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CLIMATIC CONDITIONS AND LEXIS: SOME DIACHRONIC NOTES ON WEATHER-RELATED WORDS IN ENGLISH AND OTHER EUROPEAN LANGUAGES

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Abstract

Focusing on metalinguistic sources and passages with words from the conceptual field of weather in cooccurrence (and including language contrasts), the study analyses whether changes in weather-related lexemes in English language history, particularly words for "weather, condition of the air," "cloud," and "mist," may be related to climatic conditions. This is supported for the following cases: (1) the use of the lexeme for "weather" in the sense of "fair weather" in the so-called Medieval Warm Period (950–1250); (2) changes among "cloud" words: *welkin*, *cloud*, *sky*, and *rack* "mass of cloud moving quickly" toward or at the beginning of the Little Ice Age (1250s–1450); and (3) changes among "mist" words: the revived *rime* "hoar frost, frozen mist, chill mist, or fog," the metaphorical use of *fog* "long grass left uncut" for "thick clouds of water vapor" and the figurative use of *haze* "body of dust" for "fog, thick mist" during the Tudor Inflation (1525–1600).

Unter Fokussierung auf metalinguistische Quellen und Textpassagen, in denen Wörter aus dem Sachfeld Wetter in Kookkurrenz auftreten, (und unter Einbezug von Sprachvergleichen) analysiert die Studie, ob Wandel bei wetterbezogenen Lexemen in der englischen Sprachgeschichte, insbesondere Wörter für 'Wetter, Luftzustand', 'Wolke' und 'Nebel', mit klimatischen Bedingungen zusammenhängen können. Diese Möglichkeit wird für die folgenden Fälle bejaht: (1) der Gebrauch des Lexems für 'Wetter' im Sinne von 'schönes Wetter' in der sogenannten Mittelalterlichen Warmzeit (950-1250); (2) Wandel bei "Wolken"-Wörtern: *welkin, cloud, sky* und *rack* 'Wolkenmasse, die sich schnell bewegt' kurz vor oder am Beginn der Kleinen Eiszeit (1250er-1450); (3) Wandel bei den "Nebel"-Wörtern: das wiederbelebte *rime* 'Raureif, frostiger Nebel, kalter Nebel', der metaphorische Gebrauch von *fog* 'langes Gras, das man nicht geschnitten hat' für 'dicke Wolken, Wasserdampf' und der bildliche Gebrauch von *haze* 'Staubansammlung' für 'Nebel' während der Tudor Inflation (1525-1600).
[GERMAN]

1. Lexicology and Climatology: Notes on Theoretical Background and Methodology

"'*What weather is it, Dorcas*?' said she, as regardless of me as if I had not been present. 'A little lowering, Madam – The sun is gone in – it was very fine half an hour ago.'" This quote from Samuel Richardson's *Clarissa* shows that the weather was already used as a topic for casual talk in 1784—it seems to be the earliest quote in an English novel. The weather affects our conversational strategies. Does it also affect the development of words?

The research question of this study is: How are selected climatic developments paralleled by changes of weather-related words? In other words, Are developments of weather-related words preceded by climatic developments, which could then be seen as (part of) the motivation for a lexical change?

For climate history, we will rely on relevant secondary sources (with the numbers of the subsequent sections for which the works are relevant in square brackets): Le Roy Ladurie (1971) [2–4], Burrough (1997) [2–4], Stothers (2000) [3], Brázdil et al. (2005) [2–4], Mann et al. (2009) [3], Behringer (2009) [2–4], Pribyl (2014) [2–3], and Fagan (2019) [3–4]. Pribyl (2014) is particularly on England; the others have a geographically wider view. The works also sum up preceding literature; they differ in details (such as the focus on aspects, regions, and the selection of information sources) but agree on overall developments addressed in this study. Except Mann et al. (2009), these works also deal with the climate's conjunction to demographic and societal developments (e.g., reduction of the population due to famines in the wake of bad weather or a growth in population due to rich harvests in the wake of good weather). However, these works do not include linguistic aspects. This perspective shall be attempted in the following analyses, keeping well in mind that lexical changes in written lexical records occur only years later than in spoken language and that a connection is more likely if a certain climatic change is succeeded by several lexical changes going into the same direction.

