Article

Sentence Patterns in German and Korean: Syntactic and Semantic Aspects of the Basic Weather Expressions

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Introduction

This paper is based on earlier research on weather verbs (weather expressions, meteorological verbs, meteorological expressions) and syntactic patterns within which they occur. More specifically, Indo-European languages such as German, English, and Latin, and non-Indo-European languages such as Japanese and Turkish have been the main focus of Ogawa et al. (2014) and Kienpointner (1995, 2016). On this empirical basis, a typological model called "meteo-scale" has been established as a *tertium comparationis* (cf. Kienpointner and Weinberger 2016 on the difficult problem of establishing a theoretically tenable *tertium comparationis* for contrastive linguistics).

With the help of this model, the cross-linguistic contrasts and differences between the languages mentioned above can be analysed and explained (cf. also Malchukov and Ogawa 2011). Some tentative implicational universals have been suggested (cf. Ogawa et al. 2014, 141), and empirical data taken from other studies on weather expressions have been integrated (cf. Meulleman and Stockman 2013 on Spanish; Salo 2011 on Uralic languages; Mettouchi and Tosco 2011 on Afro-Asiatic languages; and Eriksen et al. 2010, 2015 on a wide range of [genetically unrelated] languages).

However, in spite of the omnipresence of weather expressions in probably all languages of the world and the fact that these expressions form an indispensable part of everyday communication—especially, conversational openings—meteorological expressions show some puzzling properties and syntactic or semantic peculiarities which remain to be investigated in their totality and complexity. Therefore, further empirical studies on specific languages or language families seem to be a necessary and important means to achieve the goal of a universally tenable description and explanation of this complexity.

That is why we have undertaken such a further empirical contrastive study, comparing empirical data from German and Korean, and assigning German and Korean weather expressions to the most frequent and prototypical syntactic patterns of these two languages (cf. below, the 3rd and 4th sections). The

* The co-authors' names are simply placed in alphabetical order, as they have both contributed substantial parts of the paper equally.

necessary theoretical background for this comparison will be established in the following section.

The empirical data we will be looking at are mostly representative for what we call basic or prototypical weather expressions. Although we cannot fully justify the distinction between basic/unmarked/prototypical and extended/marked weather expressions in enough detail here (cf. Kienpointner 2016, 57f), the following observations can at least support the prima facie plausibility of this distinction. One of the quantitative criteria is frequency, with basic or prototypical weather expressions being more frequent than marked constructions. As far as English is concerned, a Google test—performed on August 16, 2017—showed that *It's raining* occurred 12,100,000 times, whereas *Rain is falling* was found only 429,000 times. Similar results have been established for German *Es regnet* ("It's raining") und *Der Regen fällt* ("Rain is falling"). *Es regnet* appeared 2,090,000 times, *Regen fällt* 251,000 times, *Der Regen fällt* only 79,100 in a Google test performed on December 20, 2018 (cf. also Kienpointner 2016, 58) and Spanish *Llueve* ("It's raining") by Meulleman and Stockman (2013, 119), who report that there is a frequency of 79% of zero-place—avalent—*llueve* in a corpus of 1,000 occurrences of this verb (cf. also Siller-Runggaldier 2004, 236f on the markedness of the causative uses of Italian and French weather verbs: *fare piovere/faire pleuvoir* [lit. "make rain"]).

There are also qualitative criteria for the (un)markedness of weather expressions: The basic or prototypical sentence patterns are usually shorter, syntactically less complex and semantically simpler representations of meteorological phenomena than their marked counterparts (cf. also Pinkster 2015, 854-55).

Theoretical Background

Comparing the contrastive sketch of Latin and German weather expressions presented in Kienpointner (1995, 2016) with research on further languages such as Turkish and Japanese (cf. Ogawa et al. 2014), we observe the following facts: The weather expressions are either 1) closer to the prototypical Latin strategy of presenting the pure phenomenon, the weather process as such, with an impersonal verb in the third person singular present tense (e.g. *Pluit* "It's raining," *Ningit* "It's snowing"), or are 2) closer to German and English, where

the involved entities are often presented explicitly, with an overt noun or, in basic weather expressions, more usually with the (neuter) pronoun (*it/es*) in the singular as subject (cf. *It's raining/Es regnet; It's snowing/Es schneit; The sun is shining/Die Sonne scheint; Dusk is falling/Es wird dunkel/Der Abend dämmert*).

1. Basic Latin Weather Expressions:
Pluit. – *Tonat*. – *Ningit*. – *Grandinat*. – *Rorat*. – *Fulget*. or *Fulgurat*. or *Fulminat*. – *Nubilat*. – *Ventus spirat*. or *Auster/corus/notus/septentrio* […] *flat/spirat*. – *Lucet*. – *Luciscit*. or *Dilucescit*. or *Illucescit*. – *Vesperascit*. or *Invesperascit*. or *Advesperascit*.

2. Basic English Weather Expressions:
It's raining. – *It's thunder!* (a normal answer to questions such as *What is that?*) or *There's thunder*. – *It's snowing*. – *It's hailing*. – *The ice or the snow is thawing*. – *It's lightning!* (a normal answer to questions such as *What is that?* cf. above) or *There's lightning*. – *It's getting cloudy*. – *The wind is blowing*. – *The sun is shining*. or *It's sunny*. – *Dusk is falling*. – *Dawn is breaking*.

3. Basic German Weather Expressions:
Es regnet. – *Es donnert*. – *Es schneit*. – *Es hagelt*. – *Es taut*. – *Es blitzt*. – *Es bewölkt sich*. – *Der Wind weht*. – *Die Sonne scheint* or *Es ist sonnig*. – *Es dämmert*. – *Es wird dunkel* or *Der Abend dämmert*. – *Es wird hell* or *Es wird Tag* or *Der Morgen graut*.

Unlike German and English sentence patterns, syntactic patterns with impersonal pronouns as subject are not common in weather expressions in non-Indo-European languages such as Turkish or Japanese. For example, the following prototypical Turkish (examples 4-7) and Japanese (examples 8-11) sentence patterns express both the entities involved in the weather process and the process itself, sometimes with semantically redundant, cognate nouns and verbs (NOM = nominative):

4. *Yağmur yağıyor*. (lit. Rain-NOM is raining: "It's raining")
5. *Kar yağıyor*. (lit. Snow-NOM is raining: "It's snowing")
6. *Gök gürlüyor*. (lit. Sky-NOM is thundering: "It's thunder")
7. *Hava kararıyor*. (lit. Weather-NOM is darkening: "Dusk is falling")
8. *Ame-ga furu*. (lit. Rain-NOM fall: "Rain is falling")

9. *Yuki-ga furu*. (lit. Snow-NOM fall: "Snow is falling")
10. *Kaminari-ga naru*. (lit. God's gong-NOM gong: "It's thunder")
11. *Hi-ga kuraku-naru*. (lit. Day-NOM get-dark: "Dusk is falling")

However, in colloquial Turkish (cf. examples 12-13) and likewise, in spoken Japanese (cf. example 14), some weather verbs can also be used without subject, as it is generally the case in Classical Latin:

12. *Yağıyor* (lit. Rain-PROGRESSIVE: "Is raining"
cf. Lat. *Pluit*. ("Rains")
13. *Gürlüyor* (lit. Thunder-PROGRESSIVE: "Is thundering")
cf. Lat. *Tonat*. ("Thunders")
14. *Futte-iru* (lit. Rain-PROGRESSIVE: "Is raining")
cf. Lat. *Pluit*. ("Rains")

At a higher level of abstraction, the Latin, German, Turkish, and Japanese examples presented above can all be located on a continuum of the verbal presentation of weather events, with an entity pole and a phenomenon pole, and an area in between. This continuum can be called the "meteo-scale" (cf. below, Table 1), that is, "a cline between 'verby' and 'nouny' constructions with the 'cognate' type in between" (cf. Malchukov and Ogawa 2011, 26; Ogawa et al. 2014, 120). In the "cognate" type, both the entities and the process are explicitly mentioned with the help of nouns and verbs which are etymologically related (cf. e.g. German *Der Wind weht*, Turkish *Yağmur yağıyor*, Japanese *Kaminari-ga naru*).

At the entity pole, the entities involved in the weather processes are mentioned explicitly, with a noun. Often, these nouns are combined with semantically general or meteorologically "weak" verbs, which are not only used in relation to weather phenomena. So they are not "meteo-specific" (cf. e.g. Germ. *fallen* [to fall], Engl. *shine*, Lat. *cadere*, Turk. *çakmak* [to hit], Jap. *hikaru* [to shine]). It is the noun, therefore, which enables these sentence patterns to refer to states of affairs of a meteorological nature. At the phenomenon pole, only the weather process, without the involved entities, is expressed by the weather verb alone,[1] and "these constructions with zero subjects of impersonal

1. In fusional (inflected) languages such as Latin, even verbs with zero-subjects have a formal indication

verbs are very common cross-linguistically" (Malchukov and Ogawa 2011, 25). In between, both the entities and the weather process are mentioned explicitly, either by a semantically "weak" neuter personal pronoun plus a verb, as in German or English, or by a cognate noun and a cognate verb, as sometimes occurs in German, Turkish, or Japanese.

At this point, we would like to add a few remarks concerning other typological approaches to weather verbs. From a cognitive point of view (Langacker 1991, 366-67) takes the example of the verbalization of the concept "rain" or "raining" in order to illustrate a classification of weather phenomena as presented in natural languages, which is similar to the meteo-scale. According to this classification, either entities (such as water) or processes (the falling of water from the sky) are "profiled" as the figure in relation to some ground, with cognate constructions as a third type in between, where entities and processes redundantly cover the same conceptual content.

Another interesting typological approach was developed by Mettouchi and Tosco (2011). It is based on the description of weather expressions in Afro-Asiatic languages. These languages are classified according to the partial or total backgrounding of either the entities or the processes involved in precipitation events or cyclic meteorological events. Again, this typology comes close to the meteo-scale presented above.

Similarly, Eriksen et al. (2015) establish a trichotomy of types of meteorological expressions. These can be characterized as 1) the predicate type focussing on the weather event, 2) the argument type focussing on the involved entity, and 3) the argument-predicate type, where both the entity and the event are foregrounded (Eriksen et al. 2015, 206). This apparent equivalence with the meteo-scale is somewhat weakened because Eriksen et al. (2015, 207f) consider not only zero-place predicates such as Latin Pluit, but also weather verbs with expletive subject—such as English *It's raining* or German *Es regnet*—as instances of the predicate type.

Moreover, while we agree that "weather events do not include agents" (cf. Eriksen et al. 2015, 223), at least some of the subjects of weather verbs (cf. e.g.

of the missing subject, namely, the third person singular ending: *plu-it*. But this can simply be explained by typological constraints. In fusional (and many agglutinative) languages, the endings of finite (i.e. inflected) verbs are obligatory. Therefore, some ending has to be placed, and it could not be any other ending apart from this third person singular form, which is the default case.

Engl. *sun*, *lightning*) have agent-like properties (cf. below, the 4th section).

Further interesting contributions to the comparative study of weather verbs/expressions come from Meulleman (cf. Meulleman 2015; Meulleman and Stockman 2013; Meulleman and Paykin 2016). The main focus of Meulleman's and her colleagues' analyses are Indo-European languages such as French, Italian, Spanish, English, Dutch, or Russian. Here they try to assign weather verbs a status as inaccusative, inergative, or transitive verbs—with an agent as subject—and to describe their differing semantic roles.

While Meulleman and Paykin (2016, 8) conclude that most weather verbs can be analysed as motion verbs—involving differing language-specific verbalizations of semantic roles such as Thing, Figure, Path, Goal, Manner—they also plausibly highlight the fact that "the class of weather verbs is rather heterogeneous with respect to their conceptual structure."

