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Introduction

1 On April 17, 2019, the Governor of Bank of England Mark Carney together with the Governor of Banque de France François Villeroy de Galhau, and Chair of the Network for Greening the Financial Services Frank Elderson published an open letter where they called the private sector to action against the escalating and devastating effects of climate change. In their letter they concluded that "If some companies and industries fail to adjust to this new world, they will fail to exist."[1]

2 The open letter mirrors a new framing, or conceptualisation, of climate change as an existential threat to businesses. Climate change as an existential threat to businesses is at the core of the concept of *climate risk*, which comprises the physical effects of climate change, as well as risks and opportunities related to the transition to a low-carbon economy (TCFD 2017: 62).[2] In the last few years, the focus on financial climate risk has been ever increasing, as the need to consider the risks and opportunities arising from climate change has been gradually recognised. This has resulted in a mobilisation of the financial sector, stimulated by dedicated think tanks, and a reconceptualisation of climate change risk as a *financial* risk (Baron et al., 2017: 146). Previous research has argued that this is a process where "[...] climate change has been manufactured into a concrete and specific business risk for companies and [...] this new risk allows new governance techniques to be applied." (Pattberg, 2012: 614). The need to address climate risk is now also recognised at an international level, and countries are taking steps to address it. An example of this is the French Energy Transition Law, Article 173

which states that listed companies are required to disclose financial risks related to the effects of climate change. As a result, as we will argue in this article, the concept of climate risk points to a new way of framing the issue of climate change among industry actors. In a wider perspective, the articulation of climate issues in market and monetary terms, what we term "the financial turn of climate change communication", may also have important implications for the societal framing of the climate change issue (Nyberg & Wright, 2016).

3 Since the concept of climate risk is currently under intense scrutiny both nationally and internationally, there is a high degree of discursive production (Bres & Nowakowska, 2005) across national and international contexts, and across the public and the private sector. The high degree of discursive production, and the fact that climate risk is still to some extent an emergent topic, is also reflected by lexical dynamism (Kristiansen & Gjesdal, 2018; Gjesdal & Lyse, 2016) as well as conceptual and terminological instability in the subject field. An instant indication of this may be how the concept of climate risk and associated terminology have spread to general language, as evident in Norwegian newspapers. From only very few yearly news articles on the topic in 2007, one year after the publication of the Stern report, the number has increased to an annual average of 50 per year since 2017 (avis.uib.no/). Consequently, terminological analysis will be used in this article as an intake to the study of the framing of climate change by industry actors. Specifically, the article is situated in *socioterminology*, i.e., we are interested in the discursive and social impact on both the emergence and the reception of terms (Myking, 2000; Gaudin, 2005). Thus, we aim to examine framings of climate change in corporate discourse through the lens of the emergent concept of climate risk and the terminology used.

4 We argue that the changes taking place in the intension of the concept of climate risk may be reflective of changes in the societal perception, or framing, of the phenomenon in question. A recent example of the societal impact of terminology is the fact that the British newspaper *The Guardian* updated its style guide to introduce what they believe to be more accurate terminology to describe the environmental crises facing the world, including changes such as having as their preferred terms "climate crisis" rather than "climate change", or "global heating" instead of "global warming"[3]. This illustrates the crucial contribution of terminology and terminological and lexical variation to the framing of societal phenomena (Jaworska, 2018: 195), and ipso facto that terminological studies may provide an intake to the study of the discursive representation of climate change. Thus, the paper will investigate the emergence of the concept[4] of *climate risk* and the development of climate risk terminology through a qualitative and exploratory study of documents from three text genres; policy reports, think tank reports, and corporate annual reports. While policy reports are known to be an important site for term formation (Roald and Whittaker 2012), due to their specialised focus, corporate annual reports may give us deeper insights into how the concept is being taken up in the corporate world. The study will take international documents as a corpus for initial term extraction, and then analyse the application of the concept and the terminology used in Norwegian documents. Since the Norwegian economy is heavily dependent on the petroleum sector, Norway is particularly exposed to climate risk and there is growing attention to the issue among public and private actors. The analytical focus is on how climate risk reporting shifts the perspective on climate change, from being a

sustainability or environmental issue into an issue of financial risk, thus corresponding to a reframing of climate change.

5 The main hypothesis of our paper is that there has been a shift in the conceptualisation of climate risk, from macroeconomic risks to microeconomic, i.e., from a physical climate risk to a financial climate risk, and that this is reflected in a new terminology and in the risk reporting of private companies, specifically oil major Equinor. In order to examine this financial turn in climate change communication, the paper will investigate the following research question: does the concept of climate risk, as reflected in emergent terms and related concepts, represent a financial framing of climate change issues?

6 The paper is structured as follows: section 1 provides the background for the framing of climate change in corporate discourse and the emergence of the concept of climate risk, section 2 presents materials and methods, section 3 presents the results, and section 4 presents the discussion of the findings.