The linguistic theoretical basis of this article lies in cognitive diachronic onomasiology, as this is the most current approach that unites linguistic-formal, cognitive, and cultural knowledge and changes. Therefore, the following definitions are used, as they are suggested in the semasiological model by Blank (1999), and the comprehensive onomasiological models by Koch (2002) and Grzega (2007), and also in other works of cognitive diachronic onomasiology (but different to traditional taxonomy, cf. the historical accounts in Grzega (2004)): *metaphor* "change of meaning based on the similarity, or 'similar-to' relation, of concepts/referents" (e.g., *mouse* first for a rodent, then for a computer device looking like this rodent), *metonymy* "change of meaning based on the contiguity, or 'neighbor-of' relation, of concepts/referents" (e.g., *glass* first for the material, later for the drinking vessel made out of that material, still later for the amount contained by the vessel; or *corn* first for a part of the cereal, then for cereal as a whole), *specialization*/*generalization* "upward/downward taxonomic shift, i.e. change of meaning based on a 'kind-of' relationship of concepts/referents" (e.g., *corn* first for cereal, later for a type of cereal). Based on findings from cognitive diachronic onomasiology, it can furthermore be assumed that changes in the salience of a concept, in the prototypical representative of a concept or simply changes in the reality (including weather conditions, or atmospherical conditions) can trigger lexical changes—sometimes consciously, sometimes subconsciously; subconscious changes happen especially with metonymies and specializations/generalizations, in gradual semantic-pragmatic changes, for example, in this chain: *corn* "corn" > "corn" (which is the most useful part of the cereal for the community) > "cereal" > "cereal" (but everyone only looks at and thinks of the most typical cereal, namely wheat) > "wheat" (and occasionally still other forms of cereal in the sense and maybe collocation "strange/unusual sort of wheat" > "wheat") (cf. also Grzega 2003).

Of course, there must be some caveats about the degree to which our knowledge of diachronic lexicology can be linked to climatic conditions. Climatological data are not available for every area and written linguistic records do not necessarily reflect the actual date of coinage. However, for the time being, we will look at what we know about climate history on the British Isles and what we can say about the history of weather-related English lexemes, with occasional looks at other European languages.

For the aspects of diachronic lexicology, we will have a critical look at the statements in current historical dictionaries and the study by Neri (2017). The interpretations do not always seem convincing as they are based on non-metalinguistic texts. Such texts are prone to misinterpretation especially when it comes to meto-, hypo-, and hyperonymic relationships: Single sentence contexts in non-metalinguistic texts may make lexicographers think that a word's reference is restricted, while, as a matter of fact, the generic meaning can also be understood here, or a contiguous concept may have been meant by the writer. For instance, if a photograph of Charlie Chaplin includes the text *Charlie Chaplin with his typical hat and moustache*, lexicographers of the next generations might falsely interpret the words *hat* and *moustache* as "bowler hat" and "toothbrush moustache." Therefore, to reduce such misinterpretations, semantic-chronological determinations in this study will be based on metalinguistic texts (where words are clearly explained) or passages where related words are put in contrast. This is more reliable than non-metalinguistic texts. Only when the context allows for a semantic localization among other semantically related words, do non-metalinguistic texts seem a good reference for chronological classifications. Thus, the chronological determination of semantic developments in this study was preceded by a systematic search in glossaries, metalinguistic sources as well as translation works for Old English, Middle English, and Early Modern English (as they are partly included in the DOEC, the MEC, and the LEME). Concrete citations will be used when they enable to determine the start or the end of a semantic situation (in written language). Except for the development of *welkin* (where semantic changes are connected to formal changes), it is, for this study, not necessary to provide a full analysis of all semantic developments of a word; rather, we will concentrate on when a certain semantic development can first be detected.

The further sections of this contribution will consist of analyses of lexemic changes in the Medieval Warm Period, in the Little Ice Age and in the Tudor Inflation Period; here, the focus will be on the linguistic side. The final section (Summary and Outlook) will focus on the comparison or potential link between lexical and climatic developments.

2. The Medieval Warm Period (950–1250): Typically Fair Weather

As the name suggests, the Medieval Warm Period, predominantly from around 950 to around 1250, is characterized by warm weather as the typical weather condition, including on the British Isles. Notwithstanding occasional droughts in more southern regions of the European continent, population in Europe in general grew and corn cultivation was possible in comparatively northern and high regions (cf. the descriptions in Le Roy Ladurie 1971; Burrough 1997; Brázdil et al. 2005; Behringer 2009; Pribyl 2014).

