



Language and climate action – conceptions and expressions of responsibility and obligation

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EnergyLab/DIGSSCORE meeting





Introduction

- Research domain of the **LINGCLIM group**:
The complex and many-faceted societal challenge of climate change and the transition to a low carbon society – its **representations** and **interpretations** through language



What is said, by whom to whom, in what contexts?

- Linguistic and discursive approaches:
Analyses of a series of scientific, political, and media text (conventional news media, social media) providing overviews of opinions about and interests in the climate issue by different actors in different contexts
- Enriching cross-disciplinary collaboration through combinations with data from surveys and experiments at NCP/DIGSSCORE, providing knowledge about what the general public think



Challenge: citizens' interpretations

- Point of departure:
Tackling climate change requires both political measures and individual action
- How do the public – citizens – interpret and relate to the questions at stake?
- How do they express their associations, attitudes and responses through language?



Methodological option

- **Open-ended survey questions** (Stoneman et al. 2013), where respondents can freely formulate their opinions and attitude, providing answers with richer and more nuanced data than with closed-ended questions
- **Methodological challenge:** analysis of large and heterogeneous textual data (data sets up to 100,000 words); “impossible” to handle manually
- **Structural Topic Modelling** (STM; Roberts et al. 2014), which induces distinct topics based on the relative frequencies of the words used in the answers to the open question





Open question on «solutions»

- Open-ended question:
“Concerning climate change, what do you think should be done?”
- Data from NCP waves 4 and 5, 2015:
4,634 answers; total of 93,952 words;
longest answer: 146 words; average: 21.5 words; median 14 words.
- Tvinnereim, E., Fløttum K., Gjerstad, Ø., Johannesson, M.P., Nordø, Å. D. 2017.
Citizens' preferences for tackling climate change. Quantitative and qualitative analyses of their freely formulated solutions.
Global Environmental Change, 46, 34-41.
doi.org/10.1016/j.gloenvcha.2017.06.005
- Fløttum, K. 2017. Willingness of action. In: Fløttum, K. (Ed.) *The role of language in the climate change debate*. New York/London: Routledge, 113-129.



Results

- Topic proportion:

(1) Transportation	0.185
(2) Energy transition	0.164
(3) Attribution	0.158
(4) Emission reduction	0.141
(5) International collaboration	0.131
(6) Lifestyle/consumption	0.126
(7) Government measures	0.096

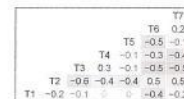


N Topics: 7
Run: 4

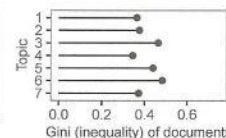
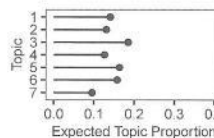
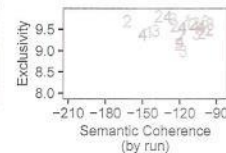


Topic	1	2	3	4	5	6	7
1	redus, utslipp, forbruk, industri, begrens, minsk, flytrafikk, hav, reduksjon, gass, ge						
2	land, hjelp, enkelt, ansv, kin, virk, usa, prøv, samarbeid, monn, informasjon, vikt, ar						
3	kollektiv, bedr, transport, trafikk, fly, tog, billiger, byen, buss, offentlig, byer, tilbud, koll						
4	mindr, mat, kjøp, kast, produsert, gjennbruk, klidesortering, kjøtt, søppel, spis, resirk						
5	energi, fornyb, forsk, olj, alternativ, kild, utvikl, fossil, fossilt, kull, bevar, vindkraft, bi						
6	klimaendring, miljø, natur, mennesk, alt, hal, komm, tror, men, jord, tid, klima, men						
7	mest, økonomisk, skap, vekst, for, samtid, minst, langsikt, fatt, samfunn, stærker, hc						

Frex



Correlation between topics (pairwise pearson)



