PROCESSING POETIC METAPHOR: A DUAL-ROUTE APPROACH

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Abstract

This thesis proposes a dual-route processing approach to the comprehension of poetic metaphor according to which mental imagery imposes procedural constraints on conceptual mental representations and thus contributes to inferencing the communicator's intention. It seeks to develop the relevance theory account on the role of non-propositional effects in verbal communication allowing the incorporation of mental images, impressions, emotions, and other sensations.

A review of major contemporary approaches to metaphor gives a good reason to favour the relevance-theoretic treatment that describes verbal comprehension as an inferential process. Representations of a set of assumptions are accessed to provide premises and result in conclusions following logical rules, or at least warranted by the premises. According to this view, metaphor is not fundamentally different from other uses of natural language: both require lexical pragmatic adjustments of the encoded concept in order to construct an occasion-specific concept whose denotation partially overlaps that of the original. This new concept resembles the communicator's thought, and gives access to assumptions which will derive implications to make the utterance relevant-as-expected.

Relevance theory regards non-propositional effects as the result of the communication of a wide array of weak but equally plausible implicated propositions. The account developed here considers alternative approaches to non-propositionality from affective science, grounded cognition, and Classical Chinese philosophy. After reworking the definition of mental imagery, it is suggested that non-propositional elements are not just triggered by linguistic processing but they also act as inputs to relevant cognitive activities. More specifically, imagery directs the hearer's attention towards certain aspects of the metaphor by 'pointing to' constituents from personal history and bodily experience that perceptually resemble the sensory inputs from the represented object. Imagery contributes to understanding what the speaker intends to convey, using feedforward and feedback information to guide and constrain the search for relevance. This model therefore complements a purely propositional inferential model.

By highlighting the ways in which mental imagery may affect inference, this thesis attempts to expand the scope of pragmatics. A comprehensive pragmatic theory of verbal communication should be able to account for the communication of not just thoughts with propositional forms but also non-propositional elements. Furthermore, the proposal may have some implications

for literary studies of poetic metaphor by drawing attention to the cognitive dimensions involved in what is often treated in literary studies as intuitive and spontaneous.

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Author's typographical conventions

In this thesis, I will adopt the following conventions for the convenience of discussion:

I use the pronoun 'she' to refer to the communicator (speaker, writer, artist, etc.) and 'he' the addressee (hearer, reader, audience, etc.), except for cases where I refer to a specific communicator. Concepts and conceptual metaphors in Cognitive Linguistics are represented in small capital letters (CAT, ARGUMENT IS WAR). *Ad hoc* concepts, those not readily stored in memory but constructed in communicative contexts, are marked by an asterisk following small capital letters representing the concept (CAT*). Properties are indicated by italics (*domestic*). Individual words as labels for concepts are put within angle brackets (<cat>). Labels for mental images are put between two hash symbols (#cat#), but this does not mean that there is a holistic image with a fixed set of properties. Chinese characters and accompanied by how they are represented in pinyin (which is italicised), the romanisation system for contemporary Mandarin Chinese using the Latin letters. Their transliterations or the closest counterparts in English will be provided in single quotes when appropriate (象 *xiang*, 'imagery'). Italics will also be used to indicate non-English expressions, terminologies when they are mentioned the first time, and both original and my own emphasises.

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Many times during my PhD journey have I imagined how my acknowledgements would look like, but words still fail me when it is finally time to write it. They cannot fully capture what is *non-propositional*: emotions and feelings.

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Last but not least, I wish to dedicate this work to my mother Hui Ding, who, I believe, would have been proud to know how far I have come.

Declaration

I declare that the research contained in this thesis, unless otherwise formally indicated within the text, is the original work of the author. The thesis has not been previously submitted to this or any other university for a degree, and does not incorporate any material already submitted for a degree.

Signed: Mengyang Qiu

Date: 28 March 2024

Chapter One: Introduction

A thousand peaks: no more birds in flight.
Ten thousand paths: all trace of people gone.
In a lone boat, rain cloak and a hat of reeds,
an old man's fishing the cold river snow.
千山鸟飞绝，
万径人踪灭。
孤舟蓑笠翁，
独钓寒江雪。

Liu Zongyuan, 'River Snow', translated by David Hinton

1.1 Diving into the ineffable

Between the years 805 and 815, the Chinese poet, politician and philosopher Liu Zongyuan (773-819) was living in exile in the remote city of Yongzhou because of his association with a failed reformist movement. On a winter day, Liu wrote one of his most famous works 'River Snow'. Consisting of only twenty Chinese characters, this poem has been highly praised to this day for its aesthetic beauty as well as emotional impact. As is demonstrated by this poem, there are two interconnected issues that can make an utterance creative, poetic, or able to leave an impression: the construction of mental imagery and the appeal to emotions. A competent reader is very likely to have a robust feeling that the poet is sharing, or encouraging the reader to have a particular kind of experience alongside what he *means*. This experience, as it appears, is partially or wholly ineffable.

For a long time, theories of communication have been trying to explain how the addressee of an utterance can arrive at an understanding of the speaker's intention. Literary utterances such as poetry serve the primary purpose to inform the addressee of *something*, and this *something* is closely linked to what the speaker intends to mean. The language or the linguistic devices we use often reflects our internal psyche: how we perceive ourselves; how we perceive the world around us; and the relationship between the two. It is through communication that our bonds with each other can be created, developed, and maintained.

Meanwhile, the intentional transmission of knowledge is not always the only goal of communicative behaviours. In literature and art, what is communicated is likely to involve, sometimes to a significant extent, things that are not usually considered to be knowledge at all. Creative use of language is often claimed to be accompanied by what is known as mental imagery, and the analysis of imagery and its significance as a literary method has produced a rich literature. It is also tempting to draw a connection between mental images and the psychological states they may evoke. In the example of 'River Snow", the use of metaphor invites the participation of non-propositional elements: We may 'see' a single boat on a snow-covered river, 'hear' the winter wind (or even silence), obtain the feeling of chills, or experience loneliness or serenity during the appreciation of a piece of literary text. All of them are very difficult to be put into words, or more accurately, to be put into propositional terms. This shows that what is communicated goes beyond the description of an experience. The experience itself is being communicated, allowing the reader to feel the impact and to take the metaphor as 'impressive'. This observation calls for a comprehensive account that acknowledges the role of those non-propositional elements in verbal communication, and also explains their workings in utterance processing.