1. Background

1.1. Corporate discourses and the framing of climate change

7 The present article focuses on the representation of climate change in corporate discourse and argues that climate risk represents a new way of framing this issue in the business sector. Framing, i.e. "[...] selecting certain aspects of a given issue and making them more salient in communication in order to "frame" the issue in a specific way [...] (Schäfer & O'Neill, 2017: 1) is a concept taken from communication studies and is widely applied in studies of climate change communication.

8 In climate change communication, framing analysis has been used primarily for media analysis, and to some extent for the study of stakeholders, in particular non-profit organisations (NGOs), however, not excluding industry actors (ibid.). Schlichting's (2013) meta-analysis of studies of the framing in industry actors' communication on climate issues is particularly relevant for our study, due to the solid empirical basis for her frame typology. Schlichting distinguishes between three main framings in the period of 1999 to 2010, i.e., i) which she names "Scientific uncertainty" (early to mid-1990s) where businesses questioned climate science, ii) "Socioeconomic consequences" (around Kyoto negotiations in 1997 to early 2000s), where businesses acknowledged climate change, but argued against the economic burden of the measures against it; and iii) "Industrial leadership" (started around Kyoto negotiations, dominant since mid-2000s) where businesses underlined their positive contribution to tackling climate change, especially through technological solutions (Schlichting, 2013: 498). According to Schlichting, the third framing, which is dominant today, is characterised by the fact that corporations acknowledge that they too are responsible for protecting the climate, but that they try to shift the focus to technical innovations they may supply as the most important tools to further a climate-friendly, low-carbon society (ibid: 502). This frame also integrates the notion of risk, something which is also stressed in studies on how energy majors communicate on climate issues as part of their business strategy (Jaworska 2018, Dahl & Fløttum, 2019). Painter (2015: 286) also shows that the risk perspective has become more prevalent in the dissemination of scientific findings on climate change since the IPCC Fifth Assessment Report

(2014-2015), suggesting that a risk-oriented framing of climate change is emerging more generally. The present study argues that the emergence of the concept of *climate risk* and associated terminology is symptomatic of this framing, and that it also may be compatible with the industrial leadership frame in Schlichting's typology.

1.2. The concept of climate risk

9 The concept of *climate risk* is influenced by ongoing changes in the political and societal focus on climate change and the challenges that are involved. This includes a shift from a focus on climate mitigation (i.e. reducing or preventing emissions) to climate adaptation measures (i.e. adapting to the effects of climate change), as well as a broadened scope of the risk concept, from typically being defined as uncertainties resulting from climate change that affect natural and human systems and regions, to risks resulting from *not* adapting to these changes, and more recently, to risks related to future demands from regulators and stakeholders. The recent publication of several policy reports as well as the formation of institutional and governmental initiatives illustrate this.

10 The issue of climate risk was introduced to the wider public sphere[5] by the governor of the Bank of England, Mark Carney, in a speech on 29 September 2015 at the global insurance market, Lloyd's of London.[6] This speech shifted the focus from what had so far been seen as mostly *macroeconomic* challenges, receiving the attention of political and policy debates as well as society at large, to a focus on the challenges facing the financial markets in particular but also the financial situation of corporations on a *microeconomic* level. Thus, there is a greater focus on corporations than what had been seen previously, and issues belonging to the domain of *finance* became more topical.

11 In line with Carney's speech on the risks emerging from climate change, climate change as a risk for businesses is frequently described in relation to three risk areas: i) *physical risk*, i.e., the risk of costs due to physical damage from climate change; ii) *transfer* or *transition risk*, which includes financial risk related to the transition to a low-carbon economy iii) *liability risk*, which is the risk of claims due to decisions or lack of such that may be linked to climate policies or climate changes.[7]

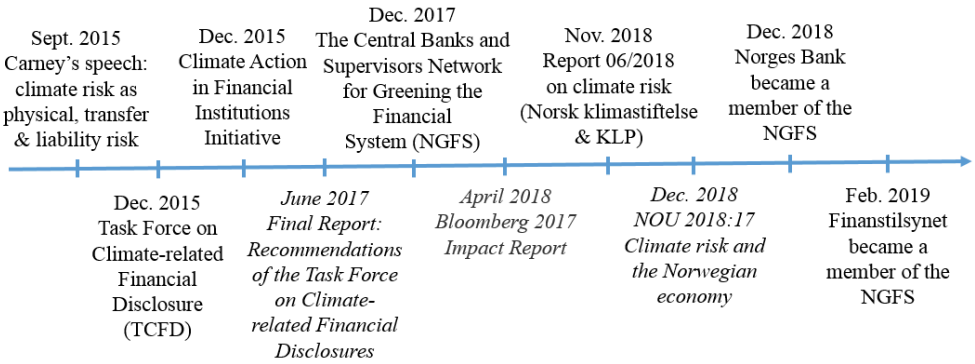
12 Since Carney introduced the three risk areas (physical, transition and liability), the concept of climate risk has been heavily debated globally, both at a macroeconomic level and a micro, or corporate level. According to Report no. 07/2018[8] by Norsk klimastiftelse, a Norwegian think tank on climate issues, as many as 93 per cent of Norwegian listed companies experience more demands from investors and other stakeholders to report on climate risk, including its financial aspects. This illustrates that there is an inherent dynamic in the domain of risk assessment which is likely to be reflected in the annual reports of large companies, such as oil major Equinor. The concept of climate risk is therefore also still inherently dynamic.