Topic 1: redus, utslipp, forbruk

- 1: Reduksjon av utslipp i transportnæringen. Redus utslipp i luften fra produksjon. Avgiftsbelegget utslipp.
- 2: Redusere skadelige utslipp, både gjennom annerledes/reduert forbruk og gjennom tek forbedringer.
- 3: Redusere skadelige utslipp avgasser. Ha en innstilling til skadelig utslipp.
- 4: Redusere utslipp av klimagasser. F.eks redus:
- 5: Begrense utslipp av miljøgifter og forurensen både i hav og luft.
- 6: Redusere utslipp av privatbilisme. Øke arbeid redusere utslipp av klimagasser
- 7: redusere utslipp av skadelige klimagasser se energieffektivt - rehabiliter energieffektivt -

Topic 2: land, hjelp, enkelt

- 1: Norge er så lite, de store miljøsynderene ser andre land bør sette i verk tiltak straks. Norge bidra ved å spre kunnskap og informasjon.
- 2: Informasjon, bevisstgjøring i skoler, lag, foret voksen opplæring Komme med konkrete for enkelt kan gjøre hjemme, som for eksempel informasjonsblad om søppelsorter(,...)
- 3: *) Vi trenger en internasjonal forpliktende avt de fleste land er med. Vi må være pragmatis enkelte land reserverer seg, så lenge disse representerer noen stor (...)
- 4: De land som har størst utslipp og flest menn for de største klimakuttene. Norge som land lite i forhold til land som USA, Kina osv.
- 5: Global avtale hvor USA, Russland og Kina e

Topic 3: kollektiv, bedr, transport

- 1: Forbedre kollektiv tilbudet, dvs. senke prisen kollektivtrafikken (flere trikker, busser, øke ant avganger, etc.).
- 2: Biltrafikk, varetransport med trailere, flere per husstand, må bli lavere. Tog og bybane opp.
- 3: Gratis kollektivtrafikk i de største byene. Tilretteparkering i utkant og utbygge kollektiv transp
- 4: Bedre kollektiv tilbud. Billigere billetter Bilfrie dager/ bilfrie soner
- 5: Mer utbygging av kollektivtrafikk, dobbeltspore linjer inn/ut av Oslo. Store innfartsparkerings kombinert med buss-like hyppige avganger Oslo
- 6: Tilrettelegge for flere og bedre innfartsparker

Topic 4: mindr, mat, kjøp

- 1: mindre bilkjøring mindre lange flyreiser ferie økologisk mat.
- 2: Det må bli slutt på all plastemballasje som ikke gjennvinnes. Mindre bruk av sprøytemidler i og mer støtte til de som vil dyrke økologisk.
- 3: Vi bør blant annet gjenvinne enda mer. Spise og mer grønt. Velge lokalt og økologisk prod varer. Vi bør også bruke mer kollektiv transport heller investere i hybrid(...)
- 4: Alle må hjelpe til å ikke kjøpe så mye unødve Prøve å være flink å kjøpe brukte ting og tang. bruk av elektronisk og maskin, Reis med buss jobb eller sykle (...)
- 5: Klidesorteringssystemet Andre energiformer Energiekonomisering Lage mat fra bunnet, i

Topic 5: energi, fornyb, forsk

- 1: Stoppe utvinninga av olje, investere i forskning av miljøvennlig teknologi, gå over til fornybare energikilder, etc.
- 2: Satsing på miljøvennlig energi. Skog/regnskog vern e beplantning.
- 3: Fullføre og tømme påbegynte oljefelt. Benytt teknologi til klimavennlige prosjekter. Avvikle ulønnsomme prosjekter som skifter olje. Ben bistandspenger til å fase ut kull
- 4: Gradvis erstating av fossile energikilder til fi energikilder.
- 5: Økt forskning på fornybare ressurser. Kutt til: utvinning av fossile ressurser.
- 6: Teknologisk utvikling spesielt innen elektrifis