This typically warm weather in England and other parts of Europe seems to be paralleled by the use of designations for weather in the sense of "fair weather." More precisely, the lexical type *weather* in Germanic is occasionally used in a positive narrowed reference "fair/appropriate weather" (without further positive contextual cues). This is mostly the case when directly juxtaposed to the pattern "un-weather":

(1) a. Old Frisian "weder and vnweder" [once]
'weather and unweather' [Neri 2017: 50]
b. Old Swedish "wädhir ok owädhir"
'weather and unweather' [Neri 2017: 82].
c. Old Danish "wædher oc vwædher"
'weather and unweather' [Neri 2017: 87].

These are passages where the direct opposition of antonyms reveals the meaning. Other instances are rarer, but exist. For English (cf. OED s.v. *weather*), there is an occurrence in the late-10th-century Exeter Book, *Maxims I*, where it says in line 76 (cf. Krapp & Dobbie 1936):

(2) "winter sceal geweorpan, weder eft cuman, sumor swegle hat"
"the winter shall go away, the [good] weather come again, summer bright [and] hot."

In the rest of the Germanic world, one such instance is a 9th-century gloss in a manuscript that is said to represent Old High German [Bavarian] (MS BSB Clm 14747 fol. 95v.) (cf. Neri 2017: 30):

(3) "Serenum. héitier. uú&er."
"Serenum. bright [serene]. or weather."

Neri (2017: 70) gives one positive instance for 11th-century Old Icelandic, or Old Norse:

(4) "[. . .] unz verði / veðr [. . .]"
"until (there) will be / (good/appropriate) weather".

As there is always weather, this can be seen as an indirect contrast to "non-weather" in the sense of "inappropriate/not good weather."

The MED (s.v. *weder* n.) and the HTE (2016, s.v. *weather*) assume instances of "weather" as "fair weather" also in periods later than 1250, but these interpretations should be questioned. The MED sees this quote as the earliest positively connotated record of Middle English (c1400, MS Oxford, Bodleian Library, Laud Misc. 595, v. 3280; cf. MED s.v. *weder* n.):

(5) "Passed the see, when thei hadde wedur, To Thenedoun."
"Passed the sea, when they had weather, to Thenedoun."

However, since this is specifically within a sailing context, it could easily be that the word does not signify "fair weather" in general, but "right weather (for sailing, i.e. with unextreme wind)." In all other nine instances that the MED regards as having positive implications, there is the same problem: there is a lack of metalinguistic comments so that the semantic interpretation of the precise hierarchical level in the nomenclature is equally difficult —"weather," "fair weather," "fair weather for a specific purpose" are all possible interpretations. This would mean that the only clear instances of the lexeme for "weather" in the sense of "fair weather," in English and other Germanic languages analyzed, are from the 9th to the 11th centuries. Koivulehto (1988: 49) even claims that "fair weather" was the original meaning in Proto-Germanic as well as in Proto-Slavic, as illustrated, for instance, by Russ. dial. *вёдро* "fair weather," Pol. *wiodro* "(fair) weather" (cf. also RuEW s.v. *вёдро*). No matter what the actual semantic direction was, prototypicality seems to have triggered the polysemy of "weather" and "fair weather" at that era. In the Romanic language group, more southern, there do not seem to be any instances of this polysemy in the same period (REW [1935] 8634, FEW 13.1: s.v. *tempus*).

In contrast, a restriction from "weather" to "bad weather" is chronologically not limited, though, and generally rare in the English language of the Medieval Warm Period. Not even all semantic interpretations in the OED (s.v. *weather*) are convincing, such as this passage in the Anglo-Saxon Chronicle (1122):

(6) "He þohte his hired on Winceastre to healdenne, ac he wearð þurh weder gelet"
"he thought to hold his court in Winchester, and he was hindered by the weather."

However, here the neutral interpretation "weather" would also be possible due to the context. A passage in Layamon's *Brut* (MS London, British Library, Cotton Caligula A.9, dating from c1275, potentially before 1200) can also be interpreted neutrally:

(7) "Mid wolcnen & mid wedere heo þoleden wen-siðes."
"Due to clouds and due to weather they suffered injuries [or: torments]."

A passage in Ælfric's *De duodecim abusivis* (a1150, MS London, British Library, Cotton Vespasian D.14, 15/11; cf. MED s.v. *weder* n.) seems the only passage relatively clearly bearing the meaning of "bad weather":

(8) "æigðer gea on heregunga, gea on hungre, gea on cwealme, gea on wederen, gea on wild deoran."
"be it in case of devastation, be it in case of hunger, be it in case of a plague, be it in case of [bad/inappropriate] weather, be it in case of wild animals."