What is especially important is that Meulleman and her colleagues do not only study the arguments of prototypical weather verbs/expressions, as we do here, but also describe various arguments and satellites within marked—more complex—constructions, and also metaphorically used weather verbs with animate subjects.

In a similar way, (Siller-Runggaldier 2004, 228ff) describes the syntactic and semantic effects of the use of more complex sentence patterns involving—metaphorically used—weather verbs in Italian and French, also including the addition of several types of satellites. Semantically, weather verbs are interpreted as involving some motion of precipitation phenomena—similar to Meulleman's analysis (cf. Siller-Runggaldier 2004, 237; Cennamo 2015, 426f; Dallabrida 2018, 99). These are no doubt important extensions to the analysis of the basic or prototypical verbs of precipitation which are the focus of our analysis in this paper.

Finally, we would like to discuss a few generative approaches to the description of weather verbs, such as Ruwet's (1986, 50; 1991, 106-12) distinction between a "Single-word Focus" and a "Experience-splitting Approach." Similarly as we do with the help of the meteo-scale, Ruwet places weather expressions on a continuum between the description of pure processes and the entities undergoing these processes, and refers to many examples of weather expressions in (non-)Indo-European languages.

The main difference between his generative point of view and the position we would like to defend here is that 1) Ruwet (1986, 44n3) is willing to

accept an analysis with an underlying "pro"-subject also in languages focussing on the phenomenon pole (Latin, Italian, etc.; cf. Chomsky 1981, 257) and that 2) Ruwet (1986, 45; 48) takes the identity of truth conditions of quasi-synonymous sentences as a proof of their semantic identity.

Against the generative "pro"-subject analysis, which assumes that weather verbs in pro-drop languages such as Latin have an underlying subject, we would like to argue as follows: Latin weather verbs such as *Pluit* (cf. similarly Spanish *Llueve*, Italian *Piove*, Ancient Greek *Ὑει*, Modern Greek *Βρέχει*, Czech *Prší*, Hungarian *Havazik*, Finnish *Sataa* [with all verbs roughly meaning "Rains"]) cannot be supplemented with a subject, differently from most other one- or more-place Latin verbs, where a missing overt subject can be regularly inserted on the basis of our contextual and situational knowledge. Moreover, the generative approach would reduce the contrasts between languages such as Latin and German to a purely formal one, that is, the existence or non-existence of overt morphological forms of the subject pronoun (cf. e.g. Ruwet, 1986, 45; 1991, 90). However, we would like to argue that the German, English, and French constructions with pronoun differ from Latin weather verbs also functionally, assuming different positions on the meteo-scale. For example, the following sentences are all considered semantically equivalent by Ruwet:

15. French *Il tombe de la pluie*. (lit. "There's falling of rain," that is, "Rain is falling")
16. English *It's raining*.
17. Italian *Piove*. ("Rains")

These sentences, however, are only identical as to their reference and truth conditions, but different as far as their language-specific meaning (cf. Bondzio 1980, 137; Coseriu 1988, 262ff; Kienpointner 2008) is concerned, because they refer to different sections of the meteo-scale. For example, French *Il tombe de la pluie* (example 15) would be slightly closer to the entity pole than French *Il pleut*, with the semantically "weak" pronoun *il*, because the falling rain is here also represented by a noun (*de la pluie*), and thus more explicitly portrayed as an entity. In English, the entity undergoing the weather process is only referred to with the semantically weak *it* in example 16. And in Italian *Piove* (cf. example 17) we have a representation of the "pure process," situated at the phenomenon pole (cf. Cennamo 2015, 425).

As far as other, more recent generative contributions are concerned, similar critical comments apply to Bleotu (2012). We agree with her standpoint that weather verbs can be assigned semantic roles, that is, "Theme" or "Cause/Agent" (cf. below, the 4th section). However, as in the case of Ruwet, we doubt that Bleotu's (2012, 78-79) derivation of different language-specific weather verbs/expressions from a common underlying abstract structure "FALL (RAIN)" (the unaccusative case) or "CAUSE (FALL (RAIN))"—the unergative case—which is based on Hale/Keyser (2002), can account for the subtle semantic, in other words, functional differences between the surface realisations of the assumed identical underlying structures.

Finally, Levin (2017) provides a wealth of interesting distributional facts about weather verbs—more specifically, precipitation verbs—which clearly show their semantic proximity to substance emission verbs (e.g. Engl. *to gush*) and the differences between expletive subjects of weather verbs and "truly expletive" subjects of raising verbs (e.g. Engl. *to seem*). Therefore, weather verbs can be assigned a semantic role (theme for unaccusative weather verbs and emitter for unergative weather verbs; Levin 2017, 6; 12). While this comes close to our analysis, we disagree when Levin (2017, 15) suggests that Italian can be analysed in a similar way as English, thus neglecting the language–specific semantic differences between, for example, Italian *Piove* and English *It's raining*.

We would now like to proceed with the presentation of the meteo-scale (cf. below, Table 1). In order to illustrate its capacity to serve as a *Tertium comparationis* for genetically non-related and typologically distant languages, many more languages—beyond the examples already given above—have been integrated as examples, on the basis of the respective literature and/or native speaker/expert consultation.

Furthermore, we would like to give a few additional comments with reference to the meteo-scale. There are some meteorological phenomena which seem to "lend themselves" more to the expression at the phenomenon pole because the involved entities are normally not experienced as clearly delimited entities in reality (e.g. darkness or dusk or dawn). In this way, expressions such as Latin *Advesperascit*, Russian *Večereet*, or Japanese *Kurakunaru* (all having the literal meaning of "Is getting dark") seem more "natural" than Turkish *Gün kararıyor* (lit. "Day is getting dark," that is, "Dusk is falling") or English *Dusk is falling*. However, the Turkish and English constructions, and similar ones in other languages, can be explained by the fact that they contain meteorologically

Table 1. (source: authors)

Meteo-Scale			
Phenomenon Pole ---------- Intermediate Area ---------- Entity Pole			
Realisation: Pure verb: V	Pro + V	N + cognate V	N + "weak" V
Pure verb: V: **I. Indo-European Languages:** Lat. *Pluit*. / *Ninguit*. Ital. *Piove*. / *Nevica*. Span. *Llueve*. / *Nieva*. Skt. Várṣati. (lit. "Snows") Ancient Gr. *Ὑει*. / *Νείφει*. Modern Gr. *Βρέχει* / *Χιονίζει*. Czech *Prší*. (lit. "Rains") / *Sněží*. (lit. "Snows") Rus. *Svetaet* (lit. "Dawns" = "Dawn is breaking") **II. Non-Indo-Europ. Languages:** Asia: Jap. (coll.) *Futte-iru*. / *Kuraku naru*. (lit. "Is raining" / "Is getting dark") Turk. (coll.) *Yağıyor*. / *Gürlüyor*. (lit. "Is raining' / "Is thundering") Europe: Hung. *Havazik*. ("Snows") Fin. *Sataa* ("Rains") Fin. *Tuulee* (lit. "Blows" = "The wind is blowing") North- / South-America: Hopi (Uto-Aztecan) *Yooyoki*. ("Rains") Lakota (Siouan) *Magaju*. ("Rains") Guaraní (Tupí-Guaraní) *Oki*. ("Rains") San Carlos Apache (Athapascan) *Gozdod*. (lit. "Is-hot" = "The weather is hot") Africa: Beja (Cushitic) *Bireet-iini*. ("Is raining")	Pro + V: **I. Indo-European Languages:** Germ. *Es regnet*. / Es schneit. Engl. *It's raining*. / It's snowing. Fr. *Il pleut* / *Il neige*. Dutch *Het regent*. / *Het sneeuwt*. Swedish *Det regnar*. Norwegian *Det regner*.	N + cognate V: **I. Indo-European Languages:** Germ. *Der Wind weht* ("The wind is blowing") Czech *Vítr vane* ("The wind is blowing") Rus. *Gremit grom* (lit. "Thunders thunder") **II. Non-Indo-Europ. Languages:** Asia: Jap. *Kaminari-ga naru*. (lit. "God's gong is gonging") Turk. *Yağmur yağıyor*. (lit. "Rain is raining") Even (Tungusic) *Udan udnan*. ("Rain rains") Europe: Hung. *Esik az eső*. ("Rains the rain") Mari (Uralic) *Jür jüreš* ("Rain rains") Mari (Uralic) *Lum lumeš* ("Snow snows") Udmurt (Uralic) *Zor zore* ("Rain rains") Africa: Amharic (Semitic) *Zənab yə-zänbal*. ("Rain is raining")	N + "weak" V: **I. Indo-European Languages:** Lat. *Ventus spirat*. Germ. *Die Sonne scheint*. Engl. *The sun is shining*. Swedish *Solen skiner*. Rus. *Idjot dožd'* (lit. "Goes rain") Rus. *Idjot sneg* (lit. "Goes snow") Czech *Slunce svítí*. (lit. "Sun shines") **II. Non-Indo-European Languages:** Asia: Turk. *Şimşek çakıyor*. (lit. "Lightning is striking") Chin. *Xià yǔ* le. (lit. "Fall rain already" = "Rain is falling") Chin. *Xià xuě le*. (lit. "Fall snow already" = "Snow is falling") Kor. *Bi-ga onda*. / *Bi-ga ogoissda*. *Bi-ga naerinda*. / *Bi-ga naerigoissda*. (lit. "Rain comes / is coming" / "Rain falls / is falling") Kor. *Nun-i onda*. / *Nun-i ogoissda*. *Nun-i naerinda* / *Nun-i naerigoissda*. ("Snow comes / is coming"; "Snow falls / is falling") Africa: Somali (Cushitic) *Dabaysha baa socota* (lit. "The wind walks" = "The wind blows") Kabyle (Berber) *Te-kkat lehwa* (lit. "Is hitting rain" = "Rain is hitting") Kabyle (Berber) *D ageffur*. (lit. "Is/was rain" = "It's raining")

unspecific verbs which are not restricted to meteorological phenomena—Turk. *kararmak* "getting black"; Engl. *fall*. Therefore, they need a "meteo-specific" noun (Turk. *gün* "day," Engl. *dusk*).

In a similar way, it seems to be "more natural" that you can say *Die Sonne scheint* ("The sun is shining") in German, but not (at least not in a meteorological sense) *Es scheint* ("*It's shining*"), because the sun is a clearly delimited entity. The same holds true for Czech *Slunce svítí* ("The sun is shining"). These syntactic patterns thus seem to be more "naturally" situated at the entity pole.

To keep the description as short and simple as possible, we refrain from giving detailed morpho-syntactic glosses. However, whenever the language-specific structures deviate considerably from languages such as English, French, Latin, or German, we provide literal translations, sometimes also accompanied by a free translation. When the languages are less known, we also provide information about their genetic affiliation (cf. Hill et al. 1998, 868; van Valin and La Polla 1997, 27; Malchukov and Ogawa 2011, 25-26; Mettouchi and Tosco 2011, 311; 314, Salo 2011, 400-01; 405-26; Eriksen et al. 2015, 210; 214; 221).

Finally, we would like to add the remark that the intermediate area could be plausibly split into even more than two sections, with the "Pro + V" construction closer to the phenomenon pole and the "N + cognate V" construction closer to the entity pole, and further empirical investigation might lead to the necessity of the introduction of still further sections within the continuum of the Meteo Scale.

In the following sections, German and Korean syntactic patterns will be briefly described in general (the 3rd section). After that, we will focus on those sentence patterns which are characteristic for German and Korean weather verbs in greater detail (cf. the 4th section).

