

## 1 Introduction

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*For what is time? Who can readily and briefly explain this? Who can even in thought comprehend it, so as to utter a word about it? But what in discourse do we mention more familiarly and knowingly than time? And, we understand, when we speak of it; we understand also, when we hear it spoken of by another. What then is time? If no one asks me, I know: if I wish to explain it to one that asketh, I know not.*

Augustine, ca. 400 CE/1907, p. 262

### 1.1 Introduction

One of the most fundamental and enigmatic aspects of human experience, forming part of its rich warp and weft, is that of time. We cannot see, hear, or touch time, yet it is ever-present in our daily lives and activities. Time and its very nature have captivated the imaginations of scholars since antiquity; indeed, in one of the earliest documented reflections on time, Aristotle (ca. 350 BCE/1984a, p. 369) contemplates whether time can be considered as belonging to ‘the class of things that exist or to that of things that do not exist’. Extending even further back, we see early attempts to reify time through the use of sundials and shadow clocks dating to the second millennium BCE in Egypt and China (Richards, 1999). In the modern day, fascination with time has not abated – arguably, no other topic matter has pervaded scientific inquiry as extensively as time. Philosophers describe the specious present – the experience of ‘nowness’, of which we are ‘immediately and incessantly sensible’ – as the most basic time experience (James, 1890/1950, p. 631; cf., Dainton, 2022). Physicists talk about the arrow of time along which time is directed, such that we remember the past and anticipate the future (Eddington, 1928; Hawking, 1988; Le Poidevin, 2003). Psychologists observe perceived variation in the passage of time: time flies when you’re having fun (known as *temporal compression*) but slows down when you’re bored (known as *protracted duration*) (Flaherty, 1999). Indeed, the subject of time as a perennial source of intrigue and wonder extends far beyond the sciences as well, pervading all aspects of human experience: historians build timelines and

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genealogists trace them. Poets grapple with time as they question what days are for (*Days*; Larkin, 1964), and artists depict time through images, like melting clocks (*The Persistence of Memory*; Dalí, 1931). We take journeys through time in works of fiction, such as *The Time Machine* (Wells, 1895) and *The Time Traveler's Wife* (Niffenegger, 2003). We travel back and forth through time in television programmes (*Quantum Leap*) and film (*Groundhog Day*) – sometimes trapped in time loops – and we're transported through time using time-travelling devices that mimic real-world objects, like police boxes (*Doctor Who*) and cars (*Back to the Future*).

The importance of time in human experience is also demonstrated in everyday language. In studies of word frequency, 'time' (along with words denoting units of time, such as 'year', 'day', and 'week') has been shown to rank among the most frequent nouns (e.g., English and Spanish, see Rabadán et al., 2009; Ramón, 2006; Estonian, see Eslon & Matsak, 2009; see also Mahlberg, 2006). However, standardized temporal units like these, as well as variable temporal units, such as 'dawn' and 'dusk', and temporal markers, such as 'now' and 'then', form just a small subset of the rich and varied language that we habitually use to talk about time. Instead, time tends not to be described in its own terms but 'in significant part metaphorically' to the extent that it is 'virtually impossible' for us to talk about it without recourse to metaphor (Lakoff & Johnson, 1999, p. 137). For example, we might talk about 'moving forward' a meeting so that we can 'save' some extra time and 'spend' it on a 'long' lunch break. Here, we see instances of time being talked about and understood in terms of motion, money, and space, respectively. But why do we do this? One proposal is that abstract concepts – those that cannot be perceived directly through the senses – are understood through embodied metaphorical experiences. In the domain of time, for instance, the embodied experiences of navigating through, orienting within, and observing motion in space provide a basis for understanding expressions like 'we've *arrived* at the moment of truth', 'holidays are *coming*', and 'summer *follows* spring' (NOW Corpus<sup>1</sup>; cf., Clark, 1973; Lakoff & Johnson, 1999). In this way, our sensory-motor experiences and our interactions with people, objects, and the world at large provide a basis for the ways in which we talk and think about time, along with a wide variety of other topics (cf., Rosch et al., 1991). To understand time, then, requires an understanding of the workings of metaphor and, in particular, spatial metaphors for time.

