ANKARA SOSYAL BİLİMLER ÜNİVERSİTESİ
YABANCI DİLLER FAKÜLTESİ

WORLD LANGUAGE STUDIES

Cilt/Volume: V, Sayı/Issue I, Haziran/June 2025 / E-ISSN: 2791-7770

CONCEPTUAL METAPHORS IN WEATHER EXPRESSIONS OF PRECIPITATION AND TEMPERATURE

YAĞIŞ VE SICAKLIK BELİRTEN HAVA DURUMU İFADELERİNDEKİ KAVRAMSAL METAFORLAR

Emre YAĞLI

Assoc. Prof. Dr., Hacettepe University, Faculty of Letters, Department of English Linguistics, Ankara, Türkiye

Doç. Dr., Hacettepe Üniversitesi, Edebiyat Fakültesi, İngiliz Dili Bilimi Bölümü, Ankara, Türkiye

ORCID: 0000-0002-1044-9018
Email: yagli@hacettepe.edu.tr

Oktay ÇINAR

Assist. Prof. Dr., Istanbul Medeniyet University, University, Faculty of Arts and Humanities, Department of Linguistics, Istanbul, Türkiye

Dr. Öğr. Üyesi, İstanbul Medeniyet Üniversitesi, Edebiyat Fakültesi, Dilbilim Bölümü, İstanbul, Türkiye

ORCID: 0000-0002-9822-7574
Email: oktaycinarr@gmail.com

Geliş Tarihi/Submitted:
05.03.2024
Kabul Tarihi/ Accepted:
03.06.2025

Anahtar Kelimeler:
Kavramsal Metafor Kuramı, Diller Arası Değişkenlik, Kaynak-Hedef İlişkisi, Bilişsel Dilbilim, Hava Durumu İfadeleri

Keywords:
Conceptual Metaphor Theory, Cross-Linguistic Variation, Source-Target Relations, Cognitive Linguistics, Weather Expressions

Kaynak gösterme/Citation:
Yağlı, E., & Çınar, O. (2025). "Conceptual Metaphors in Weather Expressions of Precipitation and Temperature". *World Language Studies* (*WLS*), 5 (1): 65-90

Abstract

This paper aims to explore cross-linguistic variation in conceptual metaphors related to weather with a particular focus on precipitation (rain) and temperature (heat). We specifically examine how metaphorical mappings differ across languages concerning lexical category (i.e., nouns, verbs, adjectives) and source domain. Drawing on Conceptual Metaphor Theory (CMT), we analyse weather descriptions from ten typologically diverse languages: Turkish, English, Polish, Italian, Persian, Filipino, German, French, Swahili, and Korean. We elicited these descriptions through email correspondence with native speakers, all of whom possess at least an intermediate level of English. We asked informants to describe two weather scenes (i.e., rainy and sunny) in their native languages and then to provide literal English translations of their descriptions. This method allowed us to observe how metaphorical expressions are grammatically and lexically encoded across linguistic systems. We find that metaphorical variation aligns with the dynamic vs. stative nature of weather events: rain, as a dynamic phenomenon, is more frequently expressed through motion-based metaphors, while heat, as a stative condition, tends to be framed via state or intensity-based metaphors. Moreover, while conceptual metaphors show cross-linguistic consistency, their grammatical realisation regarding lexical categories and argument structure varies according to language-specific typological patterns.

Öz

Bu çalışma, hava durumuna ilişkin kavramsal metaforların diller arası farklılıklarını, yağış (yağmur) ve sıcaklık (ısı) kavramlarına odaklanarak incelemeyi amaçlamaktadır. Kavramsal Metafor Kuramı çerçevesinde yürütülen çalışmada, metaforik eşleşmelerin sözcük türleri (ad, eylem, sıfat) ve kaynak alan bakımından diller arasında nasıl farklılaştırıldığı araştırılmıştır. Veriler, anadili Türkçe, İngilizce, Lehçe, İtalyanca, Farsça, Filipince, Almanca, Fransızca, Swahili ve Korece olan ve en az orta düzeyde İngilizce bilen kaynak kişilerden e-posta yoluyla toplanmıştır. Kaynak kişilerden, iki hava durumu sahnesini (yağmurlu ve güneşli) kendi anadillerinde betimlemeleri ve ardından bu betimlemelerin İngilizce çevirilerini yapmaları istenmiştir. Bu yöntem, metaforik ifadelerin farklı dillerde sözcüksel ve biçimbilimsel olarak nasıl kodlandığını gözlemlememizi sağlamıştır. Bulgularımız, metaforik değişkenliğin çoğunlukla hava olayının dinamik ya da durağan doğasıyla ilişkili olduğunu ortaya koymaktadır. Dinamik bir olgu olan yağmur, sıklıkla hareket temelli metaforlarla, durumsal bir olgu olan sıcaklık ise daha çok durum veya yoğunluk temelli metaforlarla ifade edilmektedir. Ayrıca, kavramsal metaforlar diller arasında genel olarak tutarlılık gösterse de, bu metaforların sözcük türü ve tümce yapısı bakımından dilsel gerçekleşimi, incelenen dillerin tipolojik özelliklerine bağlı olarak değişkenlik göstermektedir.

1. INTRODUCTION

The study of language reveals variations in the ways meteorological events are conceptualised and encoded across languages (Bauer, 2000; Bletou, 2012; Eriksen et al., 2010, 2012; Langacker, 1999; Mettouchi & Tosco, 2010; Ruwet, 1986, 1989; Saarinen, 1997). This paper focuses on one domain where such variation becomes cognitively and linguistically salient: metaphorical expressions related to precipitation (e.g., rain) and temperature (e.g., heat). Using a cross-linguistic perspective grounded in Conceptual Metaphor Theory (CMT), we explore how these weather phenomena are metaphorically represented in ten typologically diverse languages, and how such representations differ in terms of the lexical category (e.g., nouns, verbs, adjectives) and source domain.