13 Large companies are by law required to report on their prospective risks. The recognition of risks associated with climate change by the private sector (Schlichting, 2013) has resulted in a broadened scope of climate-related risks, including new concepts and terminology, in the companies' official reports. Thus, in line with public efforts, large companies must address these questions, both to avoid and manage incidents, and to mitigate financial risk. Thus, climate risk reporting is likely to increase at corporate levels. In France such reporting is already mandatory for listed

companies under Article 173 of the French Energy Transition Law, which came into force on 1 January 2016.

14 The emergence of the concept of climate risk has also been accompanied by the emergence of several international organisational initiatives, as illustrated in Figure 1.

Figure 1: A timeline of recent initiatives and central documents on climate risk



15 These organisational initiatives have resulted in a high degree of discursive production, and the publication of several reports that will constitute the materials for the analyses in this article, and which will be presented in the following section.

2. Materials and methods

2.1. Materials

16 Due to the emergent nature of the concept of climate risk, it is necessary to investigate specialised corpora, as the term does not yet seem to have been taken widely into use in general language. In addition, the terms 'climate risk' and 'klimarisiko' in Norwegian are also to some extent used in the sense of 'physical climate risk' in general language corpora. To analyse the concept of financial climate risk, documents that have been central to the emergence of the concept have therefore been singled out. Thus, the analysis encompasses documents published both internationally and in Norway, and which span over a period of more than ten years.

2.1.1. International documents

17 This includes two global initiatives, i.e. the Stern Review Report on the Economics of Climate Change (Stern report 2006), and the Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD 2017, see Figure 1 in section 2.2). These international initiatives will be used to investigate the framing of climate change and to extract terminology related to climate risk concepts (1-2 in overview below).

2.1.2. Norwegian documents

18 Since 2018, climate risk has received increased attention in Norway as well, one reason being that the country is heavily exposed to this phenomenon. Norway is a major investor through the Government Pension Fund Global, a sovereign wealth fund owned

by the Norwegian government, which manages the revenues from the Norwegian petroleum resources on behalf of the Norwegian state. In addition, the Norwegian state is a shareholder in petroleum businesses such as Equinor ASA, which will also be studied in this article.

19 Norwegian reports, such as the NOU 2018:17 *Climate risk and the Norwegian economy* and Reports 06/2018 and 07/2018 on climate risk, two policy reports issued by the Norwegian think tank *Norsk klimastiftelse,* have followed up on the issue and will be used as materials in the next step of our mapping process (3-5). Third, corporate discourse will be analysed in Equinor's annual reports from the period 2012-2018 (6), something which gives the following list of texts:

1. Stern Review Report on the Economics of Climate Change (2006)[9]
2. Final Report : Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017) (TCFD 2017)[10]
3. NOU 2018 :17 Climate risk and the Norwegian economy[11]
4. Report 06/2018 on climate risk (Norsk klimastiftelse & KLP)[12]
5. Report 07/2018 on climate risk (Norsk klimastiftelse)[13]
6. Equinor/Statoil annual reports (2012-2018), Risk Analysis and Climate Changes sections[14]

2.2 Methods

20 The research question, i.e. does the concept of climate risk, as reflected in emergent terms and related concepts, represent a financial framing of climate change issues, will be investigated by a qualitative analysis based in retrospective terminology (Humbley 2011). The purpose is to describe the concept of *climate risk* and associated terms, and possible changes to both the concept and terms over the time period covered by the materials. Initially, we will compare the international documents to investigate whether the framing has changed in the time period from the publication of the Stern report in 2006 to TCFD in 2017 (texts 1-2).

21 The analysis will be corpus-based and aim at identifying relevant concepts and their denotations. The point of departure will be the concept of *climate risk,* and in the analysis, all instances of expressions including 'risk' or 'risiko' ['risk'] will be extracted from all texts, given the fact that all texts thematically focus on climate risk as such. This also allows us to observe if the concept is productive, i.e. whether there is a variety of term candidates, and to observe possible thematic clusters formed by the term candidates, if any. Next, term candidates in the Norwegian texts will be mapped in order to observe any similarities or differences in the framing. In the final step of the analysis, we investigate the development of the concept of *climate risk* in Equinor's (previously Statoil) annual reports, in order to describe how climate risk is represented as an emerging risk factor in corporate discourse.