The disposition and capability to exploit mental imagery is perhaps not a luxury in communication but rather a property of the mind (Ifantidou 2021b). Images can be constructed, recalled and modified when the mind is engaging in retrospective interpretation in a creative way, or images can influence utterance processing in trivial cases as quick, crude, and very likely unconscious reactions (ibid.). Indeed, metaphor is often used as a means to 'conjure up' the type of ineffable experience described above. Metaphor was once thought to be of decorative value, adding to the vividness of language in order to deliver some interesting effects that 'literal' language cannot have (Aristotle 2004; Cicero 1942; Hawkes 1972). As Andrew Ortony (1993a) remarked in the opening chapter of an essay collection *Metaphor and Thought*, there has been a central presupposition in our culture that the physical world could be accurately described without ambiguity. This leads to a clean distinction between what is considered to be the language of science, or literal language, and the non-literal, figurative language widely adopted in literature. Mental imagery, if it plays any part in utterance processing, seems to be 'filling the gap' created by the inherited vagueness or open-endedness of figurative language. This makes poetic metaphor, where mental imagery is often thought to be recruited, an ideal starting point to examine the issue of non-propositioality. Such a

discussion will help us understand what falls within and outside our current understandings of verbal communication.

Over the past few decades, the view that metaphor is a distinctive category of language use has been challenged on both theoretical and empirical grounds. Inspired and built around the Gricean approach to meaning, relevance argues that metaphor does not require a special processing mechanism (Sperber and Wilson 1986/1995). It is positioned on a continuum along with other types of language use with regards to their determinacy and where they fall on the showing/meaning dimension (Sperber and Wilson 2015). What remains relatively unchallenged is the assumption that what is communicated can be explained in propositional terms. The reasoning is this: communication is considered to be an inferential process, and inference is traditionally thought to be drawn by reasoning carried out only on propositional contents (Mercier and Sperber 2017; Sperber and Wilson 1986/1995; Wilson and Carston 2019). If there is nothing intrinsically special about metaphor, then the types of ineffable experience metaphor encourages will need to be accounted for by theories of communication in general. Examinations on the language faculty that processes communicated content in the form of stronger or weaker propositions have underestimated the potential non-propositional elements may have in influencing how an utterance is taken. This issue should not be casted aside lightly, and there has been an increasing number of discussions to accommodate non-propositional elements in the scope of pragmatics, exploring non-propositional effects (Wilson and Carston 2019), descriptively ineffable expressions (Blakemore 2011), perceptual effects (Kolaiti 2019, 2020), and affective effects (de Saussure and Wharton 2020; Wharton and de Saussure 2023; Wharton and Strey 2019).

This thesis follows this tradition and proposes a dual-route processing model in an attempt to explain the communication of non-propositional elements. More specifically, this thesis discusses how such a model works in cases of poetic metaphor, which is usually thought to involve the construction and entertainment of mental imagery. This model is inspired by and largely built around relevance theory's cognitive approach to utterance processing, and drawing inspiration from research done in other disciplines. As we will see in subsequent chapters, there is a good reason to favour the relevance-theoretic treatment that describes verbal comprehension as an inferential process. However, certain modifications are needed so that relevance theory can better incorporate the non-propositional elements.

The proposal of this thesis suggests that processing poetic metaphor is likely to involve two parallel routes, one deriving logical implications from assumptions and relevant conceptual information, the other putting procedural constraints on how the utterance should be taken to achieve overall relevance.[1] Images are not just triggered as the outputs of the language faculty, but they also act as inputs to utterance processing to guide relevant cognitive activities. On a general level, this thesis also contributes to our understanding of mental imagery and the cognitive dimensions of what is often treated as intuitive and spontaneous.

1.2 Aims and objectives

Following recent research on the topic of non-propositionality, this thesis aims at exploring the possibility to account for what is essentially non-propositional, using a pragmatic theory of communication. It intends to challenge the view that the non-propositional dimension of communication can be fully explained in terms of inferential processes operating on propositions, and that yielding positive (propositional) cognitive effects is enough to gauge the relevance of an utterance to an addressee at a given time. The non-propositional effects under examination in this thesis are those that frequently arise during the communication of poetic metaphor, which is often assumed to convey loose impressions, perhaps interspersed with mental images, and that involve the activation of perceptual, affective (feelings and/or emotions) or sensorimotor mechanisms (Wilson and Carston 2019).

In the broader picture, this thesis seeks not to give priority to mental imagery but to foreground the role mental imagery may play in verbal communication and the hearer's arrival at what is intended by the speaker. With this in mind, the following research questions will be addressed in subsequent chapters:

1. How can the pragmatic mechanisms of poetic metaphor be explained?
2. Does the kind of non-propositional effects that arise in our experience of poetic metaphor fit into the current pragmatic framework? If not, how can a fully propositional

[1] As will be introduced in Chapter Three, relevance theory sees relevance as a property of the input to inference. In standard relevance-theoretic account, relevance is gauged by the improvement or modifications on one's conceptual system and the amount of necessary processing effort. Here, however, I follow recent works on non-propositionality within the relevance-theoretic framework and suggest that there may be other kinds of relevance, gauged by improvement or modifications on one's perceptual and/or affective systems. Discussions on this matter will be presented throughout the later chapters of this thesis.

model, such as the ostensive-inferential model offered by relevance theory, be modified to allow a more comprehensive view?

3. Is imagery a by-product of the inferential process, or can it interact with further inferential processes? How does mental imagery influence and contribute to what is communicated by poetic metaphor?

This thesis is structured in order to answer these questions. Chapter Two and Three concern the first research question and bring metaphor processing into a broader framework of utterance processing. The metaphors that are central to the discussion are usually considered creative or poetic. For clarification, these metaphors are linguistic phenomena, typically – though not exclusively – in the format of 'X is Y', where Y is used metaphorically. Technically speaking, there is no clear-cut boundary between a poetic metaphor and one that is not so poetic. As will be introduced in later chapters, lexical pragmatics demonstrates that there is always a gap between the concept communicated by an utterance and the one encoded by the words or expressions. As a result, lexical modulation is considered to be not just a common feature of verbal communication but a necessary one (Carston 2002; Sperber and Wilson 1986/1995; Wilson 2003)[2]. Following this conclusion, metaphors are considered to be fundamentally no different to any other uses of language as they are processed using the same inferential mechanisms (Sperber and Wilson 1986/1995, 2008; Wilson and Carston 2007). The more creative a metaphor is, and the broader the context required for processing, the less determinate it is to decide the set of assumptions endorsed by the speaker, and the weaker the implicatures are (Pilkington 2000; Sperber and Wilson 2015). This thesis also excludes other varieties of metaphors with non-linguistic medium such as visual metaphors. Those are commonly found in films, television shows, photography, and commercial advertisements, where a pictorial image is used 'as visual expressions of metaphorical thoughts or concepts' (Refaie 2003: 78).

Chapter Four and Five address the second research question. There is a long tradition in linguistics and philosophy to put propositions at the centre of approaches to communication. Meanwhile, there are aspects of utterances in natural language that do not bear truth values, but they nonetheless contribute to what the speaker intends to convey. In Chapter Six, special attention is placed on the kind of non-propositional experience that is usually thought to be brought up by mental imagery. The notion of mental imagery has drawn interest from pre-

[2] See also Jones (2015) for a demonstration of manipulating concepts using American Sign Language (ASL).

scientific traditions all the way up to modern philosophy and literary criticism, as well as psychology and cognitive science. It is widely used and discussed across disciplines, connecting our conceptual world with an intuitive and spontaneous world that is of a perceptual nature.