The central aim of our study is to identify and explain variation in metaphorical mappings across languages, with specific attention to the dynamic (e.g., rain) and static (e.g., heat) nature of weather events. Unlike studies focusing solely on metaphor universality or translatability, our work seeks to understand how cognitive and typological factors interact in shaping metaphorical weather expressions. We argue that these patterns are not random but reflect broader tendencies in how different linguistic systems structure experience, particularly through metaphor.

Understanding how languages metaphorically encode weather phenomena also holds applied significance. While this study is not primarily concerned with translation or pedagogy, our findings have potential implications for language teaching, translation studies, and intercultural communication domains in which metaphorical language often causes misinterpretation. In particular, insights from this research may contribute to developing strategies for dealing with conceptual mismatches in translation and raising awareness of language-specific metaphorical patterns in classroom contexts.

The introduction proceeds in two main parts. First, we provide an overview of the foundational principles of CMT. We highlight the importance of source-target mappings, directionality, and the role of concrete experience in metaphor formation. Second, we turn to weather in language, summarising key findings from semantic typology and cross-linguistic research on weather verbs and argument structure. By combining the conceptual framework offered by the CMT with an exploration of cross-linguistic typological variations, we aim to provide a more comprehensive account of metaphorical variation.

1.1. CONCEPTUAL METAPHOR THEORY

According to Lakoff and Johnson's *Metaphors We Live By* (1980), metaphors play a pivotal role in our understanding of the world, as they allow us to relate to and experience one thing in terms of another. This foundational argument underpins the CMT, which employs mapping techniques to compare and connect closely related concepts.

Metaphors are not only prevalent in artistic or literary contexts but also shape much of our everyday language. According to Lakoff and Johnson (1980), many daily expressions and concepts are metaphorical, influencing perception and understanding of the world. In CMT, the terms *source* and *target* refer to two conceptual domains involved in metaphor formation. Kövecses (2017, p. 14) explains that the source domain is where people derive metaphorical concepts, while the target domain is what people attempt to understand using the source. Another key concept in CMT is *mapping*, which refers to forming correspondences between the source and target domains.

In his 2007 work, Grady offers an example illustrating how the abstract concept of a NATİON can be metaphorically mapped onto a more concrete and experientially grounded concept of *ship*. This metaphor, which casts the *ship* as the source domain and the *nation* as the target domain, illustrates how CMT facilitates the understanding of abstract sociopolitical structures through familiar, embodied experiences. Grady argues that the symbolic alignment between a ship's navigation, i.e., its direction, leadership, stability, and potential for peril, and the trajectory of a nation's political and historical development underscores a deep cognitive resonance. The effectiveness of such a metaphor relies heavily on the shared experiences of the speaker and the listener, as the intended message is inferred and conveyed from the source to the target domain. As Lakoff (2008) emphasises, linguistic realisations of these conceptual mappings serve as cognitive tools, expressions tied to the source domain facilitate understanding of the target domain. Similarly, Evans and Green (2006), Kövecses (2010) stress that metaphor allows abstract, complex, or subjective experiences to be understood through more concrete or embodied concepts, reflecting the embodied nature of cognition.

A deeper understanding of metaphors also requires examining *asymmetrical directionality*. As Evans and Green (2006) explain, metaphor involves transferring characteristics from source to target domains, while the reverse transfer does not hold true. For instance, while we can describe a *financial crisis* as a *storm* (e.g., "The economy is weathering a storm"), we do not metaphorically describe a *storm* using *economic* terms. The direction of

mapping is one-way and conceptually constrained. Concerning this, Lakoff & Johnson (1980) state that metaphors typically map from concrete (e.g., STORM) to abstract (e.g., ECONOMY) domains, i.e., ABSTRACT is CONCRETE.

Grady (2007) illustrates this further with the example of COLDNESS representing EMOTIONAL DETACHMENT. These concepts are not similar in a literal sense, but they are metaphorically linked through embodied experience. *Cold* is often associated with a lack of warmth and human connection. This link is supported by experimental research; for instance, Williams and Bargh (2008) found that physical coldness can elicit perceptions of social distance and emotional detachment, reinforcing the embodied basis of such metaphors. Examining such metaphors uncovers how metaphorical structure reflects underlying cognitive processes. This asymmetry of mapping is not random but rooted in experiential correlations that shape how we conceptualise the world around us (Evans, 2019; Lakoff, 1993).

1.2. WEATHER EXPRESSIONS

Weather expressions encompass a wide range of conditions that pertain to various atmospheric phenomena, including precipitation, temperature, and other meteorological conditions. Precipitation involves a variety of manifestations, such as rain, drizzle, hail, and snow, while temperature-related expressions include terms like hot, cold, sunny, and warm. Additionally, phenomena like thunder and lightning relate to auditory and visual aspects of weather and are often linguistically encoded through figurative descriptions (Kövecses, 2010).

As Langacker (1991) aptly puts it, linguistic expressions describing weather events "are nearly as problematic and ill-behaved as the weather itself" (p. 365). This remark is particularly relevant when comparing how languages encode meteorological phenomena such as rain, as the structural variation across languages resists uniform categorisation and challenges typological classification. The examples below illustrate some of this cross-linguistic diversity.

(1) German (Eriksen et al., 2010)

Es regnet.

It rain.3SG

It is raining.

(2) Basque (Alba-Salas, 2004, p. 76, cited in Eriksen et al., 2010)

Euri-a bota zuen.

Rain-DET.ABS throw have.PST.ABS(3SG).ERG(3SG)

It rained.

(3) Turkish

Yağmur yağıyor.

rain rain-PROG.PRES.3SG

It is raining.