3. Results and discussion

3.1. The framing of climate change in international policy reports

22 The Stern report begins by stating that "The scientific evidence is now overwhelming: climate change is a serious global threat, and it demands an urgent global response"

(Stern review 2006: vi). This utterance frames climate change as a global challenge and responsibility, thus the framing may be said to be at a macroeconomic and societal level. A comparison of the terminology used in this report (text 1) with that of TCFD 2017 (text 2) shows a solid similarity in concepts discussed and terms used. However, there is also a significant variation, as the latter includes a discussion of concepts that indicates that a financial turn is emerging in climate change communication, e.g. in the framing of policy, which includes a financial perspective in addition to the overall macroeconomic view found in the Stern report. Thus, the scope of climate change risks applied in TCFD 2017 is wider than that in the Stern report. The very titles of the two texts, "Stern review: The Economics of Climate Change" and "Task Force on Climate-Related Financial Disclosures: Status Report", respectively, indicate obviously that the topics are slightly different. However, they both address the overall issue of climate change and how this issue may or even must be handled. The shift in framing from economics to finance is a shift in climate change communication that has emerged during this 10-year period. The two texts do, however, share a number of central terms which denote climate change relevant concepts, such as 'carbon emission', 'carbon capture', 'carbon storage', 'carbon pricing', 'carbon price', 'carbon market', 'low-carbon economy' and 'lower-carbon global economy' to name some.

23 The financial aspect added to the intension of the climate risk concept applied in TCFD 2017 is evident in expressions such as 'financial policymaker' and 're-pricing of assets', both of which indicate a microeconomic perspective in contrast to the macroeconomic found in the Stern report, such as "policy for global response" and "economics of climate change". The corporate level has thus emerged as more relevant. This is demonstrated in Table 1, which shows some expressions used in texts 1 and 2, respectively, and which denote concepts typically with an economic and financial framing, respectively.

Table 1: The framing of climate change

Framing / conceptualisation	Stern (72,844 w.) Term candidates and frequency	TCFD (30,300 w.) Term candidates and frequency
economics	economics of * (869) * climate change (274) / stabilisation (141) /risk and uncertainty (7) / risk (25) / risk and equity (1) / risk and time (1) / adaptation (1) / mitigation (1) / moving to a low-carbon global economy (1) / stabilisation (1), etc.	no occurences
policy	* policy / policy * (1020) policy responses for mitigation (96) / policy responses for adaptation (46) /climate policy (43) / climate-change policy (39) /climate change policy (37) /mitigation policy (14) development policy (11), adaptation policy (6), etc.	* policy * (21) policy action (5) / policy change (3) / financial policymaker (1) / financial impact of policy changes (1), etc.
governance	governance (17) [denotation used for measures such as policy responses for adaptation]	governance (58) [denotation used for measure to climate-related financial disclosure; corporate governance]
asset	* asset * (42) physical asset (2) / environmental asset (1) / natural asset (1) / asset trajectory (1) / asset threshold (1) / productive asset (1) / liquid asset (1) / carbon asset management (1) / high-carbon asset (1) / lower-carbon asset (1), etc.	* asset * (131) asset manager (32) / asset owner (31) / carbon-related assets (6) / asset impairment (3) / asset value (2) / asset returns (1) / asset valuation (1) / asset write-downs (1) / re-pricing of assets (1), etc.
risk	risk (905) risk of catastrophe (39) /risk management (27) / economics of risk (25) / risk and uncertainty (20) / risk aversion (10) / serious risk (8) / risk assessment (5) / risk mitigation (1)	risk (438) risk management (47) / climate-related risk assessment (3) / risk from climate change (3), etc.
climate risk	no occurences	climate-related risk (200) / climate risk (7)
climate-related financial disclosure	no occurences	climate-related financial disclosure (124) [of which 66 part of footer text in document]

24 It should be noted that text 1 is more than double the size of text 2, i.e. comprising 72,822 and 30,300 words, respectively. Although this is not meant to be a statistical analysis since it is not general language patterns we want to investigate, but rather the

domain content and the way this is expressed by domain experts (see e.g. Ahmad and Rogers 2001 on representativeness), the fact that "climate-related risk" is not mentioned in text 1 whereas it is quite frequent in text 2, and that "governance" is more frequent in text 2 underlines the financial and corporate framing that has emerged when talking about climate change in general and climate risk more specifically.

25 One underlying topic when discussing climate change is the risk associated by the changes. This is evident in the Stern review in that the concept of *climate change* is mentioned 2644 times in the text, together with the concepts of *mitigation* (494 occurrences) and *adaptation* (726 occurrences). The concept of *risk* itself is also a central topic in the Stern review, with 905 different occurrences. In text 2, the TCFD 2017, the concept of risk is also central. However, the framing has shifted to that of *climate related risk* (200 occurrences), a concept that is not discussed in the Stern review. The concept may be defined as

> the potential negative impacts of climate change on an organization. [...] Climate-related risks can also be associated with the transition to a lower-carbon global economy, the most common of which relate to policy and legal actions, technology changes, market responses, and reputational considerations. (TCFD 2017: 62).

26 Thus, although the concept of risk is central in both text 1 and 2, the framing is different. This shift in framing is also evident with the conceptualisation of other topics in the texts, such as *economic* and *policy,* which are typical concepts applied in a macroeconomic setting (text 1) and *climate-related financial disclosure* (text 2).