As might be expected due to the universal aspects of sensory-motor experience that human beings share, a vast array of metaphorical connections,

<sup>1</sup> The Corpus of News on the Web (NOW; Davies, 2016b–) is a 15-billion-word corpus comprised of web-based newspapers and magazines from 2010 to the present. Throughout the book, we will make use of authentic English examples drawn from language corpora to illustrate various phenomena.

including those between space and time, have been found to emerge in a large number of genetically unrelated languages (e.g., Kövecses, 2002, 2008; Majid et al., 2013). However, while there may, indeed, be many aspects of experience that are universal, the focus on these commonalities has often overshadowed the unique variations evident both in the ways people experience physical reality and the ways they experience metaphor. As a consequence, theoretical treatments of space-time metaphor have suffered from two primary weaknesses. First, the focus on universality has directed the attention of metaphor researchers away from the complex nature of literal spatial relations revealed by cross-linguistic research and the repercussions of this complexity for metaphors that draw upon space as a source domain. Second, although space is certainly an important factor in structuring how people conceptualize time, it provides only part of the picture – as we would expect if metaphor truly drew upon embodied experience (cf., Lakoff & Johnson, 1999). The very complexity of spatial experience – along with embodied experience more generally – opens the way for each individual to conceptualize and draw upon these experiences in their own unique way. As noted by Littlemore (2019), potential sources of interpersonal variation are wide-reaching, including, but not limited to: environment and context, the shape and size of one's body, age, gender, physical or linguistic impairment, personality, ideology, political stance, religious beliefs, and cultural and linguistic background (see also El Refaie, 2019). Thus, a deeper and more nuanced understanding of metaphor must go beyond the influences of universal bodily experience to seek out the roles of each of these factors and the interconnected ways in which people may draw upon them in metaphor. More to the point, an inquiry into the metaphors that underpin our everyday realities of time would require consideration of the varied ways in which we draw on spatial experiences, as well as the broader variety of 'human experience' on an individual level.

Both sources of variation have surfaced as topics of interest in their own right across the cognitive sciences in recent years. Research on cross-linguistic variation in the lexicalization of spatial relations has revealed the semantic complexity underlying a wide array of spatial terms (e.g., Feist, 2008; Levinson et al., 2003; Talmy, 2000) and has suggested that there is no single experience of space shared by all peoples (Majid et al., 2004). This variation thus precludes the existence of a universal spatial source for the metaphorical conceptualization of time. Thus, the observation that space is used to understand time is just the beginning of the conversation – an invitation to explore space and time in tandem to achieve a deeper understanding of each.

Interwoven with the connection between space and time is the individual themselves, with their own perspective not only on the domains individually but also on the ways in which they might interact. The notion of 'individual differences' is likewise not new to linguistics or, indeed, to the cognitive sciences in

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general. However, as noted by Dąbrowska (2016), while the existence of individual differences is readily acknowledged in theory, in practice, there has been a tendency for them to be ‘swept under the carpet’ (p. 485). Nevertheless, in recent years attempts to study individual differences and to consider their deeper theoretical implications have been accumulating. One notable contribution to this effort, positioned by the author as a ‘challenge to the status quo’, is Jeannette Littlemore’s (2019), *Metaphors in the Mind: Sources of Variation in Embodied Metaphor*. Drawing on an array of empirical research from behavioural and neurological studies, along with naturally occurring discourses, Littlemore (2019) takes a wide-angle lens approach to individual differences in embodied metaphors across domains, shedding light on different forms of variation in embodied metaphor according to their type, their function, and the context within which they occur. In a parallel fashion, El Refaie (2019) provides an additional dimension to individual differences in metaphor research through her book-length treatment of *Visual Metaphor and Embodiment in Graphic Illness Narratives*, which explores how metaphors vary in accordance with an individual’s state of health. More recently, Julich-Warpakowski’s (2022) book-length investigation into *Motion Metaphors in Music Criticism* has provided evidence of individual differences in the perception of musical motion metaphors between musicians and non-musicians. What is missing, however, from this intervention in metaphor research is a detailed and focused exploration of the roles of individual, contextual, cultural, and linguistic factors in the metaphorical conceptualization of a domain that is so woven into our daily lives that it is both seen and unseen; a domain that, due to its very ubiquity, has attracted the attention of researchers across the cognitive sciences. This book seeks to fill this gap. Characterized as the ‘model system of choice’ for linguistic and psychological investigations into the relationships between metaphorical source and target domains, time has been likened to the ‘fruit fly’ of metaphor studies (Casasanto, 2009b, p. 128). As such, time arguably provides the ideal arena for an in-depth exploration of individual differences in the conceptualizations of metaphor, thereby providing a new dimension to the expanding world of metaphor scholarship. In addition, through its metaphorical connections to space, time opens the way to explore the repercussions of complexity in a source domain for resultant metaphorical conceptualizations. By bringing together a detailed examination of the domain of space with the individuality of those who use and interpret metaphor, in this book we provide a more nuanced understanding of what metaphor is and the ways in which it underpins our conceptualizations of time.

