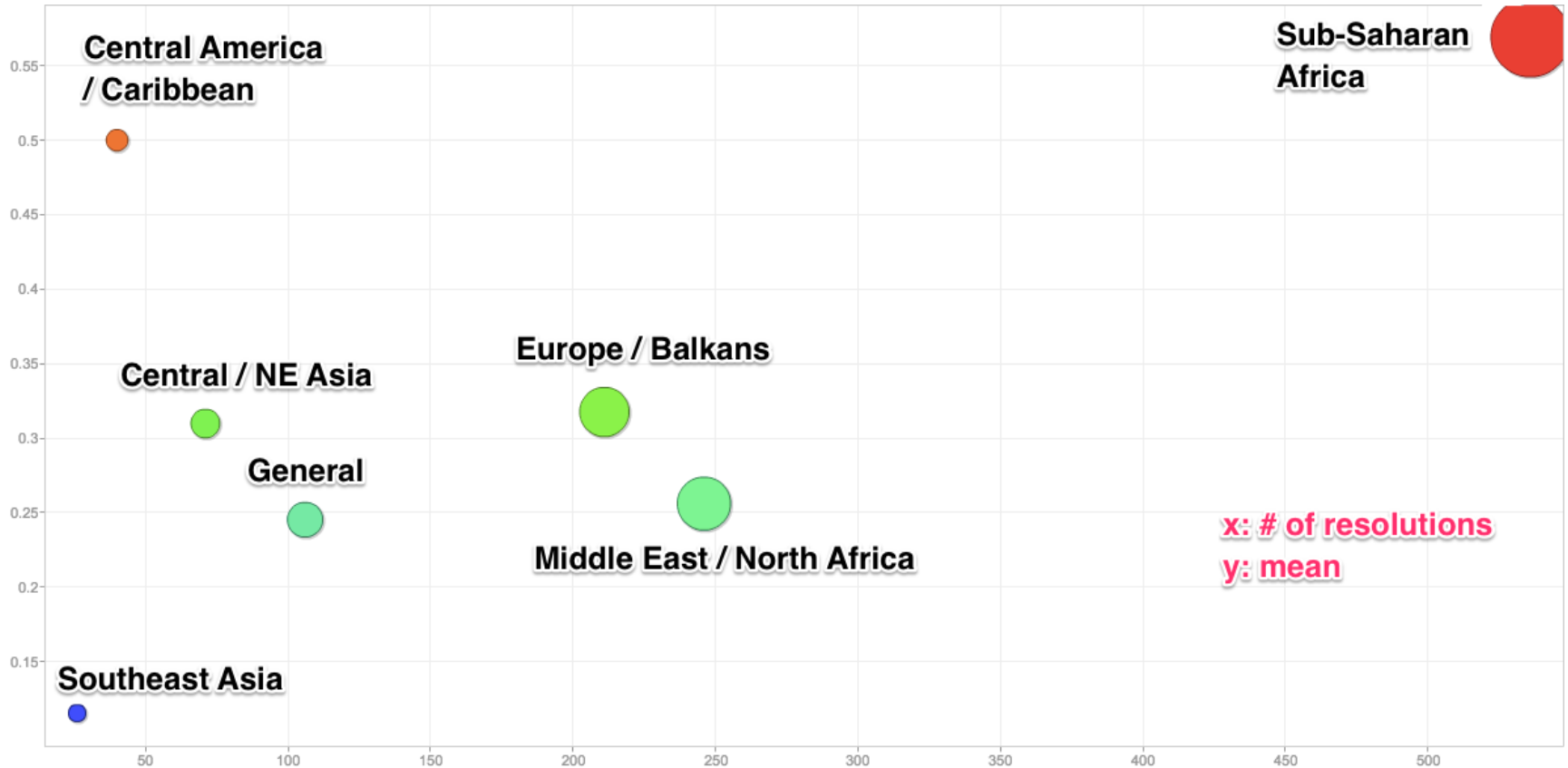
immunities = True	interv : soft_a =	4.4 : 1.0
designing = True	soft_a : interv =	4.2 : 1.0
Western = True	soft_a : interv =	3.5 : 1.0
Croat = True	interv : soft_a =	3.2 : 1.0
Larsen = True	soft_a : interv =	3.1 : 1.0
273 = True	interv : soft_a =	2.8 : 1.0
affiliated = True	interv : soft_a =	2.5 : 1.0
hanging = True	soft_a : interv =	2.5 : 1.0
localized = True	soft_a : interv =	2.5 : 1.0
distortions = True	soft_a : interv =	2.5 : 1.0
sustaining = True	soft_a : interv =	2.2 : 1.0
Initially = True	interv : soft_a =	2.0 : 1.0
Pronk = True	interv : soft_a =	2.0 : 1.0
shocks = True	interv : soft_a =	2.0 : 1.0
regularize = True	interv : soft_a =	2.0 : 1.0
steadfastness = True	soft_a : interv =	1.9 : 1.0
UNITA = True	soft_a : interv =	1.9 : 1.0
ÄGWith = True	interv : soft_a =	1.7 : 1.0
rebel = True	interv : soft_a =	1.6 : 1.0
succumb = True	soft_a : interv =	1.5 : 1.0
feasibility = True	interv : soft_a =	1.5 : 1.0
Valle = True	soft_a : interv =	1.4 : 1.0
controversy = True	soft_a : interv =	1.4 : 1.0
reasserting = True	soft_a : interv =	1.4 : 1.0
278 = True	soft_a : interv =	1.4 : 1.0
woods = True	soft_a : interv =	1.4 : 1.0
Karadzic = True	interv : soft_a =	1.4 : 1.0
replaced = True	soft_a : interv =	1.3 : 1.0
viable = True	soft_a : interv =	1.3 : 1.0
insecurity = True	soft_a : interv =	1.3 : 1.0
bringing = True	soft_a : interv =	1.2 : 1.0
mutinies = True	interv : soft_a =	1.2 : 1.0
climbed = True	interv : soft_a =	1.2 : 1.0
275 = True	interv : soft_a =	1.2 : 1.0
errors = True	interv : soft_a =	1.2 : 1.0
Erdut = True	interv : soft_a =	1.2 : 1.0
wracked = True	interv : soft_a =	1.2 : 1.0
deferred = True	interv : soft_a =	1.2 : 1.0
Foundation = True	interv : soft_a =	1.2 : 1.0
271 = True	interv : soft_a =	1.2 : 1.0
stipulate = True	interv : soft_a =	1.2 : 1.0
Euro = True	interv : soft_a =	1.2 : 1.0
golden = True	soft_a : interv =	1.2 : 1.0
Western = False	interv : soft_a =	1.1 : 1.0
therefore = True	interv : soft_a =	1.1 : 1.0
stern = True	soft_a : interv =	1.1 : 1.0