Sentence Patterns in German and Korean

The set of sentences which can be formulated correctly in a language is infinite because of the recursive character of many rules of syntax, as Chomsky (1965, 15) has famously shown. However, as has also been shown, especially by modern dependency grammar as developed by Tesnière (1966), the infinite

number of correctly formed sentences in a language can be reduced to a finite number—of a few dozens—of sentence patterns of a language (also called: basic sentences, syntactic patterns, kernel sentences). Specific sentences are formed according to these patterns. Within dependency grammar, sentence patterns are syntactic structures consisting solely of the (n-placed) predicate and the arguments/complements required by the valency of the—verbal—predicate. Optional constituents, which are not required by the valency of the predicate, such as satellites/adjuncts/disjuncts, or the optional determiners and modifiers in noun phrases, are not part of sentence patterns in this sense.

In this way, sentence patterns are an example for Humboldt's (1963, 477) brilliant intuition that human language must make an infinite use of finite means—"von endlichen Mitteln einen unendlichen Gebrauch." Such sentence patterns have been more or less systematically described in the modern reference grammars of many languages, especially those operating within the framework of modern dependency grammar, but also in studies based on differing theoretical frameworks, for example, functional approaches. The latter are, at the same time, often verb-centred approaches integrating the concept of valency (cf. e.g. Dik 1997; Pinkster 2015).

Especially modern German has been a focus of research in this respect, due to the strong impact of Tesnière's dependency grammar on German linguistics (cf. e.g. Heringer 1973, 1996; Engel and Schumacher 1978; Erben 1980; Bondzio 1980; Engel 1988, 2004; Helbig and Buscha 1991; Ágel 2000; Schumacher et al. 2004; Wermke et al. 2005; Kienpointner 2010; Welke 2011).

Sentence patterns in the non-Indo-European languages, Turkish and Japanese, have been treated by Ogawa et al. (2014) on the basis of a dependency approach. What is important for this paper, i.e. a contrastive sketch of German and Korean grammar and a list of Korean sentence patterns established on the basis of valency/dependency grammar can already be found in Lie (2001, 468f). Mel'čuk (1988), apart from Russian and other Indo-European languages, also treats dependency patterns in many non-Indo-European languages (e.g. Dyirbal—Pama-Nyungan). Ágel (2000, 2015) and Ágel/Fischer (2010) apply the theory of valency and dependency not only to German and other Indo-European languages, but also to non-Indo-European languages such as Hungarian. Most impressively, an overview describing a variety of valency classes in 30 languages from several continents is given in the contributions to Malchukov/Comrie (2015).

There are also—partial—treatments of sentence patterns in a number of reference grammars which are not based on dependency grammar (for German, cf. Zifonun et al. 1997, 1073ff, 1323ff; for English, cf. Quirk et al. 1985, 53ff; Carter and McCarthy 2006, 490ff; for French, cf. Riegel et al. 2009, 211ff; for Latin, cf. Pinkster 1988, 1990, 2015; for Turkish, cf. Göksel and Kerslake 2005, 119ff). Therefore, the concept of sentence patterns can be seen as a generally important background for the contrastive description of language-specific syntactic patterns. A starting point which seems to be used by the mainstream of modern linguistics.

More specifically, sentence patterns are a necessary theoretical concept for comparing syntactical constructions such as weather verbs in German and Korean, because any attempt to provide a comprehensive overview of all sentences or utterances whatsoever, which express weather phenomena in the two languages, would be futile. This is a fact simply because there are no finite limits to the set of weather expressions if you also try to take satellites and modifiers into account, which can be infinitely added to sentence patterns. In order to establish lists of sentence patterns, however, you have to solve the difficult problem of neatly distinguishing between arguments and satellites. Now the perhaps most fundamental problem of dependency grammar arises precisely from the enormous difficulties of neatly distinguishing arguments and satellites.

However, with the help of a series of syntactic tests (e.g. deletion, substitution, insertion, permutation, and some types of more complex transformation tests such as the predication test, cf. below) one can normally draw a relatively clear line between arguments and satellites. This justifies the basic dichotomy of arguments and satellites as verb-dependent syntactic constituents and makes the establishment of lists of sentence patterns possible in the first place. However, not all types of arguments and satellites fulfil criteria for this distinction in the same way, which suggests to refrain from conceiving this basic dichotomy as a very strict one. A general multi-layered sentence model with more or less "*central*" arguments and more or less "*peripheral*" satellites seems to be more realistic (cf. Ágel 2000, 172).

The various sentence patterns of a language derive from the valency of the—verbal—predicate. "Valency" can be defined according to Ágel (2000, 57) as the totality of the formal and functional government properties of verbs, adjectives, and nouns. Thus, sentence patterns can be distinguished

according to the quantitative valency of the predicate—that is, the number of the arguments required, which ranges from zero-place predicates to four-place predicates in most languages; cf. also Dik 1997 1:79—and according to the qualitative valency—that is, the specific morphological and syntactic properties of the constituents which function as arguments. Furthermore, the criterion of omissibility allows one to distinguish obligatory arguments, which cannot be left out without making the sentence ungrammatical, and optional arguments, which can be left out, but nevertheless belong to the predicate frame of verbs, adjectives, and nouns. Of course, this raises the question of how to distinguish optional arguments from satellites. This can be answered by using predication tests (cf. below).

Moreover, sentence patterns can be subcategorized according to syntactic valency—the morpho-syntactic properties of the arguments, as mentioned above—and semantic valency—the semantic properties of the arguments, more specifically, their semantic roles, such as agent, patient, recipient, beneficiary, instrument, source, goal, etc. Finally, apart from verb valency you can also consider the valency of adjectives and nouns. As nouns normally only have optional "arguments," which are a subset of their modifiers, they will be neglected in the following treatment of German and Korean sentence patterns.

Depending on the application of all or some of the criteria of sub-categorization mentioned above one can derive the differing numbers of sentence patterns of a language (from half a dozen to several hundreds of sentence patterns).

Due to limits of space, only a small selection—approximately a dozen—of the most important sentence patterns of German and Korean will be presented in the following analysis, with a strong focus on verb valency. This brief contrastive presentation will form the background for the more detailed description of sentence patterns containing German and Korean weather verbs. This analysis will be focussed on the sentence patterns which are basic and constitutive for the use of weather verbs—mostly impersonal weather expressions. Apart from some parallels, these patterns also manifest clear contrasts in both languages. They are thus especially instructive for central issues of language typology, contrastive linguistics, and language teaching.

Furthermore, the question of the formulation of some implicational universals concerning the linguistic expressions referring to weather phenomena can be briefly addressed (cf. the 5th section, below).

As far as the number of types of arguments (= A) are concerned, we assume that seven types of A have to be distinguished in German. The first four of them are differentiated by case only: Anom = nominative argument, that is, the subject; Aacc = accusative argument, that is, the direct object; Adat = dative argument, that is, the indirect object; and Agen = genitive argument, which has become very rare in contemporary German. Moreover, there are prepositional objects (Aprep), adverbial objects (Aadv), and predicative arguments (Apred), that is, subject complements and object complements.

These distinctions allow a classification of arguments with the help of clear morphosyntactic criteria: The first four types are demarcated by pure case. The prepositional arguments are PPs which can normally be combined with only one specific preposition—for example, *Sie denken an Platon* ("They are thinking of Plato"): **Sie denken aus Platon* ("*They are thinking out of Plato"). The adverbial arguments, different from adverbial adjuncts (that is, satellites), are required by the valency of the predicate. However, different from prepositional arguments, they can be combined with a variety of different prepositions: *Sie sitzen im Auto/innerhalb des Hauses/neben dem Fluss/unter dem Baum* ("They are sitting in the car/inside the house/beside the river/under the tree"). Predicative arguments (subject complements, object complements) have variable case (in German: nominative, accusative) and show an explicit or explicable predicative relation to the subject or direct object of the sentence. Take, for example, [NPNOM *Sokrates*] *ist weise* ("Socrates is wise") vs. *Ich nenne Socrates* [NPACC *einen weisen Menschen*] ("I call Socrates a wise man") vs. *Nach meiner Meinung ist Sokrates ein weiser Mensch* ("According to me, Socrates is a wise man").

The fact that both optional arguments and satellites can be deleted raises a problem for the general distinction between arguments and satellites, which is crucial for dependency grammar. However, there are transformational tests ("predication tests"), which can solve this problem, at least, most of the time (cf. Happ 1976, 401ff; Pinkster 1988, 15-17). The distinction between optional arguments and satellites/modifiers, which are optional by definition, can be established by the following predication test: you take the constituent which is to be tested, omit it, add a new sentence introduced by *and*, then refer back to the state of affairs of the first sentence with the help of the anaphoric pronoun *that* and the insertion of very general, semantically abstract action/process/state verbs such as *make/do/become/be*. If the constituent has been extracted and the newly established conjoined sentence is a grammatically correct sentence, the

extracted constituent is a satellite. If the complex sentence is ungrammatical, however, the extracted constituent is an optional argument. For example, Let *Mary is reading a book in the library* be the original sentence. Performing the predication test, you get the following results:

18. *Mary is reading a book and she does that in a library.*
19. **Mary is reading in the library and she does that a book.*

In Korean, similar to German, types of arguments can be distinguished on the basis of their syntactic function and morpho-syntactic expression. Differences between the two languages have to do with typological facts, such as: Korean is an agglutinative language, which means that the distinction between stem and ending is more clear-cut than in German fusional morphology (cf. Campbell 1991, 751f; Han 2006, 21f). Moreover, as far as word order typology is concerned, Korean is an SOV-language, where the verb is located at the end of the clause/sentence (cf. Kim 1987, 893f; Ko and Ku 2009, 16f). German, however, belongs to the languages with two basic orders, which are SVO in main clauses, SOV in subordinate clauses in the case of German (cf. Engel 1988, 303ff; Haarmann 2004, 9f; Dryer 2005, 331). Furthermore, different from German, Korean is a language that uses postponed morphemes which indicate the grammatical and semantic relationships of verbs and arguments within a clause/sentence, very much in the same way as cases and prepositions function in German.

Therefore, different from German, where prepositions and articles are located in front of the noun, Korean cases/postpositions[2] are located after the noun (cf. Ko and Ku 2009, 14f). Korean postpositions, similar to German cases and prepositions, indicate the syntactic and semantic relationship with the predicate of the sentence. According to their functions, Korean postpositions can be roughly divided into thirteen syntactically and semantically different categories, which mark the following types of arguments[3]: Anom

2. Given the limits of space, we cannot deal with the highly controversial question of how to define and categorize what has been variably called Korean "cases," "postpositions," or "particles." In the following, we will simply prefer the use of "postposition." We use the hyphen ("-") to separate allomorphic variants of postpositions.
3. We here can focus only on the most important and most frequently used argument types in Korean syntax.

(subject; indicated by the allomorphic variants *-ga* [after vowels] and *-i* [after consonants]); Atop[4]—a topical postposition—(*neun/-eun*); Agen (*-ui*)[5] does not exist in Korean; Adat (*-ege*); Aacc (*-eul/-reul*); there is no direct equivalent "Apostp" (that is, postpositional arguments with separate postpositions as independent words) which roughly corresponds to Aprep in English or German, apart from exceptional Korean sentence patterns with *e*(*daehe*)[6] (cf. Brochlos 2017, 79; Han 2006, 42-43)—cf. e.g. below, Figure 2; Apred (-Ø for subject complements, *-euro/-ro* and *-irago/-rago* for different types of object complements). Furthermore, there are a number of adverbial arguments, standing for place or location (Aloc: *-e/-eseo*), origin (Aabl = ablative A: *-eseo*), direction (Adir: *-e*), instrument (Ainstr = Apred: *-euro/-ro*), cause (Acaus: -e/-ro) (cf. Han 2006, 402f), accompaniment (Acom: indicated by the allomorphic variants *-gwa* [after vowels] and *-wa* [after consonants]—in the spoken language—*hago*), and quotative argument (Aquot: *-irago/-rago*). Thus we distinguish 13 types of arguments, different from Lie (2001, 465), who has 15 categories, mainly because of Lie's finer distinction of subtypes of Apred ("Qualitativergänzung") and Aadv, such as final arguments ("Finalergänzung"; cf. Lie 2001, 466; cf. also the distinctions in Lim 2004, 110ff, who does not, however, systematically distinguish arguments and satellites).