Poetic metaphor is one such case where people frequently resort to the construction of images, but the type of images that is usually under linguistic examination are voluntary and consciously experienced (Carston 2010b, 2018), whereas those possibly involved in cognition are thought to operate below consciousness for most of the time (Barsalou 1999; see also Nanay 2021b). Linguists and philosophers of language also have different opinions on the extent to which imagery may influence the processing of utterances. Some argue for its indispensability, that (at least some) images are necessary for the hearer to make sense of what the metaphor communicates (Davidson 1978; Green 2017). Others acknowledge its saliency but reject that it plays any significant role in metaphor comprehension (Carston 2010b, 2018; Wilson and Carston 2019). A discussion of how this notion may be understood in Chapter Six will show the potential of mental imagery in taking a greater part of both cognition and communication. Following a review on the Classical Chinese approach to the closet equivalent of imagery (Wang 1994; Zhang 2019; Zhao 2020), I will propose the dual-route processing model as an answer to the second research question.

In Chapter Seven, the insights drawn from grounded cognition (in particular, Barsalou 1999, 2009; Damasio 1994; Damasio and Damasio 1994) will converge with earlier discussion to provide further theoretical support to the dual-route processing model. We will see that the conceptual and procedural dimensions in the communication of metaphor can be reconciled by treating mental imagery as a type of situated or grounded mental representation. Examples discussed in detail to elaborate upon the workings of the proposed model, so that it can fit into the broader framework of pragmatics. This will answer the third research question.

1.3 Overview

Chapter Two provides a review of some of the major theories on metaphor, including the traditional accounts and those proposed since the early twentieth century. There is, of course, a wide variety of accounts on all perspectives, and it is not the intention of this chapter to review all of them. Rather, this chapter will offer a critical discussion on some contemporary

responses to this question: What is metaphor? Sections 2.2 to 2.5 each addresses one of the following traditions: the semantic approach (Beardsley 1962; Black 1954; Richards 1936/1965), the Gricean (pragmatic) approach (Grice 1975), the Cognitive-Linguistic view (Lakoff 1993; Lakoff and Johnson 1980/2003; Turner 1990), and the non-cognitivist, imagistic view (Davidson 1978). The conclusion of this chapter is that none of these traditions can fully explain what happen during the comprehension of metaphor, and that we need something more specific to guide the hearer's processing.

Chapter Three presents the main arguments made by relevance theory (Sperber and Wilson 1986/1995). I will claim that there are good reasons to favour a relevance-guided heuristic over those discussed in Chapter Two when it comes to understanding the conceptual representations involved in metaphor comprehension, and indeed, in verbal communication in general. Using the linguistically encoded information as a starting point, metaphor involves the construction of occasion-specific concepts, hence it undergoes in the same inferential procedure as in other cases of language use (Carston 2002, 2010a; Sperber and Wilson 2008; Wilson 2011b; Wilson and Carston 2006). What this thesis challenges is the standard relevance-theoretic account. It is claimed that an entirely propositional inferential process does not show the whole picture.

Chapters Four and Five set out to answer the following question: Why do we need to bring non-propositionality back into the attention of a pragmatic theory? The reason, I will suggest, is that non-propositional contents have the potential to influence how an utterance is to be taken. I start with the long-assumed 'Primacy of Propositions' in philosophy and linguistics. To understand speaker's meaning is to understand what kind of propositions are communicated; and in the cases where speaker's meaning cannot be pinned down to full-fledged propositions, it is to understand what range of weak implicatures are made manifest. I then introduce and discuss Fodor's (1975, 1983) wholly propositional approach to cognition and language use, and relevance theory's development on the Fodorian framework while maintaining its propositional nature. They both point to the conclusions that inference can only work on propositions, and that communication is an inferential process (Fodor 1975; Sperber and Wilson 1986/1995; Wilson and Carston 2019). What we take to be the non-propositional effects are triggered during comprehension, hence taking a secondary or peripheral position.

However, there are certain aspects of an utterance, and by association certain dimensions of communication, that simply do not have truth conditions but are nonetheless intended by the

speaker. Following Wharton et al. (2021), Chapters Four and Five examine three major aspects of non-propositionality: descriptively ineffable entities (Blakemore 1987, 2011; Wharton 2009; Wilson 2011a), impressions (Sperber and Wilson 1986/1995, 2015), and poetic effects and other aesthetic effects (Fabb 2021; Kolaiti 2019; Pilkington 2000). A different line of research from affective science will also be introduced to explore the nature of emotions and their relevance to human cognition. These theories include: Basic Emotion Theory (Ekman 1992ab), the Psychological-Constructionist view (Barrett 2011; Russell 2003; Russell and Barrett 1999), and Appraisal Theory (Arnold 1960; Lazarus 1982; Mesquita and Ellsworth 2001; Scherer 1997).

Chapter Six pays closer attention to mental imagery, which is still a term under debate. With an examination of relevant literature in cognitive science and psychology, this chapter starts with the four dimensions of the notion of mental imagery. Also will be introduced here is the notion of 象 *xiang* from the Classical Chinese account. This provides valuable insights from another tradition for the argumentation of my proposal, while also brings into discussion an independently developed view on what is arguably the same phenomenon. In doing do, I hope to shed new light on the 'Western' thinking, which has been greatly influenced by, or at least has inherited much from Ancient Greek philosophy.[3] *Xiang*, on the other hand, is widely and long adopted in Classical Chinese philosophy, literary critique, and literature, making it a useful tool with which we may see how communication and 'cognition' have been understood in a different culture.[4] I will propose the dual-route processing model in this chapter. We will have already seen that the type of mental imagery that many relevance theorists are interested in only covers a small area of what this notion can offer. In a way, a stronger stance is necessary if we want to delve deeper into the workings of mind instead of only making sense of our constructed reality, our *Lebenswelt*.

[3] I am by no means suggesting that there is a single view that can be considered as the 'Western' tradition, as opposed to the 'Eastern' tradition. I am using the word 'Western' because much of the available academic work in English or other European languages on this matter has been influenced by the Aristotelean philosophy, whereas the Classical Chinese view is rooted in a system whose influences on philosophical and cultural traditions are more prominently found in other East Asian cultures. There is yet an agreement on the best terminologies. Therefore, the adoption of 'Western tradition' and 'Classical Chinese view' mainly served the purpose to present this distinction in a convenient way.

[4] It should be noted that cognition as we know of today was never really discussed nor mentioned in Classical Chinese account. However, this does not mean that there is no serious exploration of what accounts for thoughts and emotions. Yu (2009) provides a comprehensive overview of the concept of 心 *xin*, 'heart' as the 'ruler' of the body, which points to a more holistic view that positions the heart behind both thinking and feeling.