## 1.2 Overview

Metaphor has been an important object of study not only across a range of disciplines but also over the course of millennia. Thus, an understanding of

how and why there are individual differences in the experience of metaphor and, in particular, of metaphors for time requires a Janus approach: looking backward to understand what metaphor is and how it works before looking forward to explore the impact of the variation discussed above on metaphor conceptualization. To do this, we will begin in Chapter 2 by critically assessing theoretical accounts of metaphor across fields and throughout history. As we will see, early accounts of metaphor treated it as a linguistic trope through which the similarity between dissimilars is highlighted. This view broadened in later work through a consideration of the ways in which metaphor may serve to give rise to new concepts. In this way, metaphor came to be viewed not only as language but also as a product of the mind; an insight that led to accounts of metaphor as a primarily conceptual phenomenon. Building on this, we end the chapter with a view into the ways in which conceptual metaphor plays out in the particular case of spatial metaphors for time. In tracing the development of scholarly thinking about metaphor, first as a phenomenon of language and later, of cognition, we aim to identify common threads that may help to bring together an otherwise fragmented area of study.

In Chapter 3, we turn our attention from theoretical treatments of metaphor to the evidence that has given rise to these theories. Drawing upon both linguistic and non-linguistic sources of evidence, scholars have established that the metaphors we use rest on a set of conceptual connections between domains, whereby metaphorical target domains inherit conceptual structure from metaphorical sources. Alongside this generalization, however, we find evidence that the ways in which two domains are conceptually connected vary across languages, suggesting that there is more to metaphor than merely a broad conceptual connection between two domains. With this in mind, we turn our focus to contemporary approaches to understanding one particular set of conceptual connections: the use of space as a metaphoric source domain for understanding time. Through this review of contemporary approaches to one family of metaphors, we will lay the foundation for a deeper exploration of the confluence of linguistic, cultural, and individual factors that interact with the cross-domain conceptual connections that underlie metaphor.

Over the next two chapters, we examine spatial metaphors for time through different lenses in order to better understand the ways in which our experiential and cultural conceptualization of space is used to structure our concepts of time. We begin in Chapter 4 by examining the source domain itself, in which we concentrate on two kinds of spatial language that are used metaphorically: the language of spatial orientation and the language of spatial motion. As we will see, both are highly variable across languages, hinting at the complexity of the source domain and, in turn, the complex nature of the mapping from space to time. In light of this, we ask in Chapter 4 whether metaphoric uses of spatial language likewise differ across the languages of the world, and we consider the

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implications of this variability for our understanding of the conceptual connections that define metaphor.

In Chapter 5, we broaden our view of language and space and the influence each may have on the conceptualization of time. We turn our focus first to language, examining the roles of words and constructions in the interpretation of metaphor. Following on from this, we revisit the psychological reality of space-time metaphorical connections in light of cross-cultural differences in the language of the source domain and in the language of metaphor. As we will see, the cross-linguistic evidence reinforces two earlier conclusions: that the connections between space and time are indeed real in the minds of speakers, and that they alone are insufficient to account for the metaphorical conceptualization of time. Rather, the interpretation of space-time metaphor results from the combination of cross-domain connections along with details of the language used in the metaphoric statement, reiterating the complexity inherent in metaphoric mapping. From there, we turn our attention to the ways in which cultures make use of space beyond language, including evidence from the unconscious gestures that people enact while they speak, as well as cultural conventions such as writing and calendars. As we will see, these spatializations likewise combine with language to determine the orientation of the mental timeline. Taken together, this evidence strengthens the conclusion that the characterization of metaphor as a connection between two domains provides only a part of the explanation for how metaphors are interpreted and used. At the same time, it opens a window onto the ways in which different sources of spatial information may combine to give rise to a metaphorical conceptualization.