Some of the different postpositions—subject postposition, topical postposition, direct object postposition, some of the adverbial arguments—display phonetic changes—which create allomorphs—according to whether the final sound of the noun is a consonant or a vowel (cf. Anom: *-ga/-i*; Atop:

4. The specific nature of Atop would require a much more extensive discussion and also an extension of the concept of valency, which we cannot provide within the limits of this paper. The label "Atop" stresses its mixed character as a syntactic category, as well as a pragmatic category of information structure and its difference from Anom. In most cases, Atop is more a matter of the information structure than the syntactic structure.
5. The genitive postposition *-ui* indicates possession and connects two nouns together to express belonging. Regardless of the name, this postposition is placed between the two nouns that belong together. In the spoken language, *-ui* is often omitted, as long as the meaning can be clearly understood from the context.
6. The original text is as follows: "Diese Postposition ist eine von den deverbalen Postpositionen, die von Verben abgeleiteten lexikalischen Einheiten, die wie Postpositionen fungieren und damit meist deutschen, bzw. englischen Präpositionen entsprechen, weshalb sie aus konfrontativer Sicht sehr wichtig sind" [This postposition is one of the deverbal postpositions, in which the lexical units derived from verbs that act like postpositions and thus mostly correspond to German or English prepositions, which is why they are very important from a confrontational point of view] (Brochlos 2017, 79).

-neun/-eun; Aacc: *-reul/-eul*; Ainst: *-euro/-ro*; Aquot: *-irago/-ro*; Acom: *-gwa/wa*). The other categories do not have this phonetic alternation. If these categories have formal variants, too, they are chosen in relation to differing syntactic and semantic functions.

As far as subject-positions are concerned, another subject position, that is, a topical postposition (Atop) has to be distinguished, which is marked by the thematic particle *-neun/eun*. This "topical postposition" has no direct equivalent in German, and is characterized with the help of a topic marker which establishes the noun as the theme of the clause/sentence (cf. Lee and Lim 1988, 165f; Han 2006, 422f). Hence, the postposition *-neun/-eun* does not only simply mark the subject, but also includes supplementary semantic explanation. Especially when the subject postposition Anom is used together with nominal predicates—predicative nouns or adjectives—it can seem as if there are double subjects in Korean. For example, in the sentence *Geuneyo-neun chingu-ga issda* (lit. "As to her, friends exist," that is, "As far as she is concerned, she has friends"), the "topical postposition" is providing a supplementary explanation about the "subject."

In the following, we would like to illustrate this typology with a short selection of approximately one dozen of the important sentence patterns in Korean and German. Their relative importance is tentatively defined here by their outstanding frequency and communicative indispensability. Two-place verbal predicates, especially those with subject and direct object, are especially remarkable in this respect (cf. the statistical evidence provided for German by Drosdowski 1984, 634 and for Latin by Happ 1976, 474; Pinkster 2015, 81). Due to limits of space we have mostly chosen examples where the different types of arguments are represented with sentences containing either simple noun phrases or prepositional/postpositional phrases with nominal or pronominal heads. Moreover, we usually leave out satellites and modifiers in our illustrative examples, apart from cases where these optional constituents are necessary for understanding.

Furthermore, we mostly restrict ourselves to verbal predicates (= VerbP), and give only few examples for adjectival predicates. In German, adjectival predicates (= AdjP) establish a hierarchy of valency, being syntactically dependent of the auxiliary verb (= AuxV) and governing semantically one or two arguments (= A; often A is a noun phrase [NP] or a prepositional phrase [PP]).

One German example of such a hierarchy of valency with the auxiliary verb *sein* ("be") + an adjectival predicate (= AdjP) is classified as pattern 12 below (cf. the selection of German sentence patterns). As we shall demonstrate, some weather expressions in German and Korean function within such "adjectival" sentence patterns. For German and English, this hierarchy of valency can be visually represented for sentences such as *Sie hat viele Freunde/She has many friends; Sie ist mit kontrastiver Linguistik vertraut/She is familiar with contrastive linguistics* by the following dependency trees, called "stemma(ta)" by Tesnière (1966, 15; Mod = modifier):

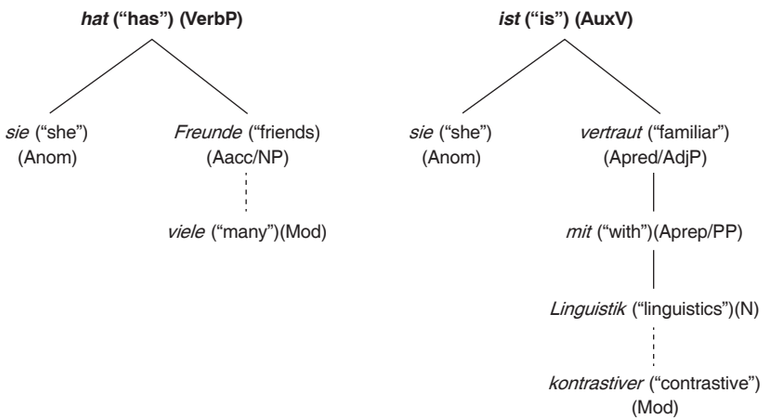

Figure 1. (source: authors)

With the exception of German causative constructions, where the complex predicate formed by the causative auxiliary verb *lassen* ("let") plus a full verb in the infinitive can require four arguments, the assumption of four-valued or even higher-valued verbs is always problematic. It is uncertain whether all dependent arguments of these many-valued verbs are indeed arguments, that is, are indeed required by the valency of the verb (cf. Ágel 2015, 68 on a typology of "dynamic" elaborations of basic "static" valency structures, which sometimes are at the same time creative extensions of these basic valency structures). Therefore, we refrain from giving examples of sentence patterns with potentially four- or five-valued verbs.

A Selection of 12 Important Sentence Patterns of German:

1. [Anom *Es*] *regnet*/[Anom *Die Veilchen*] blühen. VerbP [Anom]
   ("It's raining"/"The violets are blooming")
2. [Anom Sie] *hat* [Aacc *viele* Freunde]. VerbP [Anom][Aacc]
   ("She has many friends")
3. [Anom *Das Buch*] *gehört* [Adat *der Wissenschaftlerin*]. VerbP [Anom][Adat]
   ("The book belongs to the woman scholar")
4. [Anom *Er*] *denkt* [Aprep *an sein Ziel*]. VerbP [Anom][Aprep]
   ("He is thinking about his goal")
5. [Anom *Der Kristall*] *liegt* [Aadv *in der Schale*]. VerbP [Anom][Aadv]
   ("The crystal is lying in the bowl")
6. [Anom *Herbert*] *ist* [Apred *mein Freund*]. AuxV [Anom][Apred]
   ("Herbert is my friend")
7. [Anom *Das Abendrot*] *ist* [*Apred atemberaubend*]. AuxV [Anom][Apred]
   ("The sunset (glow) is breathtaking")
8. [Anom *Sie*] *schenkt* [Adat *ihr*] [Aacc *einen Computer*].
   VerbP [Anom][Aacc][Adat]
   ("She gave her a computer")
9. [Anom *Er*] *verriet* [Aacc *ihn*] [Aprep *an die Feinde*].
   VerbP [Anom][Aacc][Aprep]
   ("He betrays him to the enemies")
10. [Anom *Sie*] *legt* [Aacc *ihr Diplom*] [Aadv *auf den Tisch*].
    VerbP [Anom][Aacc][Aadv]
    ("She lays her diploma on the table")
11. [Anom *Sie*] *wählten* [Aacc *sie*] [Apred *zur Vorsitzenden*].
    VerbP [Anom][Aacc][Apred]
    ("They elected her president")
12. [Anom *Vera*] *ist* [Apred *frei*] [Aprep *von Furcht*]
    AuxV + AdjP[Anom][Apred][Aprep]
    ("Vera is free from fear")

A Selection of 15 Important Sentence Patterns of Korean:

1. [*Nalssi-ga*] *Chupda*. / [*Nalssi-ga*] *Deopda*. AdjP [optAnom][7]
   (lit. "cold-DECL[8]"/"hot-DECL," that is, "It's cold/freezing"/"It's hot")

7. The precise syntactic status of the optional Anom is a controversial issue. In our view, so far there are no conclusive arguments concerning this status. Of course, this issue is in need of further investigation.
8. DECL = a declarative particle, which is attached as an ending to the predicative adjective. One word sentences with predicative adjective + *da* still imply an optional Anom (cf. *Nalssi-ga*), which is put between brackets to indicate its omissibility. As far as the omission of subjects in Korean is concerned, according to a study by Park Cheong-Hee (2013, 40), which we quote quoted after Koo (2019, 17f.), the percentage of omitted subjects in Korean sentences is 68.79%.

2. [Anom *Bi-ga*] *onda* [Anom *Ai-ga*] *nonda*. VerbP [Anom]
   (lit. "Rain comes"/"Child plays," that is, "It's raining"/"The child is playing")
3. [Anom *Geu-ga*] [Acc *mokjeog-eul*] *saenggakhanda*.[9] VerbP [Anom][Aacc]
   ("He is thinking about his goal")
4. [Anom *Abeoji-ga*] [Aacc *nektai-reul*] *maenda*. VerbP [Anom][Aacc]
   (lit. "Father tie ties," that is, "The father ties the tie")
5. [Anom *Na-neun*] [Adat *geu-ege*] *butakhanda*. VerbP [Anom][Adat]
   (lit. "I ask to him," that is, "I ask him")
6. [Anom/Atop *Eomma-ga/-neun*] [Adat *ai-ege*] [Aacc *mul-eul*] *junda*.
   VerbP [Anom/Atop][Adat][Aacc]
   (lit. "Mother the child the water gives," that is, "The mother gives the child the water")
7. [Anom *Dongryo-ga*] [Adir *jib-e*] *ganda*. VerbP [Anom][Adir]
   (lit. "colleague home-to goes," that is, "The colleague is going home")
8. [Anom *Ai-ga*] [Aloc *Seoul-eseo/-e*] *sanda*. VerbP [Anom][Alok1/Alok2]
   [lit. "child Seoul-in lives," that is, "The child lives in Seoul)
9. [Anom *Ai-ga*] [Aabl *hakgyo-eseo*] *onda*. VerbP [Anom][Aabl]
   (lit. "child school-from comes," that is, "The child is coming from the school")[10]
10. [Anom *Minsu-ga/-neun*] [Aacc/com *eomeoni-reul/-wa*] *mannanda*.
    VerbP [Anom][Aacc/Acom]
    (lit. "Minsu mother-with meets," that is: "Minsu is meeting his mother")[11]
11. [Anom/Atop *Geudeul-i/-eun*] [Aacc *geunyeo-reul*] [Apred *wiwonjang-euro*] *Ppobassda*. VerbP [Anom/Atop][Aacc][Apred]
    (lit. "They her chairman-as chose": "They chose her as chairman")
12. [Atop/Anom *Na-neun/Ne-ga*] [Aacc *Sokrates-reul*] Apred *jihyeja-rago*] *bureunda*. VerbP [Atop/Anom][Aacc][Apred]
    (lit. "I Socrates wise man-quot call": "I call Socrates a wise man")

9. Quite often, prepositional objects in English and German (in sentences following pattern 4. in the German list) are replaced by sentences with direct objects constructed according to pattern 3 in the Korean list, e.g. [Atop/Anom *Geu-neun/ga*] [Aacc *mokjeog-eul*] *saenggakhanda* (lit. "He goal thinks": "He thinks of his goal"); cf. German: *Er denkt ans Ziel*.
10. Although Aabl *hakgyo-eseo* can be omitted (as the deletion test shows) and the predication test cannot clearly establish it as an argument either, according to native speaker intuition, *hakgyo-eseo* is required by the valency of the verbal predicate *onda*. Hence, it is an optional argument.
11. Note that here again, Korean syntax allows an alternative pattern with a direct object (Aacc); in this case, however, a semantically slightly different transitive pattern is available in English and German, too: *Minsu meets* [Aacc *her mother*] / *Minsu trifft* [Aacc *ihre Mutter*].