Chapter Seven further presents theoretical and some empirical support for integrating the two dimensions identified in earlier chapters. The goal is to suggest some modifications on the inferential model of relevance theory using some ideas from grounded cognition, in particular, Barsalou's (1999) perceptual symbol system and Damasio's (1994) work on the relationship between feelings/emotions and bodily states. The aim of this chapter is to elaborate upon the dual-route processing model by showing how it can guide and constrain the search for relevance, thus complementing a purely propositional inferential model. The construction of images further activates a range of representations of different degrees of relevance. Attending to them gives rise to positive cognitive effects, perceptual and/or affective effects that allow the addressee to better gauge the overall relevance of the utterance. In this way, a poetic metaphor can be both understood and 'felt'.

A few more words are needed concerning the terminology. The word 'processing/process' in this thesis does not imply that the brain performs any information processing in analogy to what a computer programme does. It is more reasonable to assume that living organisms, in order to survive the environment they live in, will evolve mechanisms to respond to changes happening in that environment. Such mechanisms allow organisms to map information (including sensory information) onto appropriate responses, forming 'cognitive systems' of different complexities. This idea follows what John Searle wrote in his concluding remarks on the working of the brain (1990: 36):

> The brain, as far as its intrinsic operations are concerned, does no information processing. It is a specific biological organ and its specific neurobiological processes cause specific forms of intentionality. In the brain, intrinsically, there are neurobiological processes and sometimes they cause consciousness. But that is the end of the story.

The term 'dual-route' reflects the concern over both conceptual representations and those that are not. This model draws inspiration from the 'dual-route' model of the amygdala in triggering fear response (Garrido et al. 2012; LeDoux et al. 1990). It consists of 'lower-level' and 'higher-level' processes. This differentiation reflects an assumed hierarchy in cognitive processes and subsequent human behaviours. Lower-level operations tend to be fast, automatic, sub-cortical, and more likely to be shared with other animals. Higher-level operations, by contrast, are slower, cortical, sophisticated, usually consciously controlled, and involve epistemic states.

Traditionally, relevance theory is thought to concern mostly the higher-level processes. But as Wharton et al. (2021) argue, the notion of relevance is a key factor in both lower- and higher-level cognition, and cognitive operations at different levels may not be completely separable from one another (see also Cornell and Wharton 2021). This thesis endorses this view, and aims at showing how the interplay between perceptual/affective experience and conceptual processing may be reflected in reading poetic metaphors. This is not to say that every utterance would involve perceptual/affective experience; rather, the position is that poetic metaphor is one such case where the addressee is more likely to resort to non-propositional information.

Chapter Two: Exploring metaphor in linguistic research

2.1 Introduction

In most of the accounts proposed before the twentieth century, the implementation of metaphor is mainly to underline the 'vividness' of language. From this perspective, metaphor is vague and fundamentally different to the 'literal language', the precision and unambiguity of which make it a more appropriate option when one tries to describe and explain the world (Ortony 1993b). Such a treatment, and the semantic approach that follows from it, draws a clear line between the metaphorical and literal meanings, which, as will be further discussed in Chapter Three, in fact does not really exist.

However, it is necessary to first address this question: What is metaphor? In the next section, I present a succinct overview of some definitions put forward by philosophers from the Classical Period, literary critics and writers. In parallel to these definitions, I also show the Classical Chinese approaches to metaphor, or arguably the closest thing to this concept. These influential attempts will create a general picture of what I mean by 'traditional views'. Starting from the mid-twentieth century, there has been an increasing interest in theories of metaphor thanks to the breakthroughs in linguistics and cognitive science. Interdisciplinary collaboration has provided new tools with which linguists, cognitive scientists, philosophers, literary critics and writers can examine metaphor, and each draw inspiration from each other's work. More importantly, these remarkable developments changed the way metaphor is approached in relation to other uses of language.

Sections 2.3 to 2.6 introduce the major approaches to metaphor since the twentieth century and how they fit into the basic lines of research in linguistics. Section 2.3 looks at metaphor from the perspective of semantics, which regards metaphor as the result of the interaction of meanings when words are put together in a particular utterance (Black 1954, 1993; Richards 1936/1965). The idea underlying the semantic approach is that for each metaphor, there is a

precise and fixed 'literal meaning' of the utterance.[5] Meanwhile, there is a figurative meaning which works outside the realm of such 'literalness', to the extent that new meanings may be created. By using a metaphor, the speaker communicates something not quite expressed by the words themselves. This distinction between two types of 'meaning' is influenced by the Aristotelian comments. Metaphor is a matter of word meaning.

Section 2.4 introduces Paul Grice's work in pragmatics and how metaphor is explained in terms of different uses of language depending on the communicative context. Grice makes great changes to previous theories by emphasising the roles of language user and that of communicative context. In particular, the development of pragmatics in the mid-century, thanks to Grice's ground-breaking work, creates new lenses for linguists and philosophers to study language in terms of how people actually use it. According to the Gricean view, metaphor departs from literal meaning not because it has a special meaning, but because the speaker intends to mean something that is not explicitly stated. In his study on meaning, Grice (1957, 1968, 1969, 1989) believes that speaker's intention should be taken as a crucial parameter in any kind of utterance analysis. I will only briefly mention here relevance theory, a dominant post-Gricean approach, and its general arguments about metaphor, as the whole of the next chapter is exclusively about this approach and its development within a broadly Gricean framework.

Section 2.5 reviews the claims about metaphor made by scholars who take the Cognitive-Linguistic view, which is advanced by major proponents such as George Lakoff, Mark Johnson and Mark Turner.[6] According to this view, metaphor is primarily a matter of thought (Lakoff and Johnson 1980/2003). To use a metaphor is to think of something in terms of something else. They proposed the notion of *conceptual metaphor* (e.g., ARGUMENT IS WAR), a pervasive cognitive disposition that sets up a specific correspondence between two concepts via *cross-domain mapping*. Conceptual metaphors underlie how we perceive the world and how our thoughts are structured. Individual metaphors reflect this conceptual mechanism. This thesis

[5] It should be noted that the idea of 'literal meaning' as the opposite of 'non-literal meaning' is problematic. Relevance theory argues that a fine-tuning of conceptual content is ubiquitous in communication, even for expressions that are usually regarded as 'literal'. Instead of classifying language uses into two distinctive groups, it is more plausible to treat them as falling on a continuum, with various degrees of deviation from what is conventionally seen as the 'dictionary meaning' (Carston 2010a; Sperber and Wilson 2008; Wilson and Carston 2007).