The earliest Icelandic hits of a specialization of "weather" to "bad weather" are from the first quarter of the 13th century, when the Medieval Warm Period was presumably already on the wane in that part of the world (MS AM 619 4°: 65v; cf. ONP s.v. veðr[2]):

(9) "Eldingar flugu ok com veðr mykit ámot þæim"
"the lightnings flew and there came big (bad) weather toward them."

In Romanic languages, the use of the designation of weather for "bad weather" is also present, the earliest uses are listed for French at around 1250 (cf. FEW 13.1: s.v. *tempus*). However, types of bad weather in Romanic languages are usually expressed by suffixed forms of *tempus* "time, weather," mostly *tempesta(s)* (REW [1935] 8629), which originally simply meant "weather," too (cf. Georges 1869: s.v. *tempestas*).

In sum, there is a clear difference in the spread of the two opposite specializations of meaning. The polysemy of "weather" and "fair weather" is definitely typical of the 9th to 11th centuries in English and other Germanic languages; it is noteworthy that this happens in times where the weather is prototypically fair—the generic term serves to denote the cognitive prototype. This may well have happened subconsciously. If the weather was not ideal and prototypical, a special expression or phrase would be used.

3. Transition to and Beginning of the Little Ice Age (1250s–1450): More Clouds

In 1257/1258, there was an eruption of the Samalas volcano with succeeding bad weather conditions (with the sun often hidden behind clouds) and bad harvests on the British Isles the following years. This may have been the reason that by 1310 the medieval warm age seems to have come to an end on the British Isles: Several famines can be observed for the British Isles from the 1310s to the 1330s, and by the mid-14th century the Little Ice Age can be said to have started (cf. the relevant descriptions in Le Roy Ladurie 1971; Burrough 1997; Stothers 2000; Brázdil et al. 2005; Mann et al. 2009; Behringer 2009; Pribyl 2014; Fagan 2019).

There are several new developments for clouds. The OED lists the word *rack* (s.v. *rack*$_2$) for "mass of cloud moving quickly, esp. above lower clouds" and gives its first record for c1400 (possibly already from c1380, entitled *Patience*, MS London, British Library, Cotton Nero A.10). But the passage cannot be clearly interpreted as having a word precisely for "mass of cloud":

(10) "He þat rules þe rak may rwe on þose oþer"
"He that rules the rack may have pity on those other."

Another passage in the same work is (MED s.v. *rak*$_1$):

(11) "Roȝ rakkes þer ros with rudnyng an-vnder"
"Rough racks rose there with reddening underneath."

According to the OED, the etymology of *rack* is unclear. The MED gives an OE *racu* "cloud, storm" provided with a question mark. Indeed, there is an OE *(sweart) racu*, which describes something that goes up in the air at the beginning of the Deluge as described in Genesis according to the Junius Manuscript (cf. Krapp 1931, v. 1355). The regular southern phonetic development of an OE *racu* would be *roke*, which exists and is glossed as "myste, *nebula*" for the first time in 1440 *Promptorium parvulorum sive clericorum* (OED s.v. *roke*$_1$). The OED connects *roke* with a Scandinavian borrowing. Viewing the Old English records of *racu*, this seems unnecessary, though. Back to the form *rack*: this could be a dialectal development of an OE *racu*. The lexeme *rack* definitely denotes an atmospherical phenomenon, but the first clear proof that it means "mass of cloud" (and not another atmospherical phenomenon) does not occur before Johnson's 1755 dictionary (s.v. *rack* n.), where it is glossed in sub-entry 5 as "The clouds as they are driven by the wind." This entry seems to allow for the same interpretation in Article 115 of Francis Bacon's *Sylua Syluarum* (OED s.v. *rack*; supplemented by the rest of the sentence in the original [Bacon 1627: §115], where *Windes*, *Vpper Region, Clouds, Racke* and *Noise* are also italicized):

(12) "The Windes in the Vpper Region (which moue the Clouds aboue [(]which we call the Racke) [and are not perceiued below) passe without Noise]."

So it is Johnson's and Bacon's metalinguistic remarks that render it at least highly probable that the prior uses of *rack* are for a type of cloud.