13. [Atop/Anom *Noeul-eun/-i*] *areumdapda*. AdjP [Atop/Anom]
    (lit. "Afterglow breathtaking-DECL": "The afterglow is breathtaking")
14. [Atop/Anom *Minsu-ga/-neun*] *haksaengida*. CopP [Atop/Anom][Apred]
    (lit. "Minsu student-DECL," that is, "Minsu is a student"]
15. [Atop *Geunyeo-neun*] [Anom *chingu-ga*] *issda*. VerbP [Atop][Anom]
    (lit. "As to her, friends exist," that is, "She has friends")

In the following, we would like to provide some explanatory remarks concerning the lists of sentence patterns given above. Due to lack of space, we restrict these remarks mostly on patterns within which weather expressions occur. As in German, Korean verbs require the morphological marking of their arguments. Apart from the obvious morphological contrast that Korean normally uses postpositions for marking arguments, whereas German usually has case suffixes and prepositions, many Korean sentence patterns are syntactically constructed in a similar way to German sentence patterns. However, there are also other clear contrasts and differences, some of which will be discussed below. A further general contrast concerns the fact that in German there is a stricter correlation between the valency of the predicate (the verb) and the form of the arguments—their case; the respective preposition with a certain case—than is the case with postpositions in Korean. Moreover, as long as the predicate is located at the end of the sentence, the order of the remaining sentence constituents—subject, direct object, adverbial phrase, etc.—is relatively free in Korean. In this case, the relationship between the constituents is either marked by postpositions or by the meaning of the lexical units in the sentence.

The following generalization holds for any language: While there are complete sentences where all of the constituents of the sentence are present, there are also shorter sentences where some of the constituents remain implicit. But in Korean, not only in colloquial but also in literary style postpositions marking the subject, the direct object, the indirect object etc., can easily be omitted, given the appropriate verbal and situational contexts. Even the subject itself can be omitted if it is the unchanged theme of an ongoing conversation. Therefore, Korean has been said to be "a set of inflected words," which is why it is also called an "event-oriented language" and "conversation-oriented language," which differs from "syntactically-oriented languages" such as German or English. In this respect, Korean is closer to Latin than to German or English (on the far-reaching omissibility of the subject and other arguments in Latin and Korean cf. Kienpointner 2010, 351ff; Ko and Ku 2009, 19f).

What is more, in Korean nominal sentences, different from German, adjectives can function as a predicate without the support of a copular/auxiliary verb. Some nominal sentences involve weather expressions. This can be illustrated by the sentence [Atop/Anom *noeul-eun/-i*] *areumdapda* (lit. "Afterglow breathtaking-DECL," that is, "The afterglow is breathtaking") (cf. pattern 7 in the German list and pattern 13 in the Korean list).

The Korean predicative adjective is called "adjective verb" or "status verb" and is interpreted as "(Somebody/something) is something." The adjective verb describes a status or a property of the subject of the nominal sentence. However, different from action verbs, adjective verbs cannot always be used as imperatives or requests.[12]

In Korean, the expression most directly corresponding to the English or German auxiliary verbs *be/sein* is *ida*. Unlike English *be* and German *sein*, it is a copula always used with a noun (CopP = copular phrase), and placed after this noun, which is an Apred. Typically, this Apred is used without a postposition (cf. the Korean pattern 14: Atop/Anom *Minsu-neun/ga*] *haksaengida*. (lit. "Minsu student-DECL," that is, "Minsu is a student"). The Korean pattern 14 corresponds to pattern 6 in the German list. While in German, the copula *sein* can also fulfil the function of being situated/located, there is a separate auxiliary verb *issda* in Korean. This existential verb can also replace the function of the transitive possessive verb *haben* in German. However, as an existential verb, it is not a transitive, two-place verb such as German haben, but instead has the meaning of existential constructions, such as German *Es gibt*/English *There is* (cf. the Korean pattern 15).

The dependency structure of Korean nominal sentences can be reconstructed as shown above in Figure 2, with remarkable contrasts between Korean and the corresponding German dependency structure (cf. also Figure 1 above).

A further contrast has to be mentioned again: According to the situation of the conversation, the Korean subject *geunyeo-neun* ("she") can be omitted. In

12. "The adjective usage has some things in common with the verb usage, but they differ in some ways: Combinations with *–eora/–ara* which represent commands *-ja* that represent petitions are not always possible with adjectives" (c.f. Ko and Ku 2009, 106f). They also cannot be used in the -nda-form (cf. https://ratsgo.github.io/korean%20linguistics/2017/05/09/verb/).

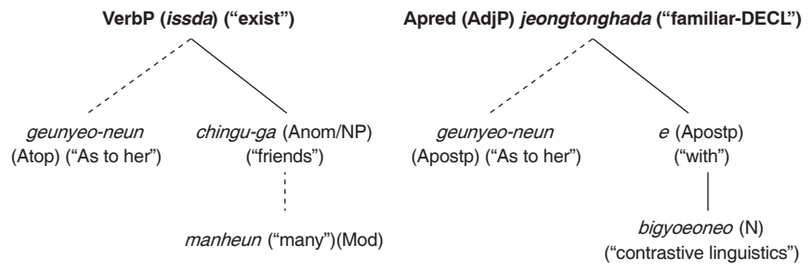

Figure 2. (source: authors)

German, however, a subject pronoun such as *sie* ("she") in *Sie hat viele Freunde* ("She has many friends") is a syntactically obligatory element and cannot be omitted. This is expressed in the dependency trees in Figure 2 by the broken lines.

Weather Expressions in German and Korean

Weather Expressions in German

In this (4th) section, we wish to analyse and discuss a selection of about two dozen basic German and Korean weather expressions. They will also be assigned to some of the commonly used sentence patterns of German and Korean listed above in the 3rd section.

In German, they mostly either belong to pattern 1, that is, VerbP [Anom] (= one place verbal predicate + subject argument in the nominative case) or to variants of pattern 12, that is, AuxV + AdjP [Anom] (= auxiliary verb + one place adjectival predicate + subject argument in the nominative). Occasionally, however, marked patterns with two valued verbal predicates occur, for example, *Der Regen trommelt aufs Dach* ("The rain is patterning on the roof")/*Der Blitz schlägt ins Haus ein* ("The lightning hits/strikes the house") (cf. pattern 4 in the list of German sentence patterns presented above). This selection cannot claim to be exhaustive, but it can be assumed to be reasonably representative. For German, therefore, we would like to take a closer look at the following 25 sentences (for the comparison with Korean, the unmarked sentences mentioned first in the list will be primarily dealt with; their more or less marked

counterparts—listed after the slash—will be only occasionally taken into account):

1. *Es regnet* ("It's raining") / (Der) *Regen fällt* ("Rain is falling").
2. *Es schüttet* / *Es gießt* ("It's pouring with rain").
3. *Es nieselt* ("It's drizzling").
4. *Es schneit* ("It's snowing.") / *Schnee fällt* ("Snow is falling").
5. *Es taut* / Der Tau fällt ("The ice/The snow is thawing") / *Es friert* ("It's freezing").
6. *Es hagelt* ("It's hailing.") / *Der Hagel prasselt nieder* ("Hail is pattering down").
7. *Es donnert* ("It's thunder"/ There's thunder) / *Der Donner grollt* ("Thunder is rolling/rumbling").
8. *Es blitzt* ("It's lightning!"/ "There's lightning") / *Der Blitz schlägt ein* ("The lightning is striking").
9. *Es wetterleuchtet* ("There is sheet lightning").
10. *Der Wind weht* ("The wind is blowing").
11. *Es stürmt* ("It's storming") / *Ein Sturm erhebt sich/bricht los* ("A storm is rising") / *Der Sturm tobt* ("The storm is raging") / *Der Sturm legt sich* ("The storm is passing").
12. *Es klart auf* / *Der Himmel klart auf* ("It's clearing up").
13. *Der Himmel bewölkt sich* / *Es bewölkt sich* ("The sky is getting cloudy / It's getting cloudy").
14. *Es ist wolkig* / *bedeckt* ("It's cloudy/overcast").
15. *Es ist diesig* ("It's hazy").
16. *Es ist heiter bis wolkig* ("It is clear to cloudy")
17. *Es ist sonnig* ("It's sunny").
18. *Die Sonne scheint* ("The sun is shining").
19. *Die Sonne geht auf* ("The sun is coming up/rising") / *Die Sonne geht unter* ("The sun is setting/going down").
20. *Der Mond scheint* ("The moon is shining").
21. *Es dämmert* ("Dusk is falling" / "Dawn is breaking").
22. *Es wird dunkel* ("It's getting dark") / *Der Abend dämmert* ("Dusk is falling").
23. *Es wird hell* ("It's getting light") / *Der Morgen graut* ("Dawn is breaking").
24. *Das Wetter ist schön* ("The weather is good").
25. *Das Wetter ist schlecht* ("The weather is bad").

Looking at these examples, you can easily recognize the general tendency of German sentence patterns concerning weather phenomena: they are

usually portrayed with meteorological verbs and the neuter pronoun *es* (cf. 1 to 12 and 21 in the list of weather expressions presented above, with the notable exception of 10): *es* (Anom) + VerbP. Another important pattern is *es* (Anom) + AuxV + AdjP (cf. examples 14 to 17). Most of the time, however, you also have more or less marked alternatives with nouns: N (Anom) + VerbP. So apart from the standard type with *es* + full verb (cf. e.g. *Es regnet / schneit / donnert / blitzt / hagelt / taut / dämmert*) and es or nouns with auxiliary verb *sein* ("be") + predicative adjective (cf. e.g. *Es ist sonni g/ Das Wetter ist schön / Das Wetter ist schlecht*) there are also full verbs with nouns (cf. e.g. *Die Sonne scheint / Regen fällt / Schnee fällt / Der Donner grollt*), prefix verbs with *es* or nouns as Anom (z.B. *Es klart auf / Der Blitz schlägt ein / Der Hagel prasselt nieder / Ein Sturm bricht los*) and reflexive verbs with nouns (e.g. *Der Sturm erhebt sich / Der Himmel bewölkt sich*).

What then is the syntactic and semantic status of German *es*? There is a longstanding controversial debate concerning this vexing problem, also as far as English *it*, French *il*, Dutch het and similar neuter pronominal subjects in other Indo-European languages are concerned. The differing points of view can be grouped among the following three classes:

1) The older/traditional view assumes that these weather expressions with neuter pronouns (in German: "Witterungsimpersonalia") are the morpho-syntactic manifestation of originally religious concepts (that is, gods causing the weather phenomena) (cf. Grimm and Grimm 1862, 1112; Havers 1931, 100; cf. similarly Spitzer 1928, 201ff. on French *Il pleut* ["It's raining"]).