Topic 6: klimaendring, miljø, natur

- 1: Klimatiske endringer har skjedd på jordklode tider. Varme tider og kalde tider kommer og Ekspertene preker den ene trusselen etter de ingen ting er helt visst. D(...)
- 2: Jeg mener vi har tatt av når det gjelder klima Klimaet har endret seg hele tiden gjennom j historie som er på mange millioner av år. De naturlig at klimaet endrer(...)
- 3: Her er jeg nok utenfor den godtatte mening. overbevist om at klimaendring er menneske debatter blandes ofte klima og miljø samme dette kan falle sammen på vi(...)
- 4: Alle åra eg har levd og husker har vært forsk det gjelder vær fra 6 tallet og frem til nå , så nok det meste er slik som det alltid har vært

Topic 7: mest, økonomisk, skap

- 1: Man vil ikke få aktører til å velge klimavennlig alternativer med mindre det også er fornuftig Det er derfor nødvendig med politiske virken gjør klimavennlige løsninger(...)
- 2: Presset ift å gå fra diskusjoner og resolusjon konkret handling må intensiveres i alle aktue nasjonale, regionale og internasjonale fora. må det arbeides kontin(...)
- 3: Følge opp Grunnlovens §112 i praksis - dvs. bevisbyrden slik at det skal velges bærekraft løsninger dersom ikke noe spesielt tilsier at skal velges, ikke slik som nå hvo(...)
- 4: Endre statlig politikk så fort som mulig slik at økonomiske virkemidler taes i bruk for å gjøre tydelig lønnsomt for private og bedrifter å sa



Answer forms +/- engagement

1) Rejection of the question or not answering it

- *Nothing*
- *There has always been climate change on our planet, warm periods and cold periods are coming and going. Experts are preaching about one threat, after the other, but nothing is certain. [...]. (Topic 3)*

2) Enumeration of several measures, sentence fragments

- *Free public transportation in large cities. Facilitate parking on the outskirts and develop public transportation. (Topic 1)*

3) Long “stories”

- *Agreements with countries which are the biggest polluters **should be concluded**, such as China, Russia and the US, in order to lower the limits of emissions. Norway is also a polluter, but to a small extent in a global perspective. **Norway has a responsibility** concerning the amount of extracted oil in addition to other oil extracting countries. (Topic 5)*



From the STM topic analysis to a linguistically based qualitative analysis

- of different important questions concerning relations between actors and arguments, attitudes related to various issues, evaluations, and the argumentation and multivoicedness often characterising longer answers.

Here limited to expressions of **obligation and responsibility**.



Obligation

- Expressions of what people think should be done
- Focus on a selection of modal auxiliaries as clear carriers of deontic meaning, typically expressing some obligation or directive in the form of calls, requests or commands for action.

Four forms of Norwegian modal auxiliaries:

bør (591), *burde* (100), *skal* (185), *må* (1,076) -> :

English «corresponding» verbs:

should, shall, must

Here: analyses of answers with *bør* (*should*)

Beyond «We should all contribute»



- Immediate surroundings of *bør/should* – some examples
 - ta* (*take* ~ *responsibility*): 36;
 - gjøre* (*do* ~ *what we can*): 34;
 - satse på* (*go for* ~ *renewable energy + public transport*): 31;
 - redusere* (*reduce* ~ *emissions and (air) traffic*): 25;
 - bli* (*become* ~ *better / more conscious - consumption*): 25;
 - bruke* (*use* / ~ *spend money on research*): 16;
 - forby* (*prohibit* ~ *fossil fuel*): 9;
 - begrense* (*limit* ~ *various*): 8;
 - hjelpe* (*help* ~ *other countries*): 8;
 - sette* (*put* ~ *money and/or efforts into various measures*): 8;
 - innføre* (*introduce* ~ *restrictions and taxes*): 6;
 - kutte* (*cut* ~ *emissions*): 6



Summing up on «obligation»

- A large heterogeneity of actions, measures and instruments are suggested and recommended
- The topics uncovered by the STM analysis are clearly manifested in the freely formulated answers
- Norwegian citizens have quite clear-cut views on what could/should be done about climate change.
- However, by whom should the proposed measures be undertaken? Whose responsibilities?