The lexical type *cloud* originally means "rock, hill." It begins to metaphorically denote "cloud" (or first "cumulus cloud, rain cloud" as the prototypical cloud, before a later generalization to "cloud") in the late 13th century (cf. OED s.v. *cloud*). An early passage is (MS London, British Library, Additional 10301, l. 36, from c1300):

(13) "clouden us ouer-caste"
"clouds overcast us."

In the type *welkin*, the interesting thing at that time is not only a semantic change, but also a formal reinterpretation which might be related to changes in the typical weather condition. The type appears in Old English as *wolcen*, is an inherited Germanic word for "cloud" and relates to G. *Wolke*, Du. *wolk*. In Middle English (cf. MED s.v. *welken*), we find forms with *-o-*, *–eo-*, *–e-*, and *-a-* in the stressed syllable. The OED (s.v. *welkin*) writes, "The phonology of the Middle English forms with *eo*, *e*, and *a* in the stem is irregular. It has been suggested that the *eo* and *e* are due to mutation, but there is no obvious reason for the change, and the explanation still leaves the forms with *a* unaccounted for." However, it should be noted that the verb ME *welken* "toss (medicinal ingredients) together" also shows the variation *e* ~ *o* ~ *a* in the stressed syllable; moreover, *helpen*, another word where the stressed vowel appears before *l* plus further consonant, shows the variation *e* ~ *o* ~ *eo* ~ *a*; similarly, the noun ME. *welt(e)* has the variant *walt(e)* (cf. MED s.v. *helpen* and *welt(e)*). It may well be that, with fading awareness of what the original form was, the form entered the variation pattern of words with original *-e-* in the stressed syllable. It should be noted that the new forms *e* (and *eo*) and *a* occur in the 13th century: the first form with *eo* is attested in Ælfric's Glossary in MS Worcester Cathedral F.174 and in the Worcester Glosses to Old English MS Hat 113 (both from c1225 and with Worcester dialect features) (cf. also DOEC); the first form with *e* occurs in Layamon's *Brut* in MS London, British Library, Cotton Caligula A.9 (from 1275, possibly a1200, with mixed dialect features, as there is also a form with *eo* in this same

manuscript); the first form with *a* appears in the 13th-century MS London, British Library, Cotton Titus D 18 (which shows mixed dialect features). Not only in Layamon's *Brut* does one find variation, but also in MS Cambridge, St. John's College H.1 (from a1387), where there are *welcon* and *wolken*. Viewing the 55 quotations in the MED, the following distribution can be observed. In the first half of the 13th century, the forms with *eo* prevail. From the last quarter of the 14th century on, the forms with *e* are in the majority, followed by those with *a*. Clearly, rarer are the forms with *o*. In addition, it may also be that the part *-kin* was, by way of folk-etymology, interpreted as the morpheme *-kin*, originally a diminutive suffix like the more frequent *-ie*. Diminutives frequently also serve for metaphors, metonymies, and specializations (as illustrated in *catkin*, *townie* "a village inhabitant original from a town," *napkin* "little cloth") (cf. also, e.g., Jurafsky 1993; Grzega 2004: 113f.). If *-kin* was interpretable as a diminutive suffix, the first elements could then easily have been interpreted as ME *wel* "well, source of water" and *wal* "upright enclosing structure, usually constructed of stone, wall." Two potential metaphors may thus have motivated the change: a big cloud is like the source of (rain-)water or like a wall to the sun. The latter instance can be compared to the word *cloud*, which at that time still contains the original meaning "rock." These connections with "well" and "wall" could have seemed to be more reasonable than a connection with *wol* "wool," which may be why the form with *-o-* in the stressed syllable dies practically out by 1400. For the development from *wolcen* to *welkin* or *walkin*, we have thus phonological, morphological, and semantic/onomasiological reasons coming together.

With clouds as the prototypical element of the sky (and both potentially seen as the source of water "from above"), it comes as no surprise that *welkin* starts to be metonymically used for "sky" in the late 14th century, as is *sky*, originally also used for "cloud," as in its donor language Old Norse (Hellqvist 1922: s.v. *sky*, Köbler 2014: s.v. *sky*). Gower in three passages of his *Confessio Amantis* (from 1393 or prior) writes (cf. Macaulay 1900),

(14) a. "The Sky wax derk, the wynd gan blowe / The firy welkne gan to thondre"
"The sky was dark, the wind began to blow, the fiery cloud began to thunder" (iii.984).
b. "The Planetes [. . .] stonde upon the Sky"
"the planets [. . .] stand upon the sky" (viii.948).
c. "The welkne was al overcast / The derk nyht the Sonne hath under"
"The welkin [sky] was all overcast, the dark night has the sun down" (viii.1039).