2) Another, rather widespread assumption considers es as the formal subject of weather verbs, that is, as a syntactically obligatory Anom of one place verbs, which does not, however, have a semantic role or function (cf. Erben 1972, 251; Eisenberg 1994, 146; 193; 278; Hentschel and Weydt 1994, 324f; Eroms 2000, 190; Heringer 2001, 85; Wellmann 2008, 198).

3) Finally, many other scholars assume that *es* does not even have the status of a syntactic argument (cf. Engel and Schumacher 1978, 237; 246; Engel 1988, 190; 201; Engel 2004, 105f; Helbig and Buscha 1991, 624f; Helbig and Schenkel 1991, 445; Schumacher et al. 2004, 602; 641). This position is supported with the following two arguments: (1) *es* cannot be freely substituted, thus being only a "quasi-argument"; and (2) weather verbs only give overall characterizations ("pauschale Charakterisierungen") of a process, where no entity is denominated (Zifonun et al. 1997, 713; 1079). Hence, weather verbs are described as zero-valued verbs without real arguments. The third position has already been defended by Tesnière (1966, 239), who describes weather verbs as zero place predicates, even if they require obligatory pronominal subjects, as they do in French, German, English, and Dutch (cf. *Il pleut / Es regnet / It's raining / Het regent*). This position is also maintained in more recent literature on meteorological verbs (cf. Lambert 1997, 301; Siller-Runggaldier 2004, 238; Cennamo 2015, 425).

Notwithstanding these strong empirical arguments, we consider a further, fourth position as the most plausible one, where the pronominal subjects of weather verbs are assigned both a syntactic function (Anom) and a semantic role/function (Processed or Force). This perspective can be supported by some empirical evidence, which is not conclusive, but shows that this fourth position at least has some plausibility.

In several editions of the DUDEN grammar, a well-known reference grammar of German (cf. Drosdowski 1984, 555; 573; Wermke et al. 2005, 412f; 831), and in the text grammar of German by Weinrich (1993, 403), the following empirical arguments are presented in favour of a syntactic and semantic function of es + weather verbs (cf. also the distributional evidence given by Levin 2017, 5):

1) *es* as the subject of weather verbs can be moved, just like other syntactic constituents (cf. *Es regnet wieder* ["It's raining again"]: *Jetzt regnet es wieder* [lit. "*Now rains it again," that is, "Now it's raining again"]).

2) *es* + VerbP/AuxV + AdjP can be replaced with semantically synonymous constructions with N + VerbP, for example *Es regnet* ("It's raining") vs. *Regen fällt* ("Rain is falling") or *Es hagelt* ("It's hailing") vs. *Hagel prasselt nieder* ("Hail is pattering down") or *Es ist sonnig* ("It's sunny") vs. *Die Sonne scheint* ("The sun is shining"). Thus, *es* + VerbP is part of a paradigm of semantically similar constructions, for example, N + VerbP (cf. also *Es stürmt* ("It's storming") and *Der Wind weht* ("The wind is blowing"; cf. Lehmann 1991, 193).

3) Sometimes, *es* can also be substituted by a combination of nouns in the nominative, for example, *Es taut* (lit. "*It's thawing") vs. *Schnee und Eis tauen* ("Snow and ice are thawing").

4) In spoken emphatic language, *es* can be substituted as the subject of weather verbs with the neuter demonstrative pronoun *das: Das regnet! / Das regnet schon wieder! / Wie das heute wieder regnet!* (lit. "*That's raining!" / "*That's raining again!"/"*How that's raining again today!") (cf. also Bleotu 2012, 61 on the emphatic sentences *Das regnet schon wieder! / Das regnet ja nicht mehr!* ["*That's raining again!"/"*That's not raining any more!"] in spoken German and, similarly, Weinrich 1982, 103 on French *Ça pleut!* ["*That's raining!"] oder *Ah, ce que ça tonne!* ["*Ah, that's (really) thundering"]).

5) *es* can also be assigned a semantic role. By doing this, differently from many recent contributions on semantic roles/functions, we carefully distinguish between extra-linguistic "referential roles" that is, entities of extra-linguistic reality which are involved in actions, processes, and states, such as agent, patient, and instrument, and "semantic roles" in the narrow sense, that is, the language-specific perspective in the expression of referential roles. These semantic roles in the narrow sense should be clearly distinguished from referential roles with the help of slightly differing terms, e.g. agentive, patientive, instrumental, etc. (cf. Kienpointner 2008; 2010, 220ff). The pronoun *es* (cf. similarly English *it*, French *il*, and Dutch het) as a subject of weather verbs refers to entities which are undergoing the various weather processes. Therefore, *es* could be assigned the semantic role Processed (cf. Dik 1997 1:118: "the entity that undergoes a process"). These neuter pronouns stand for the visually/tactilely/acoustically experienced phenomena of precipitation (e.g. rain, snow, hail, thaw), more or less bright celestial bodies or atmospheric phenomena (e.g. the sun, the moon, bolts of lightning, clouds) and sounds (thunder, the noise of rain, the patter of hail). Weinrich (1993, 391f) similarly characterizes *es* with weather verbs as a "horizon morpheme" ("Horizontmorphem"), which refers to the horizon of natural processes. The fact that circumstantial entities such as place, sky, or day can be promoted to subject positions (cf. e.g. Riau Indonesian *Hari hujan* "day rain," that is, "It's raining"; Eriksen et al. 2015, 216) leads Eriksen et al. (2015, 217) to the plausible assumption that "expletive subjects are not necessarily as semantically devoid of function as commonly supposed, but that they might have an adverbial semantic function."

6) Some of the constructions with nouns as subjects of weather verbs even allow the assignment of the semantic role Force (cf. Dik 1997 1:118: "the non-controlling entity instigating a process"). This is especially suitable for cases such as *Die Sonne scheint* ("The sun is shining"), *Der Blitz schlägt ein* ("The lightning is striking"), *Ein Sturm erhebt sich* ("A storm is rising"), where the respective entities are verbally portrayed as causal sources of weather processes rather than as entities which are affected by the weather phenomena.

Here is a further argument for distinguishing Processed and Force as the semantic role of Anom: German and English weather verbs having nouns as Anom with the semantic role Force cannot be combined with *es* or *it* and still convey their usual meteorological meaning. As far as this semantic property is concerned, they clearly differ from weather verbs with nouns or *es* or *it* with the semantic role Processed, where the expressions *es/it* + VerbP do keep their meteorological meaning. See, for example, the following pairs of examples (*= unacceptable in the meteorological sense; cf. also Bleotu 2012, 67f):

26. *Die Sonne scheint* / *The sun is shining* vs. **Es scheint* / **It's shining*.
27. *Der Blitz schlägt ein* / *The lightning is striking* vs. **Es schlägt ein* / **It's striking*.
28. *Ein Sturm erhebt sich* / *A storm is rising* **Es erhebt sich* / **It's rising*.
29. *Regen fällt* / *Rain is falling* vs. *Es regnet* / *It's raining*.
30. *Schnee fällt* / *Snow is falling* vs. *Es schneit* / *It's snowing*.
31. *Hagel prasselt nieder* / *Hail is pattering down* vs. *Es hagelt* / *It's hailing*.

The semantic difference between Anom/Processed + weather verb and Anom/Force + weather verb can also be made explicit by the much better acceptability of sentences which are the result of a transformation test with *tun/machen* ("do/make") in example 32 (with *Sonne* ["sun"] as Anom/Force) than in example 33 (with *Regen* ["rain"] as Anom/Processed):

32. *Die Sonne scheint und das tut/macht sie in Colorado Springs 300 Tage im Jahr*. ("The sun is shining and it does so in Colorado Springs 300 days a year")
33. *Der Regen fällt und das tut/macht er sehr oft*. ("The rain is falling and it does so very often")

This shows that sun is represented in *Die Sonne scheint* ("The sun is shining") more "agent-like" than the rain in *Der Regen fällt* ("Rain is falling"), although of course the sun is not portrayed "agentively," as an agent in the strict sense of an intentionally acting entity (Dik 1997 1:118: "the entity controlling an action"), but as a Force (that is, "the non-controlling entity instigating a process"). But the sun is a "unique, visually accessible and salient entity" (Eriksen et al. 2015, 210). Typically, in the northern Caucasian language Akhvakh, an ergative language, the sun is assigned the ergative case in the basic weather expression corresponding to Engl. *The sun is shining: Miλi-de gōʁwel-āri duna* (sun-ERG illuminate-PFV world; ERG = Ergative; PFV = perfective), that is, "The sun has illuminated the world" = "The sun is shining" (cf. Eriksen et al. 2015, 218).

As far as the distribution of sentence patterns with *es*/Anom + VerbP vs. N/Anom + VerbP in German is concerned, the following tendency can be observed: If the entities which undergo the weather processes (semantic role: Processed) or which trigger these processes (semantic role: Force) can be easily seen and can be clearly demarcated (e.g. entities such as rain, snow, hail, sun), either both variants exist: *es*/Anom + VerbP and N/Anom + VerbP (*Es regnet* ["It's raining"] / *Regen fällt* ["Rain is falling"] or only the variant N/Anom + VerbP *Die Sonne scheint* ["The sun is shining"], *Der Wind weht* ["The wind is blowing"]).

If, however, the weather phenomena are only weakly perceptible (e.g. entities such as drizzle, hazy sky, sheet lightning), the variants *es* + VerbP or *es* + AuxV + AdjP (*Es nieselt* ["It's drizzling"] / *Es ist diesig* ["It's hazy"] / *Es wetterleuchtet* ["There is sheet lightning"]) are unmarked, the variants N + VerbP or N + AuxVP + AdjP are marked and display a smaller frequency in the texts. A Google test shows that *Es nieselt* appears 34,000 times, whereas *Der Regen nieselt* ("The rain is drizzling") occurs only 1,430 times. Furthermore, *Es ist diesig* ("It's hazy") has 2,940 occurrences, *Der Himmel ist diesig* ("The sky is hazy") only 920. Finally, *Es wetterleuchtet* ("There is sheet lightning") occurs with a frequency of 3,870, *Der Himmel wetterleuchtet* (lit. "*The sky is doing sheet lightning," that is, "There is sheet lightning in the sky") only 37 times (Google test performed on August 15, 2017; the same test performed on July 27, 2014 revealed differing absolute numbers, but similar proportions; cf. Ogawa et al. 2014, 124).

Weather Expressions in Korean

We now turn to Korean weather expressions. Here is a list of 32 basic weather expressions in Korean[13]:

1. *Bi-ga onda./Bi-ga naerinda. // Bi-ga ogoissda.//Bi-ga naerigoissda.*
   (lit. "*Rain comes/falls"; "*Rain is coming/falling," that is, "It's raining")
2. *Bi-ga ssodajinda.//Bi-ga ssodajigoissda./Bi-ga ppeobutneunda.//Bi-ga ppeobutgoissda.*
   (lit. "*Rain pours"/"*Rain is pouring"; "*Rain pours/is pouring heavily"; that is, "It's pouring with rain")
3. *Boseulbi-ga onda/Boseulbi-ga naerinda.//Boseulbi-ga ogoissda.//Boseulbi-ga naerigoissda.*
   (lit. "*Drizzle comes/falls"; "*Drizzle is coming/falling," that is, "It's drizzling")
4. *Nun-i onda./Nun-i naerinda.//Nun-i ogoissda.//Nun-i naerigoissda.*
   (lit. "*Snow comes/falls"; "*Snow is coming/falling," that is, "It's snowing")
5. *Iseulbi-ga onda./Iseulbi-ga naerinda.//Iseulbi-ga ogoissda.//Iseulbi-ga naerigoissda.*
   (lit. "*Thaw comes/falls"; "*Thaw is coming/falling," that is, "The ice/snow is thawing"; "It's freezing")
6. *Ubag-i naerinda.//Ubag-i naerigoissda./Ubag-i ssodajinda.//Ubag-i ssodajigoissda.*
   (lit. "*Hail falls/is falling"; "*Hail patters/is pattering down," that is, It's hailing," "Hail is pouring down")
7. *Cheondung-i chinda.//Cheondung-i chigoissda.*
   (lit. "*Thunder thunders/is thundering," that is, "There is thunder"/"Thunder is rumbling")
8. *Beongae-ga chinda.//Beongae-ga chigoissda.*
   (lit. "*Lightning flashes"/"*Lightness is flashing," that is, "There is lightning," "The lightning is striking")

13. The differing Korean verbal predicates usually can occur in a non-progressive and a progressive form (separated by "//"), depending on verbal context and situation. So normally both Korean verb forms are given in the examples (differing verbal lexemes are separated by "/"). A literal English translation of both forms is always marked with "*", as it is not the usual/most common basic weather expression, and is followed by the prototypical English weather expression. Sometimes, the English translations are only the closest possible approximation to the meaning of the Korean expressions. The list of Korean weather expressions is slightly longer than the corresponding list of German weather expressions. This is due to the fact that there are more lexical variants for the expression of weather phenomena in Korean.