27 If we return to the Stern report and its focus on the consequences of climate change to society, we see that the expression 'economics of', related to several other expressions, is much used. This includes phrases such as 'the economics of risk', 'the economics of adaptation' and 'the economics of climate change', to mention a few, and all of which are non-existent in TCDF 2017. Instead the latter report discusses the concept of *climate-related financial disclosure*. This concept is not addressed in the Stern report since its focus is on macroeconomic issues, in line with what was the focus globally at that time.

28 The term 'policy' is by far most frequent in the Stern report. Furthermore, it is used in relation to content discussing climate change policy, policy responses for mitigation and adaptation, policy as an economic instrument to reduce emissions, and policy for global responses, etc. Thus, the focus is still on climate change and how and what kind of policies could be established to mitigate or adapt to these. In TCFD 2017, however, 'policy' is used in discussions on financial policymakers, policy actions, the financial impact of policy changes, policy as a climate-related risk and opportunities and similar.

29 A similar use is found in connection with the expression 'governance', which is used in both texts. As stated in Bohensky et al. (2016), effective climate change adaptation requires engagement from everyone, ranging from individuals to global institutions. Traditionally, the focus has been on engaging states and the general public, now private-sector actors are to an ever-increasing extent being called upon, however, to participate in adaptation planning. Blin-Franchomme (2017) notes that the Paris Agreement represents a fundamental break in that it recognises the role of non-state actors in climate change governance, including that of enterprises (see also Kuyper et al., 2017). The Paris agreement also emphasises the role of finance in tackling climate change. In our materials, this is evident in the way the concept of *governance* is applied

in the two texts. The Stern report applies the concept as a response to adapt to climate change, whereas TCFD 2017 discusses the concept as a means to climate-related financial disclosures and even corporate governance.

30 Finally, the concept of *asset* is applied in both texts, and several term candidates are used to denote various asset concepts. In the Stern report 'asset' is used in the most straightforward way to denote various actual resources or values: 'worth assets', 'environmental asset', 'natural asset', 'cattle and land as assets', 'liquid asset', 'physical asset', 'carbon asset management', 'high-carbon asset', 'lower-carbon asset', including also the terms 'asset trajectory', 'asset threshold' and 'productive asset'. In TCFD 2017 the use of the term is, however, somewhat more diversified, including expressions such as 'asset value', 'asset returns', 'moving out of asset classes', 'sudden losses in asset values/asset impairment', 'asset valuation', 'carbon-related assets in the financial sector', 'damage to assets' 'assets and liabilities', 'asset write-downs', 're-pricing of assets', etc.

31 The concepts of *governance* and *asset* thus show a similar framing, and are more prominent in text 2, something which is natural since the concepts are more typically applied in a financial and even business setting. This clearly moves the focus from a global, macroeconomic perspective to a microeconomic and financial approach to climate change.

3.2. The mapping of emerging concepts and terminology in Norwegian

3.2.1. Norwegian policy reports

32 The two reports published by Norsk klimastiftelse (Report 06/2018 and Report 07/2018) are intended for businesses and local government, and largely focus on reporting, assessment and analysis of climate risk, as evidenced by several term candidates related to this subject field. The analysis of emergent concepts and extraction of terminology in the reports, as well as in the NOU report (NOU 2018:17 Climate risk and the Norwegian economy), demonstrates that the texts support the financial framing evident in the international reports by offering several emergent concepts related to that of *climate risk.* The concepts include well-established general risk concepts such as *risk analysis* (*'risikoanalyse'*), *risk management* (*'risikostyring'*) and *risk exposure* (*' risikoeksponering'*); however, many risk concepts are of a more emergent nature, belonging to the subdomain of climate risk. Table 2 outlines a number of term candidates related to climate risk, such as 'klimarelatert søksmålsrisiko' ('climate-related litigation risk'), 'klimarisiko i finansmarkeder' ('climate risk in financial markets'), 'fysisk klimarisiko' (physical climate risk'), 'overgangsrisiko' ('transition risk'), 'markedsrisiko' ('market risk'), 'ansvarsrisiko' ('liability risk') and 'omdømmerisiko ('reputational risk'). The term candidates are listed in alphabetical order.

Table 2: Expressions related to the concept of *climate risk* in Norwegian policy reports