The examples show that different languages have different ways of expressing the concept of RAİN through argument structures. In example (1), the predicate itself encodes the meaning of rain, with the argument *it* serves a syntactic purpose. In example (2), the subject position argument denotes rain, but the predicate *throw* is not directly related to a weather event and is used metaphorically. In contrast, in example (3), both the argument and predicate denote rain, and neither would be sufficient on its own to convey the meaning of rain.

This typological diversity in the grammatical encoding of precipitation also manifests within individual languages. Levin & Krejci (2019), for example, show that English permits two distinct construals of precipitation events: one where rain is conceptualised as a substance being emitted (e.g., Rain fell from the sky), and another where it behaves as a moving entity (e.g., Rain moved across the valley). These construals correspond to differences in syntactic behaviour and argument realisation, demonstrating that event structure and metaphoric framing are closely linked even in intra-linguistic variation. Their findings further support the idea that structural options in weather expressions reflect deeper conceptual choices.

We have shown how different languages express RAİN, highlighting the variation in weather expressions. Though research on weather expressions remains relatively limited, some foundational studies have provided typological insights. Saarinen (1997) identified seven syntactic categories used by European languages to denote RAİN. Similarly, Salo (2011) expanded this analysis to Uralic languages, focusing on valency patterns. Eriksen et al. (2010, 2012) proposed a cross-linguistic typology based on whether rain is encoded through the verb, subject, or both. This typology provides a useful foundation for understanding how different languages structure weather expressions.

Building on this, we observe that languages encode meteorological events through three main sructural configurations, as noted in previous typological research (Eriksen et al., 2010; Mettouchi & Tosco, 2011). In argument-based constructions, the weather event is encoded in the subject position, while predicate tends to be semantically general or metaphorically extended (e.g., Rain falls). In predicate-based constructions, the weather event is encoded solely in the verb, often accompanied by an expletive subject (e.g., It rains) or no subject at al (e.g., ∅ Rains). Finally, argument-predicate constructions redundantly encode the event in both the subject and the verb (e.g., Rain rains), typically through a figura etymologica pattern. These configurations reflect not only syntactic preferences but also conceptualisations of meteorological phenomena. To compare the cognitive how such structures interact with metaphorical framing, we adopt a cognitive-based classification that accommodates these typological distinctions. Although the terminology may vary across studies, the share the same underlying aim: to uncover how different languages structure experience through grammar and metaphor.

1.2.1 SEMANTIC TYPOLOGY OF PRECIPITATION AS RAIN

Mettouchi and Tosco's (2011) study suggests that different languages express the concept of rain in different ways, due to the difficulty in differentiating between the entities involved and the meteorological process itself. This means that languages may perceive the process separately, leading to different ways of articulating weather expressions. To classify languages and identify strategies for coding rain, Mettouchi and Tosco (2011) state that languages use the foregrounding/backgrounding cognitive tool. Foregrounding refers to the act of highlighting or emphasising certain elements or concepts in a linguistic expression, making them more salient and the focus of attention. Backgrounding, on the other hand, refers to the act of relegating or reducing the prominence of other elements or concepts, pushing them to the background and not making them the focus of attention.

In Mettouchi and Tosco's (2011) typology of precipitation as rain, there are three types of languages: (i) world-rains languages (WR), (ii) rain-falls languages (RF), and (iii) rain-rains languages (RR). (i) WR languages, such as English, Italian, and Arabic, typically encode the rain event in the predicate, often with a dummy subject (e.g., *It* rains), placing cognitive focus on the process of precipitation. (ii) In RF languages like Russian and Persian, the subject denotes the rain, while the predicate is often a general motion or force verb (e.g., throw, fall). The entity is foregrounded here, and the predicate provides less semantic specificity. Finally,

(iii) in RR languages such as Turkish and Finnish, both the subject and the predicate encode the same concept (e.g., Rain is raining), a construction known as figura etymologica. These constructions equally emphasise the event and the entity, producing a symmetrical encoding. This typology is relevant to our study because these structural choices may influence or reflect metaphorical mappings. For instance, encoding rain as a forceful agent vs. an abstract process may affect how speakers draw on source domains such as *movement*, *agency*, or *impact* in metaphorical expressions.

1.2.2 SEMANTIC TYPOLOGY OF HOT TEMPERATURE

Even though weather expressions like precipitation, temperature, and atmospheric conditions are related, they may be represented differently in different languages. This is supported by cross-linguistic evidence (Eriksen et al. 2010, 2012). For instance, in a language that emphasises the process of raining (i.e., predicate), there may be no need to encode hot temperatures explicitly. Some languages use an argument or argument-predicate structure to convey various meteorological events but may switch to a predicate-based structure when referring to temperature or other atmospheric conditions.

This suggests that temperature and precipitation are different types of events. Precipitation tends to be encoded as a dynamic event, often associated with motion or force, whereas temperature is typically treated as a stative condition. This distinction has implications for metaphorical construal, as dynamic events more readily support source domains involving movement, force, or agency. In contrast, static events may invite metaphors based on state, substance, or intensity. Similar observations are made in Andrason's (2019) study of Polish meteorological constructions, where temperature expressions are shown to favour impersonal, stative, and predicate-centred structures, reflecting a typological preference for non-agentive and qualitatively descriptive forms of weather predication.

Eriksen et al. (2012) observe that many languages use predicate-based structures for expressing temperature (e.g., *It is hot*, *The air is burning*), reflecting a focus on experiential qualities rather than action or motion. Although the tripartite WR/RF/RR classifications may not apply to temperature, the foregrounding-backgrounding framework can still offer insights into how heat is linguistically and metaphorically prioritised. This allows us to extend the typological lens beyond syntax, exploring how perceived event structure (i.e., dynamic vs static) may interact with metaphorical variation across languages.