Having established both the cognitive nature of metaphor and the interplay of a variety of influences on metaphorical conceptualization, we turn in Chapters 6 and 7 to the role of the cognizer themselves in the construction of metaphoric meaning. There are infinite ways in which individuals, and the situations in which they find themselves, may differ from one another, many of which intersect with our conceptualization of space and may, therefore, impact our metaphorical conceptualization of time. By situating the role of individual differences at the forefront, these two chapters aim to enrich our understanding of influences on the interpretation of space-time metaphors. We turn our attention first, in Chapter 6, to the evidence that has arisen using a single influential paradigm: McGlone and Harding's (1998) *Next Wednesday's meeting* question. Following on from this review and based on evidence that metaphorical reasoning may also vary depending on the task at hand, in Chapter 7 we seek converging evidence of individual differences in metaphorical conceptualizations of time from studies that used an additional temporal reasoning paradigm. As both paradigms have sparked large literatures examining a complementary range of effects, the evidence across the two paradigms strengthens our confidence in the central role played by the cognizer themselves

in the interpretation of metaphor. Taken together, the findings reviewed in these two chapters round out the picture of space-time metaphor as a phenomenon resulting not only from the mapping of conceptual structure from a source domain to a target domain but as a highly individualized conceptual mapping dependent on factors associated with the cognizer; the cultural, linguistic, and immediate context; and the two domains involved in the mapping.

The range of influences surveyed over the course of the book demands an updated understanding of metaphor which incorporates the influences from multiple factors, both individually and in concert with one another. We endeavour in Chapter 8 to explore the implications of this complex view of metaphor, both beyond time and space and beyond the laboratory. Because metaphor is both linguistic and extra-linguistic, our argument transcends the study of metaphor, as well as the field of linguistics, to address several core issues that are of significance to scholars working in neighbouring disciplines. First, the linguistic realization of metaphor requires that any theory of language must account for metaphoric language and its interpretation. In this way, an updated understanding of metaphor presents new constraints on the explanatory accounts put forth in linguistics. Second, our investigation of a wide range of conceptual factors embeds metaphor within a richly interconnected conceptual system whereby language is not a separate entity but rather an integral part of the system, with lexical items providing pathways into the conceptual system rather than packagings of conceptual knowledge in the form of encapsulated meanings (cf., Elman, 2009). This line of argument is strengthened by evidence that metaphor is produced through other modalities in addition to language, suggesting that the same conceptual structures are available across different communicative means. As such, this programme of research will expand our understanding of the nature of metaphor and, by extension, our understanding of the use and interpretation of language and, indeed, of the conceptual system itself.

## 2 The Theory of Metaphor

### From Language to Cognition

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#### 2.1 Introduction

Imagine that your friend just told you that ‘we have to move the party to next week’? What lies in common between this rather mundane statement and Romeo’s poetic proclamation that ‘Juliet is the sun’? Both are instances of metaphoric language. Metaphor has captivated the attention of thinkers about language for millennia, although people’s understanding of what metaphor is and how it works has shifted radically over this time. As a case in point, while current theories consider both examples that opened this chapter to be metaphorical, classical thinkers would only have considered Romeo’s proclamation to be. As we will see, a growing understanding of the workings of metaphor has given rise to the insight that, rather than being mere ornament, metaphor underpins many of the ways in which we use language, formally and informally, throughout our daily lives. In this chapter, we will survey the evolution of the theory of metaphor from its beginnings that explained metaphor as a linguistic flourish through to current views of metaphor as a mapping between two concepts. Along the way, we will see accounts of metaphor which fall out of favour, only to resurface years later alongside an expansion of phenomena that fall under metaphor’s umbrella. Included in this expansion we find the productive system of metaphors mapping SPACE to TIME, to which we will turn as we draw the chapter to a close. As these metaphors are not structured as explicit comparisons, they do not fit the mould of the metaphors discussed in early accounts of the trope, rising in importance only when metaphor comes to be treated as a phenomenon of the mind.

#### 2.2 Metaphor as Linguistic Flourish

For many of us, the notion of a metaphor – which comes from the Greek *metapherein*, meaning ‘to transfer’ (*OED*, nd b) – is not an unfamiliar one. On a general level, metaphor is a figure of speech in which one entity is described in terms of another, often quite different, entity, as in Romeo’s declaration that ‘Juliet is the sun’. As such, metaphor operates within the



## 2.2 Metaphor as Linguistic Flourish

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language system, effecting a change from a word's 'proper' meaning to a new, analogically connected one. Yet, as we will see, the notion of transfer alone does not provide a sufficient explanation for how metaphor works, what speakers use it for, and how it arose.