In (14), *welkne* is used as "cloud" in the first passage, but as "sky" in the third; *sky* is used as "sky" in the first two instances. Prior uses of *welkin* as "sky" do not seem to exist, since the 1122 quote from the Anglo-Saxon Chronicle (Oxford, Bodleian Library, Laud Misc. 636) that the OED (s.v. *welkin*) entry lists does not reveal that, if the passage is continued, *welkin* is juxtaposed to *heaven*:

(15) "Hi sægon on norð east fir micel & brad wið þone eorðe & weax on lengþe up on an to þam wolcne & se wolcne un dide on fower healfe and faht þær to geanes. + swilc hit scolde acwencen. & se fir weax na þa ma up to þe heouene."
"they said that they saw a fire in the north-east, large and broad, near the earth, and that it grew in height unto the welkin, and the welkin divided into four parts and fought against it, as it would have quenched it; nevertheless the fire flamed up to heaven."

In Chaucer's *Fortune* (l. 62 f.; cf. Benson 1987: 652 f.), it is also found as "sky":

(16) "The see may ebbe and flowen more or lesse / The welkne [vr. walkyn] hath might to shyne, reyne, or hayle."
"The sea may have low or high tide, the welkin [sky] has might to shine, rain or hail."

Could it even be that *sky* and even *cloud* are used in the metonymical sense of "sky" in the second half of the 13th century already? Metalinguistic texts seem not available, though.

As already said, the lexical type *cloud* denotes "cloud" since the late 13th century. Around 1300, as also noted above, there seems the additional meaning "sky." However, this evidently dies out in general language again. According to the HTE (2016, s.v. *cloud*), this is over around 1400. Very clearly, Withals (1553: fol. 3v) glosses "A Cloude" merely as Latin *nubes*; there is an equation of "skie" and "ęther" only.

It may be noted that metonymical shifts between "cloud" and "sky" (apart from derivational relations) can also be observed in other European languages, as Buck (1949: 1.51 and 1.73) already noted in his landmark dictionary. However, it must be admitted that these happen later, in the 17th to 20th centuries: The Welsh word *wybr* begins to be used as "sky" in Jones 1688 dictionary, while we still find it glossed as "A cloude" about a century earlier in William Salesbury (1547, s.v. *wybren*). Breton *oabl*, today "sky," is cognate to the aforementioned Welsh *wybr*. The semantic shift between "sky" and "cloud" seems to go back to the 18th century. De Rostrenen (1732) writes in his French-Breton dictionary that *oabl* is improperly used for "cloud" as it properly means "sky" ("NUAGE, *vapeur condensée; nuée épaisse*. Couṅabrenn. [...] (*Improprement, on dit*; oabl; *qui proprement signifie; Ciel*. [...]"). The variant *ebr* is attested for both "sky" and "cloud" since the 18th century (cf. also DEVRI s.v. *oabl*/*oabr*). By contrast, in Pierre de Châlons' *Dictionnaire breton-françois du diocèse de Vannes* (de Châlons 1723), the words are clearly separated (*ean* is glossed as Fr. *ciel* "sky," *huren* ~ *hurenneu* ~ *hudeen* as *nuée* "(big?) cloud"). In Latvian, the original *debess* "cloud" and *mākonis* "rain cloud" became used for "sky" and "cloud" in the 19th century (Karulis 1992: s.v. *mākonis*). Modern Swedish has developed the double sense "cloud; sky" during the 20th century (the modern metonymic meaning is remarkably enough not yet listed in Hellqvist 1922: s.v. *sky*], although the SAOB interprets some earlier entries as "sky"). The split between several types of clouds in separate, synchronically non-derived words can also be observed, although again only recently. The Ladin dialects of the Badia and Mareo valleys have developed, in the mid-20th century, a difference between "small cloud" and "dark cloud," namely *nìo* and *néura* ~ *níora*, either going back to Lat. **nībulum* < Lat. *nubilum* "cloudy (neuter form)" and Lat. *nĕbula* "fog" (EWD s.v. *nìo*/*néura*) or to the Latin masculine **nībulus* "cloudy" and its respective feminine form **nībula* (Gsell 1990: 133).