Text	Term candidates
NOU 2018:17 (Text 3)	direkte fysisk risiko; finansiell risiko; ansvarsrisiko; fysisk klimarisiko; indirekte fysisk risiko; juridisk risiko; klimarelatert finansiell risiko i virksomheter; klimarelatert risikofaktor/ klimlarisikofaktor; klimarelatert søksmålsrisiko; klimarisiko i finansmarkeder; klimarisiko i samfunnsøkonomisk analyse; klimarisiko i økonomiske modeller; klimarisiko/klimarelatert risiko; klimarisikoeksponering; klimarisikohåndtering/håndtering av klimarisiko; klimarisikorapportering; klimarisikoutvalg; klimarisikovurdering; kredittrisiko; markedsrisiko; motpartsrisiko; naturskaderisiko; omdømmerisiko; operasjonell risiko; overgangsrisiko; rettslig risiko; risiko for finansiell ustabilitet; risiko ved økonomisk virksomhet; risikoforsterker; risikoutsatt land; skaderisiko; systematisk klimarisiko; systemrisiko; søksmålsrisiko; sårbarhet for klimarisiko (35 in total)
Report 06/2018 (Text 4)	akutt fysisk risiko; eksponering for klimarisiko; finansiell klimarisiko/finansiell konsekvens av klimaendringer; finansnæringens klimarisiko; fysisk risiko; håndtering av klimarisiko; klimarelatert risiko- og mulighetsfaktor; klimarisiko/klimarelatert risiko; klimarisikoanalyse; klimarisikoeksponering; klimarisikofaktor; klimarisikoinformasjon; klimarisikokartlegging; klimarisiko-rapportering; klimarisikoscenario; klimarisikovurdering; markedsrisiko; oljeprisrisiko; omdømmerisiko; politisk risiko; rapportering om klimarisiko; rapporteringskrav om klimarisiko søksmålsrisiko; teknologirisiko (23 in total)
Report 07/2018 (Text 5)	ansvarsrisiko; bærekraftrisiko; finansiell klimarisiko; fremtidig klimarisiko; fysisk risiko; håndtering av klimarisiko; investeringsrisiko; investors klimarisiko; klimarelatert risiko; klimarisiko; klimarisikorapportering; klimarisikoanalyse; klimarisikoarbeid; klimarisikokartlegging; klimarisikokategori; overgangsrisiko; pris på klimarisiko; rammeverk for rapportering av klimarisiko; risikogjennomgang knyttet til klima; vurdering av klimarisiko; økonomisk risiko (21 in total)

33 The extraction of climate risk terminology in the three reports gives an indication of how term formation reflects the financial framing of climate change, as the terms describe the different aspects of climate risk, as well as techniques of reporting and assessment that are proposed to tackle it. The high number of term candidates indicate that climate risk has emerged to become a central concept in climate change communication. The reports also reflect the orientation of the international documents and provide a linguistic and content-wise recontextualisation of the topic into a Norwegian context.

34 Although all the three reports cover the domain of climate risk, there are not very many shared terms used in the texts. However, some are shared in all three documents: 'fysisk (klima)risiko' ('physical (climate) risk'), 'håndtering av klimarisiko/ klimarisikohåndtering' ('climate risk management'), 'klimarisiko/klimarelatert risiko' ('climate (related) risk', 'klimarelatert finansiell risiko/finansiell klimarisiko' ('climate-related financial risk'), 'rapportering om/av klimarisiko/klimarisikorapportering' ('climate risk reporting'), and 'klimariskovurdering /vurdering av klimarisiko' (climate risk assessment'). In addition, text 3 and 5 share 'ansvarsrisiko' ('liability risk'), text 3 and 4 share 'søksmålsrisiko' ('litigation risk') and text 4 and 5 share the term candidates 'klimarisikokartlegging' ('climate risk planning') and 'klimarisikoanalyse' ('climate risk analysis').

3.2.2. Equinor annual reports

35 This section presents a qualitative analysis of the development of the concept of *climate risk* in Equinor's (previously Statoil) annual reports. While policy reports are geared towards defining a problem area, the purpose of the corporate annual report is to describe a company's situation and challenges, including reporting on its risks. For the purposes of this article, we have investigated the emergence of climate risk in the sections dedicated to Risk analysis and Health safety and the environment. Since both the scope and the structure of these sections evolve over the time period, we focus qualitatively on the evolution of the concept of *climate risk* across the period, rather than carrying out a quantitative analysis of the reports.

36 Bearing this delineation in mind, we observe that over the period 2012-2018, the Equinor annual reports undergo an important change in reporting on risk in general, as well as on climate risk specifically, and there is a considerable increase in the general

attention given to climate change-related issues. This is reflected in an increase and variation in terms related to the concept of *climate risk*.

37 The reports from 2012-2014 largely focus on financial risk related to petroleum prices and reserves as well as exchange rates, in addition to potential risks to humans and the environment caused by accidents, or events, related to the company's activities, as illustrated in example [1]:

> [1] We are determined to learn from incidents and accidents to prevent similar occurrences in the future, and we believe that accidents can be prevented. Hence, we have a strong focus on prevention. However, we recognise the risks associated with our business and are prepared to handle situations that require immediate action to save lives and protect the environment, facilities, equipment and any third parties who may be affected. (2012, p. 10)

38 As of 2015, the topic of climate risk, i.e. the impact of climate change on Statoil's results, is introduced, as demonstrated in example [2]:

> [2] Also, policy and regulatory change due to rising climate change concerns, and the physical effects of climate change, could impact Statoil's business. (2015, p. 11)

39 The introduction of the topic of climate risk is followed up by a strategy involving the management of the company, as well as various tools for assessing and handling this challenge, as illustrated in example [3]. This is consistent with focus on assessment and reporting techniques observed in the policy documents studied in the previous section.