9. *Beongae-ga beonjjeoginda.*//*Beongae-ga beonjjeogigoissda.*
   (lit. "*Lightning flashes/is flashing," that is, "There is lightning")
10. *Baram-i bunda.*//*Baram-i bulgoissda.*
    (lit. "*Wind blows/is blowing," that is, "The wind is blowing")
11. *Taepung-i bunda.*//*Taepung-i bulgoissda.*/*Taepung-i chinda.*//*Taepung-i chigoissda.*
    (lit. "*Storm blows/is blowing"; "*Storm rages/is raging," that is, "The storm is raging")
12. *Haneul-i malkda.*
    (lit. "*Sky clear-DECL," that is, "The sky is clear")
13. *Haneul-i malgajigoissda.*
    (lit. "*Sky is being brightened," that is, "The sky is clearing up," "The sky is brightening up")
14. *Haneul-i heurida.*//*Haneul-i heuryeojigoissda.*
    (lit. "*Sky is cloudy/is getting cloudy," that is, "The sky is getting cloudy," "It's getting cloudy")
15. *Gureum-i kkinda.*//*Gureum-i kkigoissda.*
    (lit. "*Clouds exist/are existing," that is, "It's cloudy," "It's overcast")
16. *Angae-ga kkinda.*//*Angae-ga kkigoissda.*
    (lit. "*Haziness is/is being formed," that is, "It's hazy")
17. *Ttettero malgeona heurida.*
    (lit. "*Variably clear cloudy-DECL" that is, "It's clear and cloudy")
18. *Nalssi-ga*/*Haneul-i ttettero malgeona heurida.*
    (lit. "*Weather/sky variably clear cloudy-DECL," that is, "The weather/the sky is clear and cloudy")
19. *Hae-ga nanda.*//*Hae-ga nagoissda.*
    (lit. "*Sun comes/is coming up," that is, "The sun is shining")
20. *Hae-ga bichunda.*//*Hae-ga bichugoissda.*
    (lit. "*Sun shines/is shining," that is, "The sun is shining")
21. *Hae-ga tteunda*//*Hae-ga tteugoissda.*
    (lit. "*Sun rises/is rising," that is, "The sun is rising")
22. *Dal-i bichunda.*//*Dal-i bichugoissda.*
    (lit. "*Moon shines/is shining," that is, "The moon is shining")
23. *Hwanghon-i deunda.*//*Hwanghon-i deulgoissda.*
    (lit. "*Twilight falls/is falling," that is, "Dusk is falling"/"Dawn is breaking")
24. [*Nal-i*] *Eodupda.*
    (lit. "Day dark-DECL," that is, "the day is dark"; without subject: *Dark-DECL," that is, "It's dark")
25. *Eoduwojinda.*//*Eoduwojigoissda.*
    (lit. "*Dark is brought/is being brought," that is, "Darkness is falling")

26. [*Nal-i*] *Balkda.*
    (lit. "*Day light-DECL," that is, "The day is light"; without subject: "*light-DECL," that is, "It's light")
27. *Balgajinda*//*Balgajigoissda.*
    (lit. "*Light is brought/is being brought," that is, "It's getting light," "Dawn is breaking")
28. *Nalssi-ga jota.*//*Nalssi-ga johajigoissda.*
    (lit. "*Weather good-DECL," "*Weather is being made good," that is, The weather is good")
29. *Nalssi-ga nappeuda.*//*Nalssi-ga nappajigoissda.*
    (lit. "*Weather bad," "*Weather is being made bad," that is, "The weather is bad")
30. [*Nalssi-ga*] *Chupda.*
    (lit. "*Weather cold-DECL," that is, "The weather is cold"; without subject: "*Cold-DECL," that is, "It's cold")
31. [*Nalssi-ga*] *Deopda.*
    (lit. "*Weather hot-DECL," that is, "The weather is cold"; without subject: "*Hot-DECL," that is, "It's hot")
32. *Oneul-eun nalssi-ga jota.*
    (lit. "*As far as today is concerned, weather good-DECL," that is, "Today, the weather is good")

The most striking differences between Korean weather expressions and those in German and many other Indo-European languages are the following ones:

1) In Korean, there is no verbal basic weather term (that is, no specific weather verb).

2) In sentences expressing weather processes, unlike in those used in German and many other Indo-European languages, there is no expletive subject such as English *it*, German *es*, and French *il*. Therefore, "meteo-specific" general nouns predominate, such as *bi* ("rain"), *nun* ("snow"), *boseulbi* ("drizzle"), *iseulbi* ("thaw"), *cheondung* ("thunder"), *hae* ("sun"), *dal* ("moon"), and *nalssi* ("weather"). They are used as "true" subjects and are combined with general, "non-meteo-specific" verbs (such as *onda*, *naerinda*, *chinda* ["come," "fall," "strike," "shine"]).[14] This means that

14. The range of usage of these general Korean verbs is impressive. For example, the verb *onda* ("come") can also occur in sentences expressing the following meanings: "The winter comes," "The bus comes."

Korean weather expressions are generally to be placed at the entity pole of the meteo-scale (cf. Eriksen et al. 2015, 207, who consider Korean *Bi-ga* onda as an instance of their "argument type").

3. However, there are also a few expressions which seem to be closer to the event pole of the meteo-scale, for example, *Chupda/Deopda* (lit. "cold-DECL"/"hot-DECL," that is, "It's cold"/"It's hot"). Such one-word sentences would be impossible in English or German (apart from marked, exceptional contexts, such as elliptical answers to questions such as in English: A: *Is it hot or cold?* B: *Hot/Cold*; in German: A: *Ist es heiß oder kalt?* B: *Heiß/Kalt*). Still, even these expressions imply an optional Anom ([*Nalssi-ga*] *chupda*/[*Nalssi-ga*] *deopda*.) and thus have to be considered as one-place predicates.

Moreover, there are also similarities: the predominant sentence pattern in both the German and the Korean list of basic weather expressions is pattern 1 (both in the German and the Korean list of 12/15 important sentence patterns); these patterns consists of a one-place verb and an Anom. This does not preclude the existence of more complex sentence patterns containing two-valued weather verbs, as soon as we take non-basic, that is, metaphorical uses of weather verbs and other more complex extensions into account (cf. e.g. German *Er donnerte ihn an* [lit. "*He was thundering at him"], *Es goss wie aus Kübeln* [lit. "*It was raining as out of buckets"], *Der Blitz schlug ins Dach ein* [lit. "*The lightning struck into the roof"]; cf. also the Italian and French examples given by Siller-Runggaldier 2004, 228ff; Cennamo 2015, 426f).

Furthermore, much in the same way as in German, the majority of the predicates of basic weather expressions are verbs in Korean (cf. examples 1-11, 15-16, 19-23). In the corresponding German list, we find 17 verbs within a total of 25 weather expressions (cf. examples 1-13, 18-21). Hence, there are slightly more adjectival verbs in Korean (cf. examples 12-14, 17-18, 24-32) than predicative adjectives in German (9 predicative adjectives, cf. examples 14-17, 22-26). German predicative adjectives, however, differ from Korean adjective verbs because they are always in need of a finite auxiliary verb, such as *sein* ("be") or *werden* ("become"), whereas in Korean, there is a declarative particle (*-da*),

The verb *naerida* ("fall") can also convey the non-meteo specific meanings: "The water falls," "The price falls."

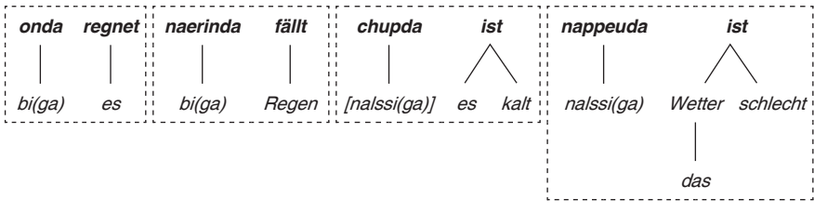

Figure 3. (source: authors)

which is suffixed to the predicative adjective (adjective verb, state verb).

Some of the most important similarities and contrasts within the dependency structures of basic Korean and German weather expressions are visualized with the help of the dependency trees in Figure 3. Note that *Bi-ga* onda has the structure VerbP (Anom N), but *Es regnet* VerbP (Anom PRO). Moreover, *Regen fällt* is a German weather expression which is syntactically and semantically similar to *Bi-ga naerinda*, but *Regen fällt*, differently from *Bi-ga naerinda*, is not a basic weather expression (cf. Figure 3 above; dotted lines surround the contrasting pairs of weather expressions in Korean and German).

In the following, we would like to make a few explanatory remarks concerning specific weather expressions. Both variants within example 1 of the German list, *Es regnet* and (*Der*) *Regen fällt* correspond to Korean *Bi-ga onda*/*Bi-ga naerinda* (lit. "*Rain comes"/"Rain falls").

In example 2, the Korean expression *Bi-ga ssodajinda* ("It's pouring with rain") has a metaphorical origin: the comparison with pouring out water from a bucket has been transferred and conventionalized within the weather expressions of Korean, in a similar way as German *Es schüttet* (lit. "*It's pouring") and English *It's pouring with rain*. or *It's raining buckets*.

Quite typical for (*literary*) Korean is the use of mimetic (onomatopoeia) adverbs (cf. Martin 1992, 344; Lee, Lee, and Chae 2006, 153f; Kim 2005, 178f). Similar mimetic expressions exist in Japanese (cf. Ogawa et al. 2014, 133). As far as meteorological expressions are concerned, this involves the additional insertion of reduplicated instances of an adverb. These double adverbs function as a satellite, added to the basic weather expression in order to mimic the sound or the shape of the weather phenomena.

These mimetic expressions are not conventionalized in German, at least not to the same degree as in Korean. Although we normally do not deal with satellites, this remarkable contrast between Korean and German justifies

their brief treatment here.[15] By having these satellites, effective onomatopoeia techniques have been developed in Korean. These iconic devices can imitate the degree and strength of rain and other weather phenomena. For example, drizzle or misty rain (cf. example 3) is portrayed by the sound of gently dropping water: *buseul buseul*. If rain is falling heavily, *jwak jwak* can be used (cf. example 2). According to the strength of wind, the variants *sallang sallang* (for a gently blowing wind) and *hwing hwing* (for a strongly blowing wind) can be applied. A strong degree of snowing can be characterized by the addition of *peol peol: Nun-i peol peol naerigoissda* (lit. "*Snow is falling with [big] flakes").