Finally, according to the OED (s.v. *murk*), there is a metonymical use of *murk* ~ *merk* ~ *mirk* for "thick mist or fog," originally "darkness." As the first record, the OED presents a passage from *Cursor Mundi* [a1325, London, British Library, Cotton Vespasian A.3]):

(17) "Ne mist ne merck ne namaner/O weder"
"no mist nor murk nor any manner of weather."

However, the original meaning "darkness" could also make sense here. As a matter of fact, no other OED entry afterwards allows for a clear interpretation as "thick mist." Neither do the dictionaries of the early modern period give this meaning. If the word is listed, it is only given as "dark." The word should at best be excluded from further discussion here.

In sum, the parallelism of an increasing prominence of clouds and the "sky/cloud" polysemy features in several languages. Furthermore, the concurrence of several, in part parallel, lexical changes of English in the late 13th and 14th centuries (*rack, welkin, sky,*

cloud), though, could be linked to the climatic changes of these times, namely an increase of times where the sky is often featured by clouds causing cold which, in turn, has a negative impact on the living conditions of people; this negative impact may also have triggered a cognitive need to name different shades of cloudiness.

4. The Tudor Inflation (1525–1600): Misty Again and Again

The time from 1525 onward until the first quarter of the 17th century in England is called the Tudor Inflation for its high inflation rate on wheat; some see 1600 as the turning point and 1630 as the end of the inflation (cf. the descriptions in Le Roy Ladurie 1971; Burrough 1997; Brázdil et al. 2005; Behringer 2009; Fagan 2019). The period's first part, until 1560, is characterized by cool wet years in the late 1530s, then several very hot summers (particularly the 1556 heat wave) and a few cold winters. In the 1560s, winters become particularly cold. Although the climate did cause a number of droughts, there were additional demographic pressures and the influx from American gold and silver into the economy rendering nutrition problems more complex. At any rate, the period coincides with the development of three words for "mist," that is, a weather condition which may have been considered particularly prominent and momentous and which may thus have caused a cognitive need to name various subtypes of mist.

One new lexeme for "mist" is *fog*. The first record in the OED (s.v. *fog* n.$_2$) is from 1544, with the precise type of weather condition remaining unclear:

(18) "The sonne brake out, the fogge went awaye."

Indeed, there seem no earlier hits, so that the word seems to have come up in the wake of the cool wet years of the late 1530. The OED classifies its origin as unknown. However, it may be explained as a metaphorical use of the second OED entry *fog* n.$_1$ "long grass left uncut" so that fog hiding the sky is seen as having the same shape and effect as thick clumps of grass hiding the ground.

Furthermore, there is the revival of the archaic *rime* "hoar frost, frozen mist, chill mist, or fog." According to the OED (s.v. *rime*), the first new record is in 1587, but as a matter of fact, it already occurs in Elyot's Latin-English dictionary (Elyot 1538 s.v. *substillum* "a ryme or fallynge myste"), in other words: clearly in the first part of the Tudor Inflation period.

Third, there is the metaphorical use of *haze* from "body of dust or other minute particle" for "fog, thick mist." It is first recorded in Richard Madox's diary in 1582 (OED s.v. *haze*). The meaning is unclear, though:

(19) "yt was Venus with a great fyery haze lyke a bushlock abowt hir".

That it is a weather phenomenon is clear only in the next OED entry in Hakluyt (1589):

(20) "Master Coxe looking out, discerned (in his iudgement) white cliffs, [. . .] through the hase and thicke weather."

Since written records lag behind oral usage, it may well be that this use is older, although no earlier instances are found in the corpora used for this study. At any rate, the use is present in the particularly cold part of the Tudor Inflation.

5. Summary and Outlook

For a comparative look at lexical and climatic developments, some issues of diachronic lexicology were elucidated. The purely linguistic observations can be summed up as follows:

a As to chronological determinations—and this is something that is of general significance for etymological work—, they are facilitated when focusing on ancient dictionaries, translation works, metalinguistic remarks and contextually juxtaposed elements of a conceptual field, while unspecific non-metalinguistic contexts may be prone to misinterpretations and subsequent chronological misclassifications.
b Chronological classifications which have been revisited: *welkin*, *cloud*, and *sky*, all originally "cloud," are used for "sky" for the first time in the 14th century (*sky* and *cloud* potentially already in the late 13th century)—at the time of the beginning Little Ice Age—*rime* is used for a type of "mist" already half a century earlier—during the Tudor Inflation.
c New etymological explanations can be proposed: The development from OE *wolcen* to ME *welkin*/*walkin* can be explained through folk-etymological influence from ME *wel* "source of water" and *wal* "wall" plus *-kin* interpreted as a diminutive suffix.
d With regard to classifying, the shifts from "cloud" to "mist" and from "cloud" to "sky" are based on the contiguity of the concepts and can thus be termed metonymies, which may have happened, as pointed out in the introductory section, subconsciously, after gradual semantic-pragmatic changes; in contrast, the use of *cloud, fog*, and *haze* as weather terms are based on metaphor; furthermore, the shifts between "weather in general" and "type of weather" and between "cloud" and "type of cloud" in several European languages can be seen as vertical taxonomic shifts starting in specific contexts, later getting generalized (just as some words for "cloud" seem to have denoted "rain cloud" originally).

To what degree the linguistic developments outlined can really be traced back to climatic conditions cannot be answered for sure, as climatological data are not available for every area and written linguistic records do not necessarily reflect the actual date of coinage. As of yet, the following observations can be made:

a Clear instances of the sense "fair weather" instead of "weather" only seem to occur during the Medieval Warm Period, or Medieval Climatic Anomaly, essentially from around 950 to around 1250.
b Changes in the words *welkin*, *cloud*, and *sky* are, as illustrated, attested for the 14th century (*cloud* and *sky* possibly even late 13th century). Moreover, there is the new word *rack* "mass of cloud moving quickly, esp. above lower clouds." There is a noteworthy coincidence of these lexical changes to the drastic climatic changes in the late 13th and first half of the 14th centuries, in other words: when the Little Ice Age begins.
c The Tudor Inflation conspicuously coincides with the revival of the archaic *rime* "hoar frost, frozen mist, chill mist, or fog," the metaphorical use of *fog* "long grass left uncut" for "thick clouds of water vapor or ice crystals" and the metaphorical use of *haze* "body of dust" for "fog, thick mist."

In other words, the strong real-world presence thus leads to a strong cognitive presence and can ultimately trigger linguistic changes: The protoypical presence of warm (not too hot) weather is paralleled by the word for "weather" restricted to the prototype "fair weather" in English; the increase in masses of cloud and fog hiding the sun in the sky is succeeded by several lexemic changes in English (and other languages) related precisely to these weather phenomena.

As already said at the beginning: Since written records of lexical changes usually come years after something is used in spoken language, such connections cannot be determined for sure. Definitely, the impact of a climatological event is more likely if several lexical changes are recorded for the period during or after that event. Moreover, if a certain lexical development occurs in several speech communities that share climatic conditions, this also supports a connection (such as the semantic shift between "weather" and "fair weather" in Germanic and Slavic languages from the 9th to the 11th centuries, and the polysemy "sky, cloud" in the

northern European seaside speech communities of English, Breton, Latvian, and Swedish from the 18th to the 20th centuries). Of course, this is not a claim that every major climatological event will shape lexis—there is, for example, no obvious change in weather-related vocabulary after the eruptions of the Laki (1783/84) and the Tambora (1815). The latter led to what was called the "year without (a) summer" and, predominantly in the United States and Germany, "eighteen hundred and froze to death"/"Achtzehnhundertunderfroren" (1816), so here the influence was on collocations rather than on single words. Certainly, assumptions of individual connections between climatic events and lexical developments will be most strongly supported when we find contemporary metalinguistic notes that reveal these connections, for instance in the form of diary entries that record how a certain climatic event was reflected in word choice. Or to take a more modern example: the term *smog* for British fog is explicitly explained by the *Santa Cruz Weekly Sentinel* of 3 July 1880 by way of the phenomenon that it is "always colored and strongly impregnated with smoke" (this seems to be the first record of the word as also pointed out in the English Wikipedia [s.v. *smog*, accessed 22-04-2022, 22:00 CET] and in contrast to the OED s.v. *smog*, whose first entry is from 1905). Since the word does not seem to occur in dialects (cf. EDD), nor 19th-century literary descriptions of London, nor Rollo Russell's 1880 pamphlet *London Fogs*, it may very well be that the term is actually first coined in the United States in 1880 or a little earlier, albeit, however, in connection with descriptions of the London fogs of 1873 and 1879/1880. In sum, the discussion has shown that climatic conditions may trigger lexical developments and that these questions are worth pursuing in the study of lexical and semantic change.

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