1.3. AIMS AND RESEARCH QUESTIONS

This study has two main objectives based on the cross-linguistic studies of weather expressions and the CMT. First, it aims to examine the metaphorical expressions used for rain and hot weather across different languages, focusing on source-target mappings and lexical categories. Second, it seeks to investigate whether these metaphorical variations reflect broader patterns based on their cognitive event structure of the weather phenomenon, i.e., whether it is construed as dynamic or static.

We hypothesise that metaphorical variation is not random but tends to align with the nature of the event: dynamic events like *rain* are expected to elicit metaphors based on motion, impact, or agency, while static events like *heat* are more likely to be represented through metaphors involving intensity, state, or quality.

To address these aims, we pose the following research questions:

1) What are the source-target relations in weather metaphors in different languages?
2) How does the type of weather event (i.e., dynamic vs static) relate to the metaphorical patterns observed?
3) Is there a systematic relationship between metaphor type and the semantic typology of weather expression in the language?

The study has been structured as follows to better understand the main research interest: First, we introduce the data collection process and data analysis in the next section. Then, we present two analyses based on the theoretical framework adopted in the study, which focuses on the source-target domains of weather metaphors and the semantic typology found in previous studies on weather expressions.

2. METHODOLOGY

In this study, we investigate source-target relations in weather metaphors across languages and examine how these relate to the semantic typology of weather expressions. We collected data from ten typologically diverse languages: Turkish, English, Polish, Italian, Persian, Filipino, German, French, Swahili, and Korean. We selected these languages to ensure both typological variety and reliable access to native speakers who could provide consistent data.

We contacted native speakers of each language via email. We asked each informant to describe two weather scenes, one depicting rainy weather and the other sunny or hot weather,

in their native language.[5] We limited each response to 150-200 words to encourage focused yet expressive descriptions. After this, we asked the same informants to translate their descriptions into English. In this process, we did not ask for fluent or polished translations. Instead, we requested literal, one-to-one translations to help us identify lexical choices and source domains without stylistic interference. To ensure consistency, we required that all informants have an intermediate level of English, which we considered sufficient for literal translation.

In the data analysis, we followed two complementary accounts. Firstly, we used the framework of CMT to identify metaphorical mappings between source and target domains in the descriptions of precipitation and hot temperature. Second, we examined how these metaphorical structures relate to the existing semantic typology of rain and hot temperature, especially the WR/RF/RR classification by Mettouchi & Tosco (2011).

3. ANALYSIS AND DISCUSSION

We divided this section into two sub-sections. In the first sub-section, we focused on the source domain of two metaphors, precipitation (i.e., rain) and temperature (i.e., hot temperature), within the context of the CMT. In the second sub-section, we investigated the types of weather expressions by combining the accounts provided by the CMT and semantic typology.

3.1. CMT IN WEATHER EXPRESSIONS: PRECIPITATION AND TEMPERATURE

In this section, we analyse the metaphorical source domains of precipitation and temperature based on the translated weather descriptions we collected. We categorised metaphorical expressions by lexical type (i.e., noun, verb, adjective) and examined the source domains they invoke.

3.1.1 SOURCE DOMAINS OF PRECIPITATION

To make the analysis more manageable, we only included rain and raindrops when discussing the source of precipitation and excluded snow, drizzle, sleet, graupel, and hail. During the first stage of analysis, we divided our study into lexical categories of nouns, verbs, and adjectives, focusing on the source domains of precipitation.

[5] For the photos used in the creation of the data, see Appendix. First photo: Flickr, ursini danilo (https://flic.kr/p/61631514), Second photo: Flickr, Tim Green (https://flic.kr/p/d88ukS).

Nouns

(4) Filipino

Halos karamihan ng mga tao ay nakahanda sa pagdating

almost majority of the people be-3pl prepared for arrival

ng ulan.

of rain

Almost most people are prepared for the arrival of rain.

The metaphor in (4) uses the concept of ARRIVAL from a different domain to describe rain. ARRIVAL refers to the action of reaching or achieving an object or condition. In this case, it is used metaphorically to indicate the start of a precipitation event.

(5) Persian

Goobareh-ha andaze-yek goz gozal hast.

Raindrops size of a walnut walnut(adj) be-PRES.3SG

The raindrops are the size of a walnut.

The sentence in (5) uses a metaphor to describe the size of raindrops by comparing them to the size of walnuts. The original meaning of the word *walnut* refers to both the tree and its nuts, but in this context, it is used figuratively to represent the size of raindrops.

(6) Polish

I leje jak z cebra

It pour as from cats and dogs.

It is raining like cats and dogs.

In sample data from Polish (6), the metaphor of *cats and dogs* is used to refer to rain. This metaphor is also present in English, where *cats and dogs* refer to two different animal groups and metaphorically imply heavy rainfall. When analysing personal correspondence data related to precipitation, it was found that nouns are commonly used to express concepts from the source domain.

Verbs

(7) German

Es regnet in Strömen.

it rain-PRES in flow.

It is pouring rain.

In the German example (7), the source domain of the concept POUR is utilised to talk metaphorically about the target domain concept of rain in action. The word *Strömen* (En. to pour) indicates a flow of moving objects. Here, it fancifully describes a rain event, which is continuous at that moment. After analysing the entire dataset, we found that verbs were less frequently used as metaphorical source domain indicators than adjectives and nouns. In most cases, verbs describing weather events tended to be literal or structurally fixed (e.g., *rain falls*, *it shines*). The German example in (7) illustrates one of the few metaphorical uses of a verb (e.g., Strömen, "to pour") observed in our dataset.

Adjectives

(8) Swahili

Hali ya hewa inaonekana kuwa ya mvua kubwa.

condition the weather seem-PRES that-COMP the rain great

The weather seems to be a heavy rain.