Pandas

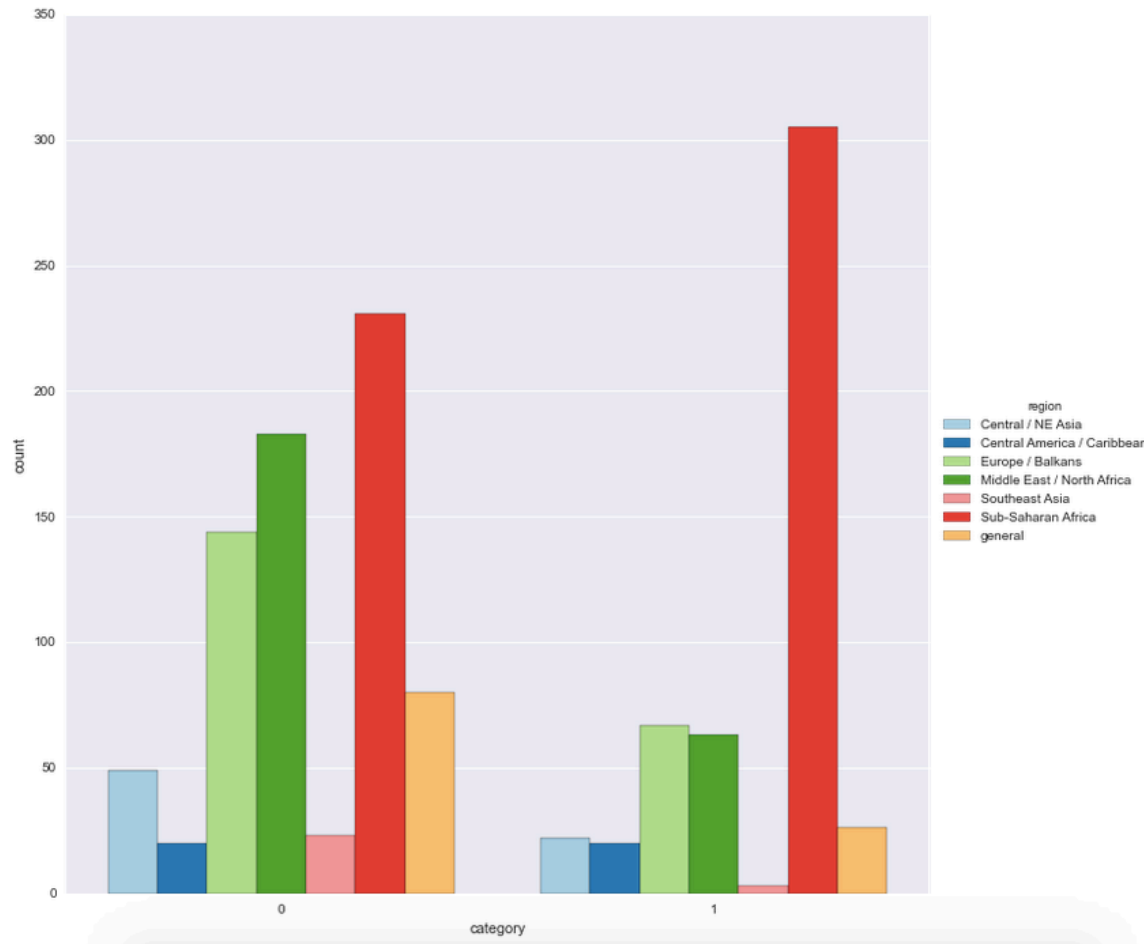
- Overall mean: 0.4
- Regional data:

	# of resolutions	mean
Region		
Sub-Saharan Africa	536	0.569030
Central America / Caribbean	40	0.500000
Europe / Balkans	211	0.317536
Central / NE Asia	71	0.309859
Middle East / North Africa	246	0.256098
general	106	0.245283
Southeast Asia	26	0.115385

Pandas data in Google Motion Chart



Pandas / Seaborn



Top 30 by resolution count

Just because the SC is talking about you doesn't mean it will intervene...

- High intervention mean in DR Congo
- No intervention In Western Sahara

topic	count	mean
Democratic Republic of the Congo	62	0.790323
Western Sahara	56	0.000000
Liberia	51	0.705882
Somalia	47	0.893617
Cote d'Ivoire	47	0.936170
Angola	46	0.347826
Iraq-Kuwait	44	0.931818
Cyprus	42	0.000000
Sierra Leone	39	0.384615
Afghanistan	39	0.487179
Bosnia and Herzegovina	39	0.641026
Georgia	36	0.000000
Haiti	35	0.571429
Sudan	34	0.558824
Middle East situation	31	0.096774
Eritrea-Ethiopia	28	0.071429
International Tribunal Yugoslavia	28	0.500000
International Tribunal Rwanda	27	0.481481
Timor-Leste	25	0.120000
Croatia	24	0.250000
Middle East UNIFIL	23	0.000000
Peace and security terrorist acts	22	0.454545
Rwanda	20	0.350000
Burundi	20	0.300000
Middle East UNDOF	20	0.000000
Iraq	16	0.375000
Tajikistan	13	0.000000
Central African Republic	12	0.500000
The former Yugoslav Republic of Macedonia	10	0.000000
Middle East situation, including the Palestinian question	10	0.000000

Top 30 by resolution count (Google Charts)