The strength of the sound of thunder is imitated by *kwang kwang* (cf. example 7). If the thunder is particularly loud and relatively close to the speaker, *kung kung* is used. In German, the same situation could be expressed by exchanging the verbal predicates, such as in *Der Donner grollt/rollt* ("Thunder is rumbling") (unmarked) vs. *Der Donner kracht* (marked) ("Thunder crashes").

Examples 7 and 8 show that the verb *chinda* can refer to experientially outstanding phenomena of both an acoustic and a visual nature, as it can be used both for thunder, lightning, and storm (as a storm can be the subject of *chinda*, too, if it is heavy; cf. example 7). The verb *chinda*, therefore, can refer to both acoustically and visually intensive weather phenomena. The specific visual conspicuousness of bolts of lightning is reflected by the corresponding onomatopoetic pair *ppeonjjeok ppeonjjeok*. Mimetic words can also characterize unclouded sunshine: *jjaeng jjaeng* (cf. example 20).

A final remark on mimetic expressions: predicate adjectives (AdjP), too, can intensify the description of a weather phenomenon. Predicative adjectives such as colour terms can form up to three different degrees of intensity of the respective weather phenomenon (cf. Martin 1992, 346: "plain—intensive—paraintensive"). For example, the different levels of darkness as a weather phenomenon can be *Eoduwojinda* ("It's getting dark"), *Kkamkkamhaejinda* ("It's getting pitch-black"), *Kamkamhaejinda* ("It's getting totally coal black"; cf. Lee, Lee, and Chae 2006, 156[16] ; Song 2008, 286f) are observed.

All Korean weather expressions in the progressive form are possible, too.

15. It is also clear that this wealth of onomatopoetic expressions in Korean concerns lexical contrasts rather than grammatical contrasts.
16. These expressions also use the onomatopoetic qualities of tense and aspirated Korean sounds: a strong sound impression (tense consonants) and a violent sound impression (aspirate consonants).

Sentences containing *eojida* and a predicative adjective show a change of the respective state (cf. Ko and Ku 2009, 350; 373). These changes of a state appear in the following examples: The sky becomes clear (example 13), the day begins by getting brighter (cf. example 27), or ends by getting darker (cf. example 25). Getting dark and getting light in examples 25 and 27 is expressed by movements from and towards the deictic centre (= movement from or towards the viewpoint of the speaker): in this way, coming darkness is a representation of dusk as a movement towards or from the speaker/a timepoint as a deictic center (cf. Lee 2006, 325).

As the list of 15 important Korean sentence patterns (cf. the 3rd section) shows, most of the Atop postpositions *-neun/-eun* can be substituted by the Anom postpositions *-ga/-i*. However, as the list of Korean weather expressions shows (cf. above), the postpositions *-ga/-i* usually are not substituted by Atop postpositions. Of course, if the expressions have an implicit subject, this obviously excludes the possibility of choosing between Anom or Atop. This almost exclusive use of *-ga/-i* could be explained by the fact that the subjects of weather verbs often refer to non-topical, indefinite entities, which thus cannot be combined with a topic marker (cf. Eriksen et al. 2015, 226; likewise, Japanese subjects of weather verbs do not take the topic marker *-wa*, but only the nominative suffix *-ga*; cf. Ogawa et al. 2014, 136).

What is more, in many cases the Anom postposition can be omitted. This means that quite normally, *-ga/-i* can be omitted and the resulting sentences are perfectly grammatical, for example: *bi onda* ("Rain comes"), *cheondung chinda* ("Thunder rumbles"), *beongae chinda* ("Lightning strikes"), *baram bunda* ("Wind blows"). The sentence pattern remains VerbP (Anom) in all these cases.

As observed above, in Korean, there are regular weather expressions which merely consist of a predicative adjective (AdjP) (cf. Korean sentence pattern 1, the 3rd section, and examples 12-14, 17-18, 24-32 above). For example, *chupda* ("cold-is") and *deopda* ("hot-is") are not colloquial expressions, but instances of the standard language. Still, however, these predicative adjectives imply an optional Anom ([*Nalssi-ga*] *chupda*, [*Nalssi-ga*] *deopda*) and thus have to be seen as one-place predicates. Such predicative adjectives/state verbs can be also used with non-meteo-specific subjects, such as *Bang-i chupda* ("The room is cold"), *Na-neun chupda* ("I am cold"), *Seoul-i deopda* ("Seoul is hot"), where they are not used as weather terms. If the predicative adjectives *jota/nappeuda* ("good/bad") are used along with the subject *nalssi* ("weather"), this subject cannot be

omitted, in the same way as in English or German (cf. *The weather is good/*is good; Das Wetter ist gut/*ist gut* and examples 28, 29).

Finally, here are a few remarks about example 32: *Oneul-eun nalssi-ga jota* ("Today, the weather is good"). This seems to be another case of a double subject sentence, but in this case, the meaning of the Atop postposition *-neun/-eun* is something like "today as compared with yesterday."

Contemporary Korean is a language with relatively few cognate noun-verb-constructions. Until the 15th century, there were still many cognate nouns and verbs, but many of them have disappeared since then. Today, there are no cognate constructions which are related to the weather (cf. Lee and Lim 1988, 142).

A final remarkable contrast we would like to mention concerns the wealth of differing types of rain which are lexically distinguished in Korean. Korea's seasons are distinctive and its climate is very diverse. Therefore, the characteristics (shape, intensity) of rain can be used in a very diverse manner. There are many more "rain" expressions than in standard German, at least, if you stick to simple words and disregard complex expressions in German (e.g. compounds). Here are a few examples, with a focus on "rain" expressions which are especially common and/or frequent in contemporary standard Korean: a kind of rain coming down as if it would be flowing in the wind is called *boseulbi* ("drizzle rain"; in German, you need a complex expression in order to express this concept: *Nieselregen*). Rain which comes down without any sound in early spring is called *iseulbi* (with no counterpart in German). Thin rain which appears like a multitude of thin threads is referred to as *garangbi* (cf. the regional [Austrian German] expression *Schnürlregen*: "*bits-of-string rain"). Its "thicker" lexical counterparts are *jangdae* and, even more so, *jakdal*, which is rain which appears thick as a set of poles (with *jangdaebi* ["thin pole"] and *jakdalbi* ["thick pole"] being metaphorically used for rain). Here again, there are no counterparts in standard German. Rain, which is seen as continuously falling down in the summer, has the name *jangmatbi* (cf. the corresponding German compound *Dauerregen* "continuous rain"). However, rain that lasts only for one or two hours in the summer is called *sonakbi*.

When there is only light rain for a short period of time, while the sun is still shining, this phenomenon is called *yeoubi* (lit. "fox," that is, "fox rain"). In this case, the fox is being metaphorically represented as a meteorological situation with variable light conditions (sun and rain at the same time). Again,

no identical counterpart can be found in German, with *Sonnenregen* ("sun shower") being the closest possible translation.

Heavy rain is called *modagitbi*. In German, you can express this phenomenon only with the help of a compound: *Sturzregen* ("gush," "downpour," "torrential rain").

The old tradition of agriculture (cf. Kang 2013, 157f), especially rice farming, is reflected in the expressions *mokbi* ("rain falling just in time for farming season"; no counterpart in standard German) and *motbi*: "rain falling down after planting rice" (again no counterpart in German). This is only a small selection of the most prototypical and commonly used expressions denoting rain. These lexical phenomena can be seen as the result of a cultural tradition of observing weather phenomena over long periods of time, phenomena which apply to farming. Furthermore, when rain comes after a drought, it is personified in Korean, and honorific expressions such as *Bi osinda* ("Rain is coming like a most welcome guest") are sometimes used.

Conclusion

There is still a lot of work to be done to fully justify the meteo-scale as a useful theoretical tool for the categorization and typological classification of weather verbs/expressions in the languages of the world. However, we conclude that, at least for the moment, the meteo-scale can be considered to be a relatively plausible means to function as a *tertium comparationis* for the contrastive description of weather verbs/expressions found in specific languages such as German and Korean, but also Latin, French, English, Turkish, and Japanese.

Most German basic weather expressions can be located in the intermediate area of the meteo-scale, that is, they consist of weather verbs plus expletive subjects (cf. *Es regnet* "It's raining," *Es schneit* "It's snowing," *Es donnert* "There's thunder," *Es blitzt* "There's lightning," etc.), a construction which is typical for "the languages spoken in Northern and Western Europe" (cf. Eriksen et al. 2015, 214). The vast majority of the Korean weather expressions, however, has to be located at the entity pole of the meteo-scale (cf. as typical examples: *Bi-ga onda* [lit. "Rain comes," that is, "It's raining"], *Nun-i onda* [lit. "Snow comes," that is, "It's snowing"]). A few expressions which at first view seem to be situated at the phenomenon pole (cf. *Chupda* ["cold-DECL," that is, "It's

cold"] and *Deopda* ["hot-DECL," that is, "It's hot"]) imply an implicit Anom—e.g. [*Nalssi-ga*] *chupda*, [*Nalssi-ga*] *deopda*. Although due to the omissibility of the optional Anom they seem to come closer to the phenomenon pole, they are one place predicates, which thus have to be placed at the entity pole, too. Reduplicated mimetic adverbs as satellites of weather verbs play a far greater role in Korean than, for example, in German (cf. *jjwak jjwak* for the onomatopoeia characterization of heavy rain, and *kung kung* for close and loud thunder). The Korean data could lead towards a more comprehensive view and interpretation of these fascinating expressions.

Moreover, the first of the three tentative implicative universals established in Ogawa et al. (2014, 141) is corroborated by the Korean data (cf. the concept of "implicational laws" of Jakobson 1962). These tentative universals, which at the moment are most probably universal tendencies rather than absolute implicational universals, will have to be refined after more languages are taken into account. But for the moment, they can be formulated as follows:

1. If a language represents meteorological phenomena at the phenomenon pole of the meteo-scale using weather verbs without overt subject, then this language will not have impersonal expressions in the intermediate area with obligatory expletive (pronominal) subjects.
   [Examples: Latin, Ancient Greek, Czech, Hungarian, Japanese, Korean]

2. If a language represents meteorological phenomena using weather verbs with obligatory expletive (pronominal) subjects in the intermediate area, then it normally does not permit using weather verbs without overt subjects at the phenomenon pole.
   [Examples: German, Dutch, Swedish, Norwegian, English, French][17]

3. If a language represents meteorological phenomena with cognate weather verbs + semantically "substantial" subjects in the intermediate area, then it normally also represents meteorological phenomena at the entity pole with sentence patterns with a semantically "substantial" subject.
   [Examples: German, Dutch, Russian, Czech, Japanese, Turkish]

Of course, these suggested implicational tendencies will have to be tested with the help of empirical data taken from further genetically and typologically diverse (sets of) languages, as they are so far mainly based on data taken from a small number of (non-)Indo-European languages spoken in Europe and Asia.

17. This seems to be a regional phenomenon of north-western Europe.

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Abstract

In earlier contrastive research on weather verbs (weather expressions) (cf. Ogawa et al. 2014; Kienpointner 1995, 2016), a typological model called "meteo-scale" has been established as a *tertium comparationis*. With the help of this meteo-scale, weather expressions can be located on a continuum of the verbal presentation of weather events, with an entity pole and a phenomenon pole, and an area in between. In this paper, a further empirical contrastive study, comparing data from German and Korean and assigning German and Korean weather expressions to the most frequent and prototypical syntactic patterns of these two languages, has been undertaken. The Korean data have led towards a more comprehensive view and interpretation of these fascinating expressions, both in Indo-European and in non-Indo-European languages. Moreover, the first of the three tentative implicative universals established in Ogawa et al. (2014, 141) has been corroborated by the Korean data.

Keywords: weather expressions, meteo-scale, Korean, German, contrastive grammar, dependency grammar, language typology

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