In (8), the adjective *kubwa* (En. heavy) in the Swahili example aligns with similar uses in Turkish (*şiddetli*), Italian (*fitta*), and Polish (see, e.g., example 6), where rain is described using adjectives connoting density or intensity. These cross-linguistic parallels suggest a shared metaphorical framing of rain as a heavy or overwhelming presence. The same usage has been observed in the other languages in the dataset.

(9) Turkish

Rüzgar şemsiyeleri tutamayacağımız kadar şiddetli bir şekilde

Wind umbrella-PL hold-NEG-PRES-1PL as severe as

yağmura eşlik ediyor.

rain-ACC accompany-PROG-PRES-3SG

The wind is accompanying the rain so severe that we cannot hold them.

In the Turkish data sample given in (9), while this example includes a vivid description of a stormy scene, we acknowledge that its metaphorical relevance centres more on the wind than the rain itself. We have kept it to show the collocational frame of *şiddetli yağmur* (En. heavy/severe rain), which is commonly used metaphorically to describe the intensity.

(10) Italian

La pioggia cade fitta sulle personee si possono

the rain fall-PRES dense on people and can

notare ledimensioni delle gocce sul pavimento

note the size of drops on floor.

The dense rain falls on people, and you can see the size of the drops on the ground.

In sentence (10), the word *fitta* (En. dense) is used metaphorically to describe rain. This adjective refers to objects that are closely packed together and crowded. It is also used to depict an intense level of precipitation occurring in a particular environment. Although this expression involves an adjectival construction, we interpret it as metaphorical within the framework of the CMT. CMT holds that metaphorical mappings are not limited to fixed phrases or overt comparisons but can also emerge through sensory descriptions that structure abstract phenomena using concrete, embodied experience (Evans, 2019; Evans & Green, 2006; Lakoff, 1993).

In this case, the Italian adjective *fitta* frames the rain in terms of physical compactness or visual opacity, projecting a spatial and perceptual quality onto the intensity of the precipitation. This construction illustrates the conceptual metaphor DENSITY IS INTENSITY, where an abstract meteorological experience is conceptualised through a tangible, spatial domain. Such examples underscore how metaphor can operate subtly through lexical choices that rely on perceptual grounding rather than figurative language in the narrow sense.

The frequent use of adjectives to express metaphorical meanings related to precipitation aligns with prior research that shows adjectives are central to how people perceive and evaluate atmospheric conditions. Stewart (2007), for instance, identifies a set of latent dimensions underlying the use of over 140 adjectives in describing weather and climate, revealing the psychological and linguistic significance of evaluative terms such as heavy, dull, threatening,

and pleasant. These findings emphasise the role of adjectival framing in the metaphorical conceptualisation of weather events across languages.

Based on the analysed dataset, adjectives appear to be the primary lexical category used to describe precipitation events. In particular, when presented with a picture of rain during the data collection phase, informants frequently used adjectives such as *dense*, *strong*, and *heavy*.

3.1.2 SOURCE DOMAINS OF TEMPERATURE

Our dataset solely examines high temperatures and does not include data on cold or mild temperatures. In the initial analysis stage, we categorised the data into lexical categories of nouns, verbs, and adjectives, focusing on the source domains of temperature.

Nouns

(11) Turkish

Havanın yakıcılığı…

weather-GEN burning

The burning of the air…

The word *burning* is used metaphorically in (11) to refer to temperature. The quoted phrase describes objects on fire, but it emphasises how high temperatures can impact people.

Out of all the languages studied, nouns are the least commonly observed lexical category. Additionally, the few examples that do exist are often based on adjectives, such as the Turkish example provided above.

Verbs

(12) Persian

Khorshid ba derakhshesh mitabad.

Sun with shine PROG-shine-PRES-3SG

The sun is fully shining and makes everywhere bright and hot.

Sentence (12) uses the metaphor of *shine* from the source domain to refer to temperature in the target domain. As discussed earlier, we consider this instance metaphorical under BRIGHTNESS IS HEAT mapping. The use of *shine* draws on a concrete visual sensation to conceptualise the abstract quality of temperature, in line with how sensory descriptors can operate metaphorically within the CMT framework.

Similar to nouns regarding source domain concepts of temperature, verbs are the other least observed lexical category in the dataset.

Adjectives

(13) French

… beau soleil d'été

Beautiful sun-NOM summer…

… beautiful summer sun…

The phrase found in (13) comes from the French dataset. Following the same rationale, we interpret the adjective *beau* (En. beautiful) as metaphorical in this context. It maps a subjective aesthetic judgment onto a meteorological condition, aligning with the broader metaphorical pattern where positive emotional valence or pleasantness is projected onto sunny or warm weather.

(14) Italian

Il cielo è abbastanza limpido.

The sky-ACC to-be-PRES enough clear.

The sky is clear enough.

In sentence (14), the word *limpido* (En. clear) is used to describe temperature. It means something that is not dark or obscure and can also represent weather without clouds. This meaning is common in many languages and is often used to describe temperature in the context of the sky. Other commonly used source domain concepts for this purpose include WARM, BRIGHT (see, e.g., example 12) and HOT AND BLUE.

3.2. SEMANTIC TYPOLOGY OF WEATHER EXPRESSIONS

While the core focus of this study is metaphorical variation, it is essential to consider the semantic and grammatical structures through which these metaphors are linguistically realised. The ways in which weather expressions are encoded, particularly the distribution of lexical material across predicates and arguments, can influence how metaphorical mappings are constructed and interpreted.