[6] I use capitalisation for the first letters of Cognitive Linguistics, in distinction with linguistic theories such as relevance theory which adopts a cognitive approach to communication.

acknowledges the contribution from a rich literature and empirical studies along this line, but it does not fully agree with their arguments. Upon closer examination, the Cognitive-Linguistic approach seems to raise more questions than it answers.

Section 2.6 discusses the imagistic account of metaphor (Davidson 1978), which is different from most of the contemporary theories of metaphor. Davidson famously argues that '[w]ords are the wrong currency to exchange for a picture' (1978: 47). This is also true for emotions, impressions, and feelings. The main argument of this account is that what we naturally take to be metaphorical meaning is not the result of metaphor processing but something that comes out of the results. Metaphor processing is about appropriately understand what is linguistically encoded by words.[7] The imagistic account challenges most linguistic and philosophical theories in terms of meaning as entirely a matter of semantics and logic. I end this chapter with a brief summary in Section 2.7.

2.2 What is metaphor: the Classical views

Classical accounts of metaphor, at least in the Anglo-European traditions, are greatly influenced by Aristotelian rhetoric: 'any serious study of metaphor is almost obliged to start with the works of Aristotle' (Ortony 1993b: 3). The word 'metaphor' comes from the Greek word μεταφορά, and its later adoption in Latin as *metaphora*, 'to carry something over'. It illustrates a linguistic process that transfers characteristics or aspects of one object onto another, so that the second object is understood in terms of the first. Aristotle summarised his theory in the following remarks (*Poetics* 1457b, trans. Butcher):

> Metaphor is the application of an alien name by transference either from genus to species, or from species to genus, or from species to species, or by analogy, that is, proportion. … There is another way in which this kind of metaphor may be employed. We may apply an alien term, and then deny of that term one of its proper attributes.

The function of a metaphor is to add to the figurative effects of an expression that is otherwise literal. A metaphor inherently does not mean what the words mean, and this later meaning,

[7] Davidson (1978) uses the term 'literal meaning' in his writing. In this chapter, whenever the term 'literal meaning' is used in quotation marks, it is only to respect the tradition that a distinction is thought to exist between literal and non-literal use of language.

pointing to a standard usage, is 'derived from the common practice of ordinary speakers of the language' (Hawkes 1972: 2). The assumption is that a new or special meaning can be created by deliberately transferring certain properties associated with one object to another. Therefore, understanding a metaphor requires and shows mastery of language.[8] More than two thousand years later, Grice differentiated between what is meant from what is said. Metaphor is a way for the speaker to *say* something that is patently false in order to *mean* something else since she is assumed to be cooperative in communication (Grice 1975). The 'literal meaning' of the expression takes precedence and will be accessed first, but it will be discarded because a literal reading leads to a flouting of the conversational maxims. In this way, the hearer is encouraged to search for plausible implicature which is then taken as what the speaker means intentionally (i.e., Grice's what is meant$_{NN}$). In summary, if there is anything special about metaphor, it is not a matter of word meaning, but what the speaker intends to convey by using it.

According to traditional accounts, metaphor works via resemblance, through which the hearer's thoughts may be guided. Metaphor may also be used when we do not yet have an established term to describe the subject under discussion, but there is no need to create a completely new term for it either. As Cicero remarked (*De Oratore* III, xxxix, trans. Rackham):

> A metaphor is a short form of simile, contracted into one word; this word is put in a position not belonging to it as if it were its own place, and if it is recognizable it gives pleasure, but if it contains no similarity it is rejected.

Quintilian expressed a similar opinion when commenting on the language used for art. According to him, metaphor and other figurative language serve the purpose of adding artistic possibilities to 'literal meanings', which is not vivid or impressive enough (Hawkes 1972). The French philosopher Paul Ricoeur commented that metaphor was commonly taken by Classical rhetoric as 'the trope of resemblance *par excellence*' (Ricoeur 1978: 173), which provided a starting point of the process of seeing one thing as sharing some features with another. This means that the effect of a metaphor is to temporarily transfer a term from the realms of

[8] As we will see later, Grice differentiates between what is meant from what is said. Metaphor is a way for the speaker to *say* something that is patently false in order to *mean* something else since she is assumed to be cooperative in communication (Grice 1975). The 'literal meaning' of the expression takes precedence and will be accessed first, but it will be discarded because a literal reading leads to a flouting of the conversational maxims. In this way, the hearer is encouraged to search for plausible implicature which is then taken as what the speaker means intentionally (i.e., Grice's what is meant$_{NN}$). In summary, if there is anything special about metaphor, it is not a matter of word meaning, but what the speaker intends to convey by using it.

conventional scheme to an unconventional one for specific, often decorative purposes. The internal resemblance between two entities makes it possible to recover the metaphorical meaning, replacing a metaphor, or at least the term deviated from its linguistically encoded meaning, with its literal equivalent (Black 1954; Ortony 1980; Ricoeur 1978). In other words, the hearer uses the 'literal meaning' of the metaphor *M* as a clue to infer the intended meaning of its literal equivalent *L*, as if 'deciphering a code or unravelling a riddle' (Black 1954: 280). The problem of these approaches is that they attribute decorative functions to metaphor without explaining how those artistic effects are achieved. If metaphor is a special case of language use, in what way is it special? How does the addressee of a metaphor recognise this special meaning? And if metaphor is only adopted as an ornamental device, why don't we have a language without any metaphor at all? The Classical accounts offer few answers to these questions.

The Romantic poets responded by rejecting the claim that metaphor was merely ornamental, and advocated that metaphor sustains an organic relationship with language as an expression of imagination (Hawkes 1972). Wordsworth, for example, committed to 'language really used by men' (2010: 288). Metaphor emerges from repeated experience just like other everyday expressions. His contemporary, Coleridge, considered metaphor as a faculty of imagination, eliminating the literal-metaphorical distinction (Karadas 2008). It is not 'a cloak for a pre-existing thought' but 'a thought in its own right' (Hawkes 1972: 55). In other words, we use metaphor because our mind has been re-shaped by imagination. There is simply no way we can find a language without metaphor. However, by these comments the questions we ask disappear altogether – the issue of understanding metaphors now becomes one of understanding everyday expressions, for which the Romanticists provided no answer either.[9]

Developed independently from Aristotelian traditions, the Classical Chinese approaches to metaphor, or arguably the closest thing to metaphor that we know of, reveal a different perspective that may shed some light on why non-propositional effects are a crucial part of communication and how they can be achieved. It is generally agreed that metaphorical thinking was already mature by the time when the text of *I Ching* were assembled (between the tenth

[9] As we will see in Chapter Three (and specifically in Section 3.3), this question can be answered by a deflationary account of metaphor offered by relevance theory offers, according to which there is a general mechanism underlying utterance processing in general (Sperber and Wilson 1986/1995, 2008). What makes a metaphor 'poetic' can be explained by to a wide array of weakly implicated but equally plausible propositions.

and fourth century B.C.),[10] and the use of what can be taken as metaphor dates back to *The Classic of Poetry* (ca. 1000-600 B.C.).[11] The *Great Preface* of this latter book states that 'poetry is the place where intention goes. In the heart it is intention, when expressed in words, it is poetry. Emotions are stirred within and take shape in words' (cited in Svensson 1999: 2). This implies that the composition of a poem is a spontaneous process charged with emotions and the intention to express them because they cannot be restrained. The reader is expected to recognise and feel the affective states of the poet, and to attribute this experience to what the poet intends.