> [3] Both the corporate executive committee and board of directors frequently discuss the business risks and opportunities associated with climate change, including market, regulatory and physical risk factors. Tools such as internal carbon pricing, scenario planning and stress testing of projects against various oil and gas price assumptions, are used. Statoil regularly assesses how the development of technologies and changes in regulations, including the introduction of stringent climate policies, may impact the oil price, the costs of developing new oil and gas assets, and the demand for oil and gas. (2015 p. 15)

40 In the period 2016-2018, the focus on climate risk continues and increases, and in the same period there is an increase both in the general risk reporting across risk areas, as well as in the attention given to climate change. In sum, Statoil's reporting on risk evolves significantly throughout the period. Linguistically, this is also accompanied by an increase in climate risk terminology. In 2017 and 2018, the concept of *climate risk* becomes further delineated, as terms denoting varying aspects of climate risk are introduced and described, as illustrated in this extract from the 2018 Strategic report:

> [4]

Transition to a lower carbon economy risks
A transition to a lower carbon economy could impact Equinor's business.
A transition to a low-carbon energy future entails risks related to policy, legal, regulatory, market and technology changes and reputation.
Risk related to changes in policies, laws and regulations: Equinor expects and is preparing for regulatory changes and policy measures targeted at reducing greenhouse gas emissions. Stricter climate regulations and policies could impact Equinor's financial outlook, whether directly through changes in taxation or other costs to operations and projects, or indirectly through changes in consumer behavior or technology developments. [...]. Other regulatory risks entail litigation risk and potential direct regulations, for example fuel efficiency standards (e.g. in the EU), restrictions on use of e.g. diesel vehicles and requirements to assess the use of power from shore for new offshore developments at the NCS. Climate related policy changes may also reduce access to prospective geographical areas for exploration and production in the future. Disruptive developments may not be ruled out, possibly triggered by severe weather events affecting public perception and policy making.
Market-related risk: A transition to a low carbon economy contributes to uncertainty over future demand and prices for oil and gas [...]. Increased demand for and improved cost-competitiveness of renewable energy, and innovation and technology changes supporting the further development and use of renewable energy and lowcarbon technologies, represent both threats and opportunities for Equinor. The competitiveness of the choices Equinor makes regarding what renewable business opportunities are pursued and invested in is subject to risk and uncertainty.
Reputational impact: Increased concern over climate change could lead to increased expectations to fossil fuel producers, as well as a more negative perception of the oil and gas industry. This could lead to litigation and divestment risk and could have an impact on talent attraction and retention. (2018, p. 79)

41 Over the time period, Statoil also increasingly acknowledges climate change, and commits to the targets set by the Paris agreement. Statoil also demonstrates a more profound commitment to alternative energy, and advocates for technological solutions, in particular carbon capture and storage, consistent with the Industrial leadership frame identified by Schlichting (2013).

42 Statoil's ambition to play the role of an industry leader, is also visible through the articulation of climate change as a business opportunity (see also Dahl & Fløttum 2019), which is reflected terminologically by the "tandem concept" *klimarisiko og -mulighet* ('climate risks and opportunities'), which is introduced in the 2015 report, here illustrated by an extract from the 2018 Strategic report:

> [5] Climate-related risks and opportunities and strategic response to these are discussed requently by the corporate executive committee and board of directors. (2018, p. 90).

43 Thus, the terminological analysis indicates that the risk perspective has been profoundly integrated by Statoil/Equinor but also that climate change has been rearticulated as both a negative business risk and a positive business opportunity, as reflected by the emerging terminology in the annual reports. Also, comparing the findings from the annual reports from the period 2012-2018 with the policy reports analysed in section 4.2.1, that all date from 2018, we see that in this limited material, the business sector is an early adopter of the topic of climate risk.

Discussion and concluding remarks

44 In this article we have analysed the financial framing aspects of climate change through a terminological analysis of the emerging concept of *climate risk*. The analysis has been undertaken for international as well as Norwegian documents that have been crucial in the development of the concept.

45 The results of our analysis point to three important observations. First, the findings are in line with recent research that stresses the increased importance of risk in climate change communication, including the IPCC Fifth Assessment report and dissemination of related scientific findings (Painter 2015), as well as corporate discourse (Jaworska 2018; Dahl & Fløttum, 2019; Kristiansen & Gjesdal, 2018). The case study undertaken in this article supports these previous studies and provides further knowledge about how the risk perspective has been integrated and rearticulated as a business risk by business actors as well as think tanks and policy makers. Specifically, the analysis indicates that

the risk perspective on climate is developing through the rearticulation of climate change from the domain of *macroeconomics*, i.e. the impact on overall economy to that of *microeconomics*, and especially finance, i.e. the impact on individual businesses and investors. This is particularly visible when comparing the international documents. While the Stern report analyses the economic impact of climate change within macroeconomic frames, the TCFD 2017 increasingly articulates risk as also a microeconomic, or financial issue. In addition, the analyses of Statoil/Equinor's annual reports fit with Schlichting's (2013) typology, as the findings are consistent with what she terms the Industry leadership frame, in which technological solutions are emphasised. However, our results indicate the emergence and strengthening of a risk perspective as well as an emphasis on governance techniques and financial mechanisms, which could suggest an evolution of this frame.