In this section, we revisit the semantic typology of weather expressions, particularly those involving rain and hot temperature, to explore whether the event structure of these phenomena (i.e., dynamic vs static) correlates with differences in metaphorical framing. This

typological perspective complements the metaphor analysis presented in Section 3.1 by showing how cross-linguistic variation in syntax and lexical encoding may support or constrain the emergence of particular metaphor types. This section is divided into two parts: the first focuses on precipitation (as a dynamic event) and the second on high temperature (as a stative condition).

3.2.1 SEMANTIC TYPOLOGY OF RAIN

A foundational distinction in the expression of weather events is that between dynamic and stative phenomena. Precipitation, such as rain, is typically construed as a dynamic event, often associated with movement or force, while temperature is usually treated as stative. This contrast has important implications for how languages grammatically encode weather expressions and the kinds of metaphors they support. Dynamic events more readily invite metaphors based on motion, impact, or agency, whereas stative conditions lend themselves to mappings related to state, substance, or intensity.

To analyse this variation, we adopt Mettouchi and Tosco's tripartite typology (2011), which is complemented by Eriksen et al. (2010). This model classifies meteorological constructions based on whether the predicate or argument encodes the weather event, and whether these elements are semantically specific or general. The typology includes:

a) World-rains languages (WR): The predicate of the clause denotes rain (e.g., English, Italian, German, French, Polish, Filipino).
b) Rain-falls languages (RF): Argument in the subject position denotes rain (e.g., Persian, Korean).
c) Rain-rains languages (RR): Two words form the same lexeme and are used adjacently (e.g., Turkish, Swahili).

This general framework has recently been broadened by Toma (2021), who presents a subject-based morphosyntactic typology based on data from 99 languages. Toma's analysis shows that subject realisation and syntactic encoding systematically correlate with event type, particularly in distinguishing between dynamic phenomena (e.g., precipitation) and stative conditions (e.g., temperature). Complementing this perspective, Bletou (2012) offers a cross-linguistic analysis of weather predicates, proposing decompositions such as FALL RAIN and CAUSE [FALL RAIN] to account for alternations in unaccusative and unergative behaviour. Beltou's discussion of auxiliary selection, subjecthood, and noun incorporation provides compelling evidence that argument structure variation reflects deeper event-structural and

conceptual distinctions. Additionally, Álvarez-López (2021) examines precipitation constructions in English, French, and Spanish, revealing that even among closely related languages, argument structure, lexical derivation, and the status of precipitation nominals differ significantly. Crucially, Dong et al. (2021) examine directionality in weather expressions across 221 Sinitic languages, showing that downward verbs like *jiàng* (En. to fall) are used metaphorically even for non-falling phenomena (e.g., fog, dew). Their study challenges the idea of a uniform typology within languages and demonstrates that conceptual and ontological factors shape grammatical encoding. Collectively, these studies reinforce our argument that variation in the morphosyntax of weather expressions is interwoven with metaphorical construal and event structure.

Based on this framework, we classified the languages in our study: English, German, Italian, and Arabic fall under the WR type; Persian and Korean represent the RF type; and Turkish and Swahili exemplify the RR pattern. The following examples illustrate these types:

(7) German

Es regnet in Strömen.

İt rain-PRES in flow.

It is pouring rain.

The word *es* (En. it) is known as a dummy pronoun and bears a syntactic explanation. The verb *regnet* (En. rain) signifies the action of rain falling, making it the main point of the sentence. The pronoun *es* serves as a supporting element. This concept can also be observed in the Italian language.

(15) Italian

Piove.

rain-PRES

It is raining.

Examples (7) and (15) both pertain to the meaning of precipitation in the verb predicate. However, there are differences between them that become more apparent when looking at examples from RF type languages.

(16) Persian

Baran seylasa mibarad.

rain flood PROG-rain-PRES-3SG

The rain is flooding.

Unlike the WR type, extract (16) suggests a contrast. In this instance, the subject position contains the argument that conveys the meaning. The figure is located in the subject, and the verb serves as the grounding unit. In RF languages, the predicate *to flood* is semantically vague and does not explicitly encode the raining event.

Lastly, in RR languages, both the predicate and argument encode rain. (3) is reiterated below:

(3) Turkish

Yağmur yağıyor.

rain rain-PROG.PRES.3SG

It is raining.

In sentence (3), the words *yağ-* (En. to rain) and *yağmur* (En. rain) are part of the same root word. Both words contribute to the meaning of the sentence, and neither the subject nor the verb is more important than the other when it comes to the concept of rain.

While these types capture major structural differences in how rain is encoded, our data suggest that these grammatical patterns do not lead to systematic variation in metaphorical construal. Across WR, RF, and RR languages, speakers tend to use adjectives and nouns to express metaphors of rain involving heaviness, arrival, and density. Thus, although figure-ground relations may shift depending on syntactic structure, the underlying conceptual mappings appear broadly consistent.

After categorising rain precipitation events as WR, RF, and RR, the analysis shifts to examining whether the same classification can be applied to other weather expressions, such as high temperatures.

3.2.2 SEMANTIC TYPOLOGY OF HOT WEATHER

As previously noted, temperature expressions, unlike precipitation, typically encode stative events. These expressions do not describe motion or change but refer to ongoing or

complete conditions, such as heat or sunlight, at a given moment. This distinction between dynamic and stative event types not only affects grammatical encoding but also shapes the range of possible metaphorical construals.

The semantic typology established by Mettouchi and Tosco (2011) is well-suited for dynamic meteorological phenomena like rain but is less directly applicable to stative expressions such as temperature. In particular, the WR/RF/RR distinction, which focuses on event realisation in the predicate vs argument, becomes blurred when the event lacks an inherent process or agent. Moreover, since our data were elicited through written personal correspondences, capturing the full syntactic variability of stative constructions may require further empirical elaboration.

Nonetheless, our dataset reveals some structural regularities across languages in the expression of hot weather. Below are examples in Italian and Persian, which are WR and RF, respectively.