One of the literary devices used in *The Classic of Poetry* that enable this process is 比 *bi/pi*, roughly translated as 'comparison' with similar functions of simile and metaphor. The fifth century literary critic Liu Xie (also spelt as Liu Hsieh, ca. 465-522) provided the first recorded comprehensive study on the issue of *bi*, as he wrote (Liu 1959: 195-196):

> *Pi* [*bi*] involves reasoning by analogy […] When we reason by analogy, we group things by comparing their general characteristics […] What do we really mean by *pi*? A description of things used to stand for ideas, and the use of figures of speech to intimate the nature of certain facts.

Literary critic Chen Kui (1128-1203) further specified 隐喻 *yin-yu*, which has become the Chinese term for metaphor ever since.[12] *Yin-yu* is 'obscure in language, but the meaning can be deduced' (Chen 1960: Chap. 3.1), distinguishing it from simile. It also raises awareness as to the issues of implicitness and explicitness. However, both accounts seem to only focus on the format, while the rationale behind them is, quite possibly, taken for granted because it is a deeply rooted way of thinking: to think in terms of *xiang*, 'imagery', which is compatible with the logical, conceptual thinking (Wang 2018). As I will demonstrate in Chapter Five, the

[10] 易经 *Yi-jing*, or *Book of Changes*, was originally an ancient Chinese divination manual. It went through transformations over centuries and was supplemented with scholarly commentaries, making it among the most influential texts of Classical Chinese philosophy.
[11] 诗经 *Shi-jing*, a collection of 305 of China's oldest poems, is often considered as the origin of Chinese poetry, though neither the authors of these poems nor the editors of this book is known.
[12] In fact, *yin-yu* in Chen's definition only partially overlaps with the proper metaphor such as 'Juliet is the sun'. A more significant contribution of Chen's work is to provide scholarly argument that metaphor, simile, metonymy and other figurative expressions are common in language (Zhang et al. 2014).

translation of ‘imagery’ is problematic as there may not be anything imagistic, though (quasi-)perceptual in nature, as the term seems to suggest.

Metaphor is one such case that demonstrates this non-conceptual mindset (Zhang et al. 2014), giving it a cognitive status. *Xiang* mediates between perceptual experience and the conceptual mental representations that can be abstracted from such experience. It underlies our understanding of the world by associating it with relevant perceptual properties (Zhou 2014), making it the embodiment of inner feelings based on experience, memory and imagination (Pan 2007). This view shares some parallels with the grounded cognition in psychology despite a lack of empirical evidence. The transfer observed in metaphor is therefore both of the conceptual information which functions as the input to inference, and of the procedural information which may provide further principles for making such inference. Punter suggests ‘a continuous process of *metaphorisation*’ (2007: 39) in many metaphors used in Classical Chinese literature, commenting that ‘[t]he task is not to forge new metaphors; rather, it is to reinspect the continuing relevance of old metaphors to current cultural and personal circumstances (ibid.: 37). In effect, *xiang* may be one of the factors that contributes to recognising this kind of relevance.

2.3 Metaphor as a matter of word meanings

After the Romantic movement, metaphor received a renewal of interest from various disciplines starting from early- to mid-twentieth century. I. A. Richards (1936), Max Black (1954), and Monroe Beardsley (1962) provided some of the influential early semantic approaches. The general claim of this tradition, which departs from the Classical accounts, is that metaphor crucially involves the interaction between word meanings when they are put together in an expression. New meanings are assigned locally to the *focal* words, those taken to be used metaphorically, while the meanings of *framing* words, those in the rest of the expression remain unchanged. Due to the tension between the new meanings and the unchanged ones, a distinctively metaphorical meaning is assigned to the expression as a whole (Hills 2017).

The semantic approaches built their arguments against views derived from or at least heavily influenced by the Classical accounts. Consider the utterance in (1):

(1) Richard is a lion.

Provided that the hearer knows that Richard is a person, the word 'lion' cannot refer to the animal *Panthera leo*, but rather refers to some properties that are typically associated with the animal. The speaker substitutes a non-literal use of 'lion' for what could have been literally said, such as being proud and brave. Max Black (1954) calls any view that takes a metaphorical expression to 'replace' some equivalent 'literal' expression the *substitution view*. This view can be traced back to the Aristotelian transference of word meaning from genus to species (Aristotle 2004; see also Leezenberg 2001). Successful interpretation of (1) therefore relies on the recognition of similarities in characteristics between the referent and the word.

The problem of this view is obvious. If metaphor is all about filling a gap in vocabulary, it cannot explain why (1) is understood as saying 'Richard is brave' but not, say, 'Richard is carnivorous' (which may be an equally valid interpretation) or 'Richard hunts zebra on the savannah' (which is less likely to be a valid interpretation). In other words, there is no guarantee that the hearer will select the set of characteristics as is intended by the speaker, and the metaphor will be understood in the intended way. The substitution view is expected to inform us of the connection between metaphorical and the encoded meanings, but it says little about how this connection works.

The comparison view as a special case of the substitution view (Black 1954). It focuses on how the subject (Richard), or its characteristics in concern, is compared to another entity (the lion). It derives from Aristotle's view that metaphor is a short form of simile. While simile uses 'like' and 'as' to indicate a comparison, metaphor requires the audience to identify the implied similarity. That is to say, (1) can be paraphrased as a simile (2), which is a statement about both Richard and the lion:

(2) Richard is like a lion (in being brave).

This view does not hold up to examination, either. It simply turns a question about metaphor into a question about simile. A zoologist is unlikely to seek any information about lion from (1) or (2), and for someone who seeks information about Richard, the likeness between Richard and the lion is a matter of degree. Traits of resemblance for one person may not be good enough for another person to draw a connection between two subjects. As Black (1954) remarks,

metaphor creates rather than expresses any similarities that previously exists. Even so, the created similarity may have little or nothing to do with how metaphor is usually defined and recognised. In order to understand in what way Richard resembles a lion, the hearer should at least know some facts that are thought to be true about the lion. But in verbal communication, false association of properties is not uncommon. Consider the following example:

(3) Richard is a gorilla.

This metaphor is usually understood as saying Richard is rude and violent, regardless of the fact that gorillas are normally shy and sensitive animals. In this case, the hearer is associating not what is actually true about the concept GORILLA but what has been conventionally linked to it, or what Searle calls 'a certain semantic content other than its own meaning by a set of principle' (1993: 92). The result is access to a set of properties that are not directly derived from the concept itself.