In classical thinking, metaphor was considered to be a departure from 'ordinary meaning' (Cicero, ca. 86–86 BCE/1954, p. 333) and 'words used properly' (Quintilian, ca. 90 BCE/1922, p. 301), along with other linguistic tools such as hyperbole, synecdoche, and catachresis. As with these other tropes, metaphor was thought to involve a conscious departure used to achieve some rhetorical – and, typically, aesthetic – end. For example, metaphor may be used to add beauty to language (Quintilian, ca. 90 BCE/1922), to create a vivid mental picture (Cicero, ca. 86–86 BCE/1954), or to increase our pleasure from language (Cicero, ca. 55 BCE/1942, p. 121 called metaphor 'agreeable and entertaining'), thereby elevating the effect of speech. Aristotle (ca. 350 BCE/2004, p. 122) argued that metaphor 'gives style clearness, charm, and distinction as nothing else can'.

Because it was seen as the application of a word to a situation for which it was not originally intended, early thinking about metaphor was confined to the purview of individual words, which were in some sense thought to be transferred to something other than that for which they were 'rightly' used. The impetus for this transfer is some measure of similarity between the thing to which the word is being applied and the 'ordinary meaning' of the word. In this way, metaphor serves to highlight perceived connections between disparate entities, but it does not create new insights. Although metaphors were thought to be translatable to literal language, the origin of the trope was argued to be a lack of words for the precise concepts being communicated. Once metaphors had been used and found to give pleasure, early scholars reasoned, they persisted, coming to be used not just to fill lexical gaps but also for the pleasure that they gave.

Despite some attention to the origin of metaphor and the motivation for its continued use, however, the primary interest in classical thinking (and continuing through rhetorical approaches throughout the nineteenth century) was in prescribing – and, indeed, proscribing – the use of metaphor. As departures from the 'proper' or expected meanings of words, tropes such as metaphor were considered to be merely linguistic ornaments, as described above, and both classical thinkers and rhetoricians cautioned that metaphor must be used with care, as overuse may make speech appear artificial (Aristotle, ca. 350 BCE/1984b) or, worse, it may 'obscure our language and weary our audience' (Quintilian, ca. 90 BCE/1922, p. 309). Decoration can only be effective when it is used in moderation.

The view that metaphor is solely a linguistic flourish with its basis in the perception of similarity persisted for millennia and underlies discussions of

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metaphor in much of nineteenth-century rhetoric (e.g., Day, 1867; Hepburn, 1875; Whately, 1841). These scholars continued to view metaphor as a phenomenon of language, with metaphoric transfer taking place at the level of the word rather than involving a complete, contextualized utterance. Furthermore, as a consequence of their characterization as a transfer from the ‘proper’ use of a word, metaphors continued to be considered ‘deviant’ from literal language and parasitic upon ‘normal’ usage, echoing earlier, philosophical thinking (e.g., Hobbes, 1651, p. 20 considered metaphor an ‘abuse’ of words; a use ‘in other sense than that they are ordained for’). An additional consequence of the classification of metaphor as an embellishment on normal language use is that there are both good and bad uses of metaphor – a view that likewise dates back to classical thinking. Thus, Aristotle (ca. 350 BCE/2004, p. 125) cautions that metaphors ‘like other things may be inappropriate. Some are so because they are ridiculous...others are too grand and theatrical; and these, if they are far-fetched, may also be obscure’.

In Aristotle’s view, a fitting metaphor – that is, one that brings genuine insight, inducing an alteration of perspective rather than being misleading or obscure – is remarkably like a code, the deciphering of which brings insight and delight. Developing these ideas further in later writings, Aristotle (ca. 350 BCE/1984b) maintained that mastering metaphor is the ‘greatest thing by far’ and the ‘sign of genius’ (pp. 2334–2335), given that a good metaphor indicates an intuitive perception of the similarity in dissimilars. In this way, metaphor is viewed as a species of analogy that is based on the perception of – and, indeed, the intention to communicate – similarity (Aristotle, ca. 350 BCE/1984b; Cicero, ca. 55 BCE/1942; Johnson, 1981; Quintilian, ca. 90 BCE/1922). The ‘comparison view’ goes on to explain that metaphor, which surfaces in the form ‘X is Y’, is understood by an implicit conversion into the form of a simile, ‘X is like Y’ (e.g., ‘Juliet is like the sun’). The metaphor thus serves to highlight, by analogical extension, the commonalities between the two entities being compared, transferring properties from one to the other.

So widespread was the influence of their work that the classical approach to metaphor established a precedent in Western thought for centuries to come. Indeed, this widely held view continues to underpin the most common conception of metaphor in the popular mind, as well as in many – albeit not all – scholarly circles today.

### 2.3 Metaphor Comes into the Mind

Around the end of the nineteenth century, we begin to see a shift in discussions of metaphor from metaphor as language to metaphor as thought. As early as 1886, F. Max Müller began to ask what makes metaphor metaphor, and how it