46 Second, the rearticulation of the impact of climate change on business, embodied by the emergence of the concept of climate risk and associated terminology, as well as related concepts, points to a reconceptualisation of climate change governance where responsibility is increasingly shifted from the sphere of policy makers, international organisations, and politicians to the private sector, as argued in previous studies (Pattberg, 2012; Blin-Franchomme, 2017). Pattberg also suggests that the emergence of the concept of climate risk allows for the application of new governance techniques, among them carbon disclosure. This is reflected in our materials, notably in the reports produced by Norsk klimastiftelse, and which are intended for a corporate audience. This material has a strong emphasis on analysis and reporting, as reflected in a variety of dedicated terms.

47 **Limitations and future studies**

48 To sum up, the present study indicates that the climate risk perspective has been taken up in both the corporate and policy text genres in our materials. However, some limitations should be noted that may be addressed in future studies.

49 First, our analysis indicates a possibility that while climate risk as a financial risk that climate change poses to businesses is stressed more, the impact on nature, the environment and humans becomes less visible in a financial framing of climate risk. While we have not undertaken a detailed analysis of this hypothesis, it would be interesting to pursue this further, also in view of the findings in Lischinsky's analysis (2015) of the environment as a stakeholder in Swedish CSR (Corporate Social Responsibility) reports. According to Lischinsky, companies report on environmental issues; however, in his materials they are not represented on a par with other stakeholders (ibid.: 555). This points to a more general difficulty in articulating concerns for nature and the environment in corporate discourse, which may potentially be exacerbated by the recent reconceptualisation of climate change as financial risk. This is a question that would merit further study.

50 Second, our study of corporate annual reports only covers a qualitative analysis of relevant sections of the annual reports of Equinor (Statoil). Although it is a major energy company, it would be relevant to analyse also other companies, especially since Equinor was ranked first in a recent assessment of climate performance of the world's largest oil and gas companies (Investor Climate Compass, 2017, cited by Dahl & Fløttum, 2019). Thus, the heavy attention to climate risk in Equinor's reports could be related to their overall performance in this area. Thus, it would be interesting to compare the results of our study with other energy majors. In addition, it would be useful to

complement the terminological analysis undertaken in this study with a more comprehensive discourse analysis, both by expanding the materials analysed quantitatively as well as conducting a more comprehensive qualitative analysis.

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4. In terminology, a *concept* is defined as a mental representation of a referent, whereas a *term* is a linguistic expression that names a concept (Suonuuti, 2008).

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ABSTRACTS

The present article examines the linguistic aspects of climate change through a terminological analysis of the emerging concept of *climate risk.* The overall aim is to investigate emergent terminology and the evolution of the concept through a qualitative analysis of a set of international policy and think tank documents, as well as to provide an analysis of relevant Norwegian documents covering three text genres (policy documents, think tank reports, corporate annual reports). Our findings are in line with recent research that stresses the increased importance of risk in climate change communication. Our study also provides further knowledge about how the concept of climate risk has changed to include a widened risk perspective beyond that of natural disasters, including that of business risk. Next, the focus on the impact of climate change on business points to a reconceptualisation of climate change governance where responsibility is increasingly shifted from the sphere of policy makers, international organisations, and politicians to the private sector. Third, our analysis suggests that while the emergent concept of climate risk emphasises the financial risk that climate change poses to businesses, the impact on nature, the environment and humans is less visible in the texts.

Cet article examine des aspects discursifs du changement climatique à travers une analyse terminologique du concept émergent de *risque climatique*. L'objectif principal est d'analyser la terminologie émergente et l'évolution du concept par une analyse qualitative des documents internationaux qui ont contribué au développement de ce concept, ainsi qu'une analyse des documents norvégiens. Les résultats s'accordent avec des recherches récentes qui indiquent que la perspective de risque a pris une ampleur importante dans la communication sur le changement climatique. Cet article présente aussi de nouvelles connaissances sur l'intégration et la réarticulation de la perspective de risque par les entreprises. Ensuite, la réarticulation de l'impact du changement climatique sur les entreprises sous la forme de risque climatique indique une reconceptualisation de la gouvernance du changement climatique où la responsabilité se déplacerait en partie du domaine de la politique, des décideurs et des ONG vers celui du secteur

privé. Enfin, l'analyse pourrait suggérer que si le concept émergent de risque climatique souligne le risque financier que constitue le changement climatique pour les entreprises, l'impact sur la nature, l'environnement et les humains est moins visible dans les documents étudiés.

INDEX

Mots-clés: risque climatique, terminologie, cadrage du changement climatique, communication des entreprises
Keywords: climate risk, terminological analysis, societal framing, corporate discourse

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