The English literary critic and rhetorician I. A. Richards is one of the first people to propose an alternative account. He gave a series of lectures in 1936, which were later published as *The Philosophy of Rhetoric*. Richards (1936/1965) starts with Aristotle's comment that to have a command of metaphor 'cannot be imparted by another; it is the mark of genius – for to make good metaphors implies an eye for resemblances' (*Poetics* 1459a, trans. Butcher). Richards, however, argues that when taken maliciously, this comment points to three assumptions which hinder the study of metaphor from advancing as a theory and practice:

(a) 'An eye for resemblances' is something that some people have while others do not.
(b) The ability to use metaphor is a genius that cannot be taught.
(c) Metaphor is a special deviation from the so-called normal mode of working.

In Richards' opinion, 'an eye for resemblances' is only a matter of degree. With appropriate instruction, it is possible for all individuals to command metaphor as they learn anything else. Metaphor is not fundamentally different from other uses of language, either. It is 'the omnipresent principle of language of all its free action' (Richards 1936/1965: 90), to the extent that 'thought is itself metaphoric – not merely that it expresses itself in linguistic metaphors' (Richards 1938: 49). Considering the time of publication, it is unlikely that Richards made these remarks because of his knowledge about human cognition. Rather, he seems to echo those

made by the Romantic poets such as Wordsworth and Coleridge, who suggest that the language of poetry should be that used by people for everyday communication (Wordsworth 2010), and that metaphor is 'a thought in its own right' (Hawkes 1972: 55).

At the centre of this approach is the rejection of the Proper Meaning Superstition that there is a certain kind of stability in word meaning, one that metaphorical meanings deviate from. Instead, Richards (1936/1965) argues that this stability only happens in the context where the word appears. It is not assumed but explained. Metaphor considers two subjects at the same time: the *primary subject* or *tenor*, the one presented for consideration, and the *secondary subject* or *vehicle*, the basis for understanding that the hearer can resort to. The meaning of the tenor is conveyed by the vehicle. For example, in 'Juliet is the sun', the sun is the vehicle, expressing the tenor (idea) that some of Juliet's characteristics can be conveyed by the sun. The relationship between the tenor and the vehicle is one of resemblance. Juliet is being compared with the sun because they share something in common – they are both warm, fair, able to bring light to the world – at least in the mind of the speaker, and it is intended that the hearer recognises such likeness.

However, an immediate problem arises. This type of resemblance is not always clear and straightforward so that the hearer knows exactly which characteristics are being compared. Richards' response is that strict accuracy of resemblance is not necessary, because 'the assumption that the service of a metaphor depends entirely upon our perceiving points of resemblance or correspondence between tenor and vehicle is a common over-simplification' (Richards 1938: 132-133). The interaction between these two parts is not restricted to resemblance, as has been traditionally argued. In fact, tenor and vehicle can be extremely unlike each other, as long as a connection can be established by the reciprocal influence between them to render a plausible interpretation. In this sense, the role of metaphor is to expand the scope of language. The interaction of meanings provides a new perspective for the hearer to notice what he may not be able to otherwise. However, the interaction theory only works if every metaphor contains a part that is used literally to provide a basis for interaction. Consider the following examples:

(4) Claire is a block of ice.
(5) Claire is a nightingale.
(6) The nightingale is a block of ice.

The utterance in (6) contains what Searle (1993) calls a 'mixed metaphor' where the tenor (Claire) is replaced by another vehicle ('the nightingale').[13] Since neither subject is used literally, how does the hearer understand the relationship between the two subjects? Furthermore, Claire is $cold_1$ in a different way to that in which a block of ice is $cold_2$. The fact that the hearer can go from $cold_2$ to $cold_1$ is not accounted for in this theory, either.

Following Richards, Max Black (1954, 1993) argues that instead of replacing a literal equivalent, the metaphorically used word creates a new meaning in a new context that is not fully equivalent to any literal use. Take the following two metaphors as examples:

(7) The chairman ploughed through the discussion.
(8) Men are wolves.

According to Black (1954), there is a contrast in (7) between the word 'ploughed' and the rest of the sentence, because only 'ploughed' bears a non-literal meaning (e.g., to make progress through something difficult or that takes a long time). The salient, metaphorically used word(s) is called the *focus*, implying that our attention narrows from a whole sentence to a single concept. The remaining part is the *frame*. If 'plough' is used in another expression such as 'to plough one's memories', meaning that this expression has the same focus as that in (7), the similarities between frames will determine whether these two metaphors are the same. Metaphor achieves its effects through a process of filtering, selection and interaction operated on a 'system of associated commonplaces' (Black 1954: 287). In order to understand (8), the hearer will first need to know and accept something about the standard, 'literal meaning' of wolf, as well as what is commonly thought to be true about the animal wolf. He then selects some of the properties from this set of information, and applies them to the construction of a new meaning that evokes wolf-related commonplaces to construct implications about men. These implications are determined by the encoded meaning of 'wolf', but they are also

[13] In Searle's original example 'The bad news is a block of ice' (1993: 93), the first half is in fact a metonymy rather than a metaphor. The differences and similarities between metaphor and metonymy has been one research topic among linguists. According to the associationist view, which underlies the Classical, the Gricean, and the Cognitive Linguistic approaches, metonymy is a referential shorthand based on an empirically observed association, entailment, or contingent relation (Preminger and Brogan 1993). However, Papafragou (1996) argues that this view is inadequate and thus provides a relevance-theoretic argument to treat metonymy as a variety of interpretive use just as metaphor is. The crucial difference is that in a metonymic use there is no resemblance between the novel name and its referent, but rather a metarepresentation of what is in the speaker's mind. In metaphor, a resemblance is necessary to provide the basis for reference assignment (see Jodłowiec and Piskorska 2015 for an alternative approach which is nonetheless situated in the relevance-theoretic framework). To avoid confusion, a revised mixed metaphor is used here.

restrained to apply to human traits (thus suppressing traits such as 'having a tail'). Black's account differed to previous semantic approaches because it suggests that instead of associating properties that are actually true about the metaphorically used word, the hearer seeks assistance from a set of implications that are commonly thought to be true about that object by language users in a cultural/linguistic community.

At its core, this account assumes that the 'literal meaning' is still accessed during metaphor comprehension, since the associated commonplaces are first and foremost determined by the encoded meaning of the word <wolf>. However, as is shown in the gorilla metaphor, what people accept to be true does not mean it is actually true, and in this case, we need to explain why something untrue is taken as the 'literal meaning' in the first place. It does not seem possible to solely attribute this to a matter of meaning without considering how the language is used. Furthermore, the central idea of the semantic approach is that metaphorical meaning deviates from the literal one. The hearer presumably accesses the 'literal meaning', which fails to render a plausible interpretation, then he turns to a non-literal meaning. Suppose this was the case, by claiming that metaphorical implications may not have much to do with literal meanings, the action of cancelling the literal reading becomes unnecessary (Leezenberg 2001). It seems that the semantic approach concerns the results of metaphorical interpretation rather than what happens in the process.