(17) Italian

Il cielo è abbastanza limpido.

The sky is quite clear.

The sky is quite clear.

(18) Persian

Hava aftabi hast.

weather sunny be-PRES.3SG

The weather is sunny.

Although Italian and Persian differ in how they refer to rain typologically, they share similar semantic patterns. Specifically, when describing weather conditions, there is a more complex range of meanings. This pattern has also been found in other languages from which the data was gathered.

These typological patterns illustrate that metaphorical variation does not occur in isolation from grammatical and structural constraints. The semantic realisation of weather events, such as whether the rain is encoded in the predicate, the subject, or both, can influence which lexical items become available for metaphorical use and how these metaphors are linguistically distributed. While the conceptual metaphors themselves may remain stable across

languages (e.g., RAIN IS A FORCE, HEAT IS A SUBSTANCE), the ways in which these are expressed through adjectives, verbs, or compounds are often affected by the typological profile of the language. Therefore, typological analysis enhances our understanding of the interface between conceptual mappings and linguistic form.

4. CONCLUSION

In the study, we explored metaphorical expressions related to precipitation (e.g., rain) and temperature (e.g., heat) across ten typologically diverse languages. Drawing on the CMT and previous research on semantic typology, we analysed how weather events are metaphorically encoded and how this encoding interacts with underlying grammatical structures. We focused on identifying source-target domain relations and lexical categories involved in metaphorical mappings, and examined whether these mappings vary according to the dynamic (e.g., rain) or stative (e.g., heat) nature of weather events.

Concerning our first research question, i.e., source-target relations in weather metaphors, we found that nouns and adjectives are the most common lexical carriers of metaphors across languages. Metaphors such as DENSITY IS INTENSITY, ARRIVAL IS PRECIPITATION, and BRIGHTNESS IS HEAT were frequently observed, revealing a tendency to use concrete, embodied domains (e.g., weight, movement, light) to conceptualise abstract weather conditions. Our second question explored whether the event type (dynamic vs static) affects metaphorical patterns. The data showed that dynamic events like *rain* are typically framed through metaphors involving motion, force, and agency. In contrast, static events like *heat* evoke metaphors grounded in state, substance, or intensity. For the third research question, i.e., whether semantic typology (i.e., WR, RF, RR) correlates with metaphor types, we found that while the conceptual metaphors tend to be shared across typological profiles, the linguistic realisation (i.e., lexical choice and syntactic structure) is shaped by the semantic encoding patterns of each language.

Despite the insights offered by this study, certain limitations must be acknowledged. This analysis is based on a relatively limited dataset comprising ten languages and two weather conditions, which may restrict the generalisability of the findings. Additionally, data were elicited through written responses rather than naturally occurring discourse, potentially constraining the range and spontaneity of metaphorical expressions observed.

Despite these constraints, the study provides a significant contribution to the understanding of metaphorical variation. Integrating CMT with semantic typology reveals that metaphor is influenced not only by universal cognitive mechanisms but also by language-

specific encoding strategies. The findings underscore that metaphor is not merely a conceptual phenomenon detached from form but fundamentally embedded in a language's grammatical and lexical architecture.

REFERENCES

Alba-Salas, J. (2004). Lexically selected expletives: evidence from Basque and Romance. *SKY Journal of Linguistics*, *17*, 35-100.

Álvarez-López, Y. (2021). From meteorology to linguistics: What precipitation constructions in English, French and Spanish tell us about arguments, argumenthood, and the architecture of the grammar. *Glossa: A Journal of General Linguistics, 6*(1), 1-28. https://doi.org/10.5334/gjgl.1271

Andrason, A. (2019). Weather in Polish: A contribution to the typology of meteorological constructions. *Studia Linguistica*, *73*, 66-105. https://doi.org/10.1111/stul.12091

Bauer, B. (2011). *Archaic syntax in Indo-European: The spread of transitivity in Latin and French* (Vol. 125). Walter de Gruyter.

Bletou, A. C. (2012). Why does it always rain on me? On weather verbs. In B. Suranyi & D. Varga (Eds.), *Proceedings of the First Central European Conference in Linguistics for Postgraduate Students* (pp. 59-81). Pazmany Peter Catholic University.

Dong, S., et al. (2021). Directionality of atmospheric water in Chinese: A lexical semantic study based on linguistic ontology. *SAGE Open*, *11*(1), https://doi.org/10.1177/2158244020988293

Grady, J. E. (2007). *Metaphor*, In. D. Geeraerts, & H. Cuyckens (Eds.) *The Oxford handbook of cognitive linguistics* (pp. 188-213). Oxford University Press.

Eriksen, P. K., Kittilä, S., & Kolehmainen, L. (2010). The linguistics of weather: Cross-linguistic patterns of meteorological expressions. *Studies in Language. International Journal sponsored by the Foundation "Foundations of Language"*, *34*(3), 565-601. https://doi.org/10.1075/sl.34.3.03eri

Eriksen, P. K., Kittilä, S., & Kolehmainen, L. (2012). Weather and language. *Language and Linguistics Compass*, *6*(6), 383-402. https://doi.org/10.1002/lnc3.341

Evans, V. (2019). *Cognitive linguistics: A complete guide.* Edinburgh University Press.

Evans, V. & Green, M. (2006). *Cognitive linguistics: An introduction*. Edinburgh University Press.

Kövecses, Z. (2010). *Metaphor: A practical introduction* (2nd ed.). Oxford University Press.

Kövecses, Z. (2017). Conceptual metaphor theory. In E. Semino, & Z. Demjén (Eds.), *The Routledge handbook of metaphor and language* (pp. 13-27). Routledge.

Lakoff, G. (2008). *Women, fire, and dangerous things: What categories reveal about the mind*. University of Chicago Press.