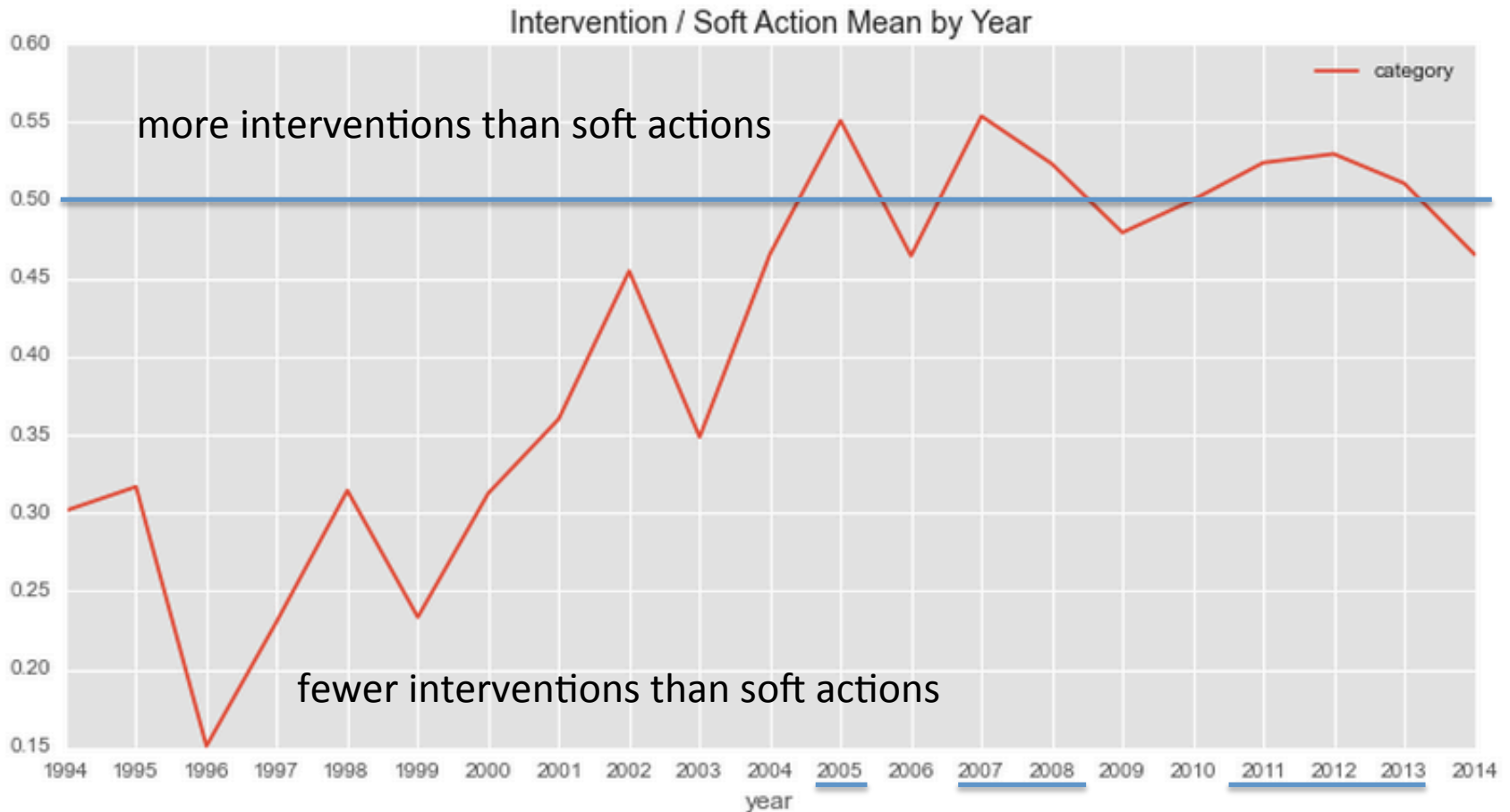
Top 30 by mean

- Highest intervention mean of all in Cote d'Ivoire, which receives very little coverage
- Much lower mean in Rwanda, Middle East - constantly in the news

topic	count	Mean
Cote d'Ivoire	47	0.936170
Iraq-Kuwait	44	0.931818
Somalia	47	0.893617
Democratic Republic of the Congo	62	0.790323
Liberia	51	0.705882
Bosnia and Herzegovina	39	0.641026
Haiti	35	0.571429
Sudan	34	0.558824
Central African Republic	12	0.500000
International Tribunal Yugoslavia	28	0.500000
Afghanistan	39	0.487179
International Tribunal Rwanda	27	0.481481
Peace and security terrorist acts	22	0.454545
Sierra Leone	39	0.384615
Iraq	16	0.375000
Rwanda	20	0.350000
Angola	46	0.347826
Burundi	20	0.300000
Croatia	24	0.250000
Timor-Leste	25	0.120000
Middle East situation	31	0.096774
Eritrea-Ethiopia	28	0.071429
Middle East UNIFIL	23	0.000000
Western Sahara	56	0.000000
Middle East UNDOF	20	0.000000
Georgia	36	0.000000
Tajikistan	13	0.000000
Cyprus	42	0.000000
The former Yugoslav Republic of Macedonia	10	0.000000
Middle East situation, including the Palestinian question	10	0.000000

Top 30 by mean (Google Charts)

Time series / Seaborn



- Counters hypothesis of “intervention fatigue”

Conclusions

- Interesting experiment in the application of NLP and other methods to IR
- Not a lot of *useful predictive power*
- Decision-making in the Security Council is opaque, fundamentally unquantifiable
- Unique sets of considerations and constraints that also change over time
- Not like a regulator that will probably fine or shut down a business if it receives too many complaints
- **Possible expansions:** adding (subjective) evaluations of whether there was a strong or weak position in favor of intervention on the part of a P5 state