Responsibilities

- Are actors explicitly “appointed”?
- A large part of *bør*-constructions are in a passive form:
*Air traffic / factory emissions / GHG emissions /
meat production / energy consumption ...
should be reduced.*
- Why?
- Difficult to decide who are/should be responsible for undertaking the proposed actions?
- Complex measures that require a mix of different collaborating actors (political/individual, national/international)

For a broader picture of the presence of explicit actors:
a frequency analysis of pronouns and noun phrases:

jeg/eg (I) (310);

vi (we) (981);

alle (all) (442);

staten (the state) (73);

myndigheter/-ene ((the) authorities) (37);

politikere/-erne ((the)politicians) (74).

- ***jeg*** is mostly related to opinion verbs
– *mene (think)*, *synes (think, find)*, *tro (believe)*:
In Norway I think more efforts should be put into public transport.

- WE/VI-actors (981)

Collective, undefined voice, difficult to determine:

WE - the Norwegians, *WE*- the people on this planet,

WE - the non experts, ...?

With *can* (*kan*), in the sense of ‘ability’:

“All of us should think a bit more about what we can do in terms of “small things” in our everyday life which can help the environment.”

Or with points of view expressing helplessness or resignation, and passivity:

“There is little we can do, [...]”

- *ALL/ALLE* – *actors* (442)
- Trace of collective “responsibility”, often co-occurring with deontic auxiliaries, typically combined with the verb *contribute* in a non-committed way:
 - “All should/must contribute.”
 - “All should/must take responsibility.”
- Some more specific, varying from the near actions “here and now” to the larger, more complex actions:
 - “All should contribute to less garbage and more recycling.”
 - “All must reduce emissions.”



- *ALL COUNTRIES/ALLE LAND* (with both *should* and *must*)

”All countries must commit to reducing their emissions.”

versus

”All countries should contribute. But [I] deeply disagree that Norway should take the lead and be a pioneer, we are so small [compared to the great powers].”

- Related to the issue of equity, pointing at different responsibilities for rich and poor countries:

”[...] All countries must take their part of the responsibility, but developed [industrial] countries a larger part of the responsibility than developing countries – for example by helping them to finance climate friendly measures.”



ACTORS BEYOND THEMSELVES

- *the authorities* (37 occurrences), *the state* (73), *the politicians* (83)
 - "The authorities must take the lead and facilitate for necessary efforts and necessary measures."
 - "The authorities must be tougher and require more, set stricter requirements."
 - "The politicians must be willing to adopt unpopular measures."

→ These answers indicate a critique of the commitment of authorities and politicians, as well as lack of and wish for clear decision-making.

Final remarks



- Except for the 15% that refute the question, the respondents are clear about that something should be done to tackle climate change.
- They seem to have much knowledge about various measures, but divergent and somewhat unclear views on responsibilities.
- Generally, they claim that something must be done, and that all should contribute and take responsibility.
- However, many of the survey's respondents do not provide further specifications and thus express only a vague willingness.



- The citizens' answers suggest a willingness to accept stronger mitigation action (quasi-absence of adaptation), but claim that authorities and politicians at both local and national level should facilitate “green” choices (and contribute to bridging policy and individual action).
- The study has provided new knowledge on constraints on and opportunities for climate action, which are fundamental to decision-making.
- A need for more work on clarifying what individuals can/will do in their everyday life, and on distributing responsibilities; a better alignment between decision-makers and citizens.



A final message

- *“**It is not possible** to make actors choose climate friendly alternatives **unless** it also makes sense economically. That is why **it is necessary** to implement political tools that make climate friendly solutions economically friendly solutions. The costs of environmental costs **should be placed** with those who cause them, i.e. taxes etc.”*



Feriereiser med fly gir vi ikke slipp på

Kjersti Fløttum

Bergens Tidende, 21. aug. 2017

https://www.bt.no/btmeneringer/debatt/i/GVob6/Feriereiser-med-fly-gir-vi-ikke-slipp-pa?spid_rel=2

FOTO: Jan M. Lillebø

Thank you!



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