Lakoff, G. (1993). The Contemporary theory of metaphor, In A. Ortony (Ed.) *Metaphor and thought* (2nd edition) (pp. 202-252). Cambridge University Press.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. The University of Chicago Press.

Langacker, R. (1999). *Foundations of cognitive grammar*. *Volume II: Descriptive application*. Stanford University Press.

Levin, B., & Krejci, B. (2019). Talking about the weather: Two construals of precipitation events in English. *Glossa: A Journal of General Linguistics*, *4*(1), https://doi.org/10.5334/gjgl.794

Mettouchi, A., & Tosco, M. (2011). Impersonal configurations and theticity. In A. Malchukov, & A. Siewierska (Eds.), *Impersonal constructions: A cross-linguistic perspective* (pp. 307-322). John Benjamins.

Ruwet, N. (1986). On weather verbs. *Talk in Chicago Linguistic Society*, April 1986. Chicago Linguistics Society.

Ruwet, N. (1989). Weather verbs and the unaccusative hypothesis. In C. Kirschner, & J. A. DeCesaris (Eds.), *Studies in Romance linguistics: Selected proceedings from the XVII Linguistic Symposium on Romance Languages* (pp. 313-345). John Benjamins.

Saarinen, S. (1997). Il pluit, idet dozhd', it rains, es regnet, llueve, piove. In:Alinei M, Barros Ferreira M, Contini M (eds) *Atlas linguarum Europae (ALE), Volume I: Cinquième fascicule, Cartes et Commentaires* (pp. 1-34). Istituto Poligrafico e Zecca dello Stato, Roma.

Salo, M. (2011). Meteorological verbs in Uralic languages–are there any impersonal structures to be found. In A. Malchukov, & A. Siewierska (Eds.), *Impersonal constructions: A cross-linguistic perspective* (pp. 395-438). John Benjamins.

Stewart, A. E. (2007). Linguistic dimensions of weather and climate perception. *International Journal of Biometeorology*, *57*, 57-67. https://doi.org/10.1007/s00484-007-0101-z

Toma, D. O. (2021). *Weather sentences in a cross-linguistic perspective* [Master's Dissertation]. Universidad del Pais Vasco. http://hdl.handle.net/10810/70097

Appendix

Photo 1: Rainy weather

Photo 2: Sunny weather

EXTENDED ABSTRACT

This study examines cross-linguistic variation in conceptual metaphors used to describe two distinct meteorological phenomena—precipitation and temperature—through the lens of Conceptual Metaphor Theory (CMT). By focusing on ten typologically diverse languages—Turkish, English, Polish, Italian, Persian, Filipino, German, French, Swahili, and Korean—the study investigates how metaphorical mappings are structured across languages, particularly regarding lexical categories (nouns, verbs, adjectives) and the cognitive construal of weather as either dynamic (e.g., rain) or stative (e.g., heat) events. The aim is not only to catalogue metaphorical expressions but also to comprehend how these metaphors are shaped by typological and grammatical structures intrinsic to each language.

Data for the study were gathered through email correspondence with native speakers, each of whom was asked to describe two weather scenes (rainy and sunny) in their native language and then provide literal English translations of their descriptions. These literal translations facilitated a clearer observation of the lexical and grammatical structures underlying metaphorical expressions. This methodology offered insight into how metaphor is not merely a conceptual operation but also one that is mediated by grammar and syntax.

Findings from the study reveal that rain, typically experienced as a dynamic phenomenon, tends to evoke metaphors that draw from source domains of motion, force, and agency—for example, rain "arriving," "pouring," or being "dense" like a substance. These metaphors frequently appear in adjectival or nominal forms, suggesting that perceptual and embodied experiences have a strong influence on the lexical encoding of rain. In contrast, heat or sunny weather, perceived as more stative, is more commonly associated with metaphors of state, intensity, and brightness, such as "the burning of the air" or a "beautiful summer sun."

The study further investigates whether the typological classification of weather expressions correlates with metaphorical variation. Drawing on the tripartite semantic typology proposed by Mettouchi and Tosco (2011), languages are classified into three groups: World-Rains (WR), where the predicate alone encodes precipitation (e.g., "It rains"); Rain-Falls (RF), where rain serves as the subject and the predicate is metaphorical or general (e.g., "Rain falls"); and Rain-Rains (RR), where both the subject and predicate encode rain, often redundantly (e.g., "Rain is raining"). The study identifies English, Italian, German, and Arabic as WR languages; Persian and Korean as RF languages; and Turkish and Swahili as RR languages.

However, the analysis reveals that while these structural types influence grammatical encoding, they do not systematically predict the type of metaphor. Across WR, RF, and RR languages, the metaphors used to describe rain and heat remain conceptually consistent, indicating that the source-target mappings posited by CMT are broadly shared, even if their linguistic realisations differ. This suggests a cognitive universality of metaphor that is locally shaped by grammatical structure, rather than being fully determined by it.

Temperature expressions further complicate this typology. Unlike rain, heat lacks inherent dynamism and is typically expressed through stative constructions. This divergence results in fewer metaphorical verbs and a reliance on adjectives and nominal phrases to convey experiential qualities (e.g., “clear sky,” “burning air,” “beautiful sun”). Consequently, the WR/RF/RR framework, while effective for precipitation, becomes less applicable to temperature, necessitating a more flexible approach that incorporates event structure and experiential salience.

In summary, the study contributes to the literature by demonstrating how metaphor is not only a universal conceptual phenomenon but also a product of linguistic form. The interaction between metaphorical thought, lexical category, and syntactic structure reveals the embodied and cognitive foundations of language, while illustrating the plasticity of metaphor across linguistic systems. Additionally, it provides an empirical synthesis of CMT and semantic typology, reinforcing the view that metaphorical variation is constrained yet enriched by grammatical diversity.