Monroe Beardsley holds a view similar to that of Richards (1936/1965) and Black (1962) in suggesting a tension or clash between 'two levels of meaning' (1962: 299): metaphor is essentially a conflict of meaning that is absent from the literal language, and this is how we recognise that a word has been metaphorically used. The non-literal sense comes from 'a certain absurdity, and in fact usually an implicit contradiction, in the sentence, when the predicate is taken in a literal sense' (Beardsley 1976: 219). However, neither falsity nor absurdity is a reliable identification mark. 'Richard is a gorilla' may pose no conflict on a literal level – by saying that there is a gorilla named Richard – while at the same time can be taken as a metaphor. In other words, we need to know the speaker's intention. Indeed, later research began to rephrase the strictly semantic arguments with elements from pragmatics (Leezenberg 2001). Black, for instance, originally claims that metaphor involves 'a shift of meaning of words belonging to the same family or system as the metaphorical expression' (1962: 45). In a later paper, he revised the above statement to 'a shift in the *speaker's* meaning – and the corresponding *hearer's* meaning' (1993: 28, original emphasis), but remained relatively vague

on how certain characteristics are being focused on. Despite all the originalities proposed by semantics approaches, we need something more to get a clearer picture about what is happening between meaning and use.

2.4 Metaphor in the Gricean framework

The mid-twentieth century saw the emergence of pragmatics, a field of linguistics that studies utterances and the speaker's intention at given times and places. Communication is a rational process that involves inferential activities with a certain communicative purpose, and word meaning tells much about the sort of belief, desire, and intention of the person who utters it (Grice 1957).[14] The pragmatic approaches to metaphor – in particular, that appeared in a series of talks at Harvard in 1967 by the philosopher Paul Grice – regard metaphor as a way for the speaker to *say* one thing but *mean* another. Since communication is rational, it is assumed that in order for the communication to be successful, it needs to be cooperative as well: in which both interlocutors commit themselves towards a common goal (Grice 1975). Since metaphor says something that is 'false' when taken literally, it must be the case that the speaker means something else if she is assumed to be cooperative. To paraphrase a metaphor or part of it, with more or less accuracy, is to explicitly recover what is only implicitly communicated.

For Grice, there is a genuine and clear distinction in natural language use between *what is said* and *what is implicated*. What is said is 'closely related to the conventional meaning of the words (the sentence) [the speaker] has uttered' (1975: 44), which is roughly equivalent to the 'literal meaning', or the linguistically encoded meaning of the words. What is implicated (the *implicature*) is the information that remains when what is said is removed from all the information a sentence conveys, or the pragmatic meaning of the sentence. The resulting implicature can be determined by the conventional meaning of the uttered words or the conversational context. What is said and what is implied co-exist in that a speaker can say one proposition explicitly and communicate related propositions implicitly. The metaphorical meaning the hearer recovered as implied by the speaker falls under the category of conversational implicature (Figure 1). It should be noted, however, that Grice (1957) also

[14] Grice and other Oxford philosophers such as John Austin and Peter Strawson were proponents of ordinary language philosophy (OLP), which focuses on the use of expressions of language, rather than the expressions in and of themselves. According to this methodology, the proposition uttered by the speaker is closely linked to the meaning of that utterance, and the truth-condition of that proposition is to be determined by the type of linguistic acts it performs.

distinguish two types of meaning: natural meaning (meaning$_N$) that does not involve speaker's intention, and non-natural meaning (meaning$_{NN}$) that does. By uttering a sentence, a speaker means$_{NN}$ a certain proposition, and he also intends the hearer to know that he means$_{NN}$ that. I will come back to the discussion of this distinction in Chapter Three (in relation to the notion of *explicature* and the showing-meaning continuum in relevance theory) and Chapter Four (in terms of the primacy of propositionality).

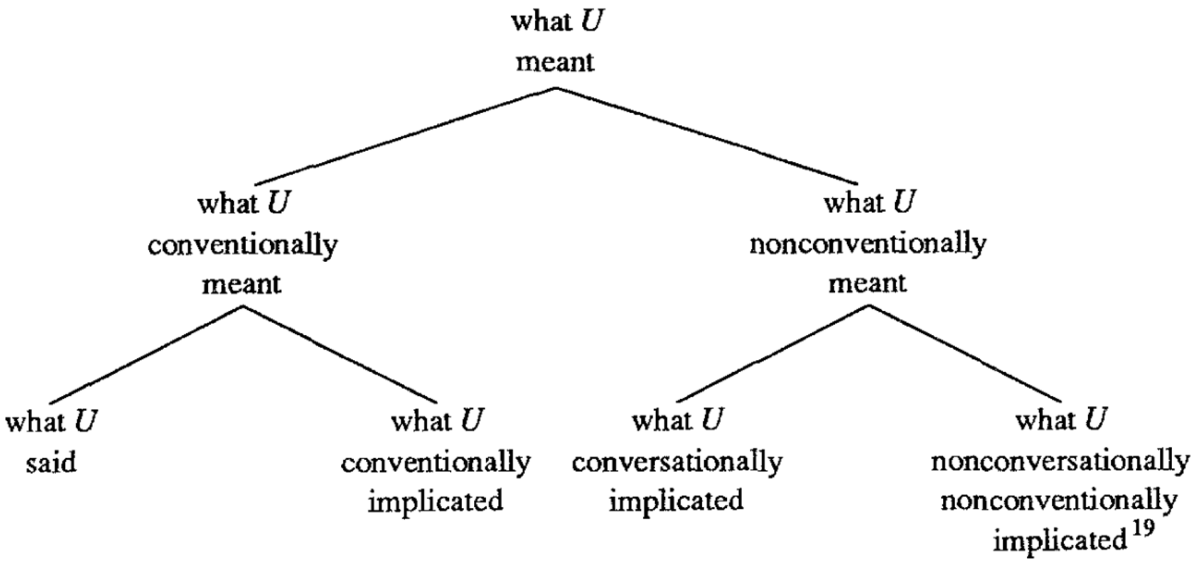

Figure 1: The classical Gricean representation of meaning

Source: Neale (1992: 524)

Like in other cases of communication, the hearer assumes the speaker is being rational and efficient in achieving a communicative goal by her utterance. This is a vague description of following the Cooperative Principle, so Grice further specified it with four Conversational Maxims: Quantity, Quality, Relation, and Manner (1975: 45-46).

(a) Quantity:
   i. Make your contribution as informative as is required (for the current purposes of the exchange).
   ii. Do not make your contribution more informative than is required.

(b) Quality:

Try to make your contribution one that is true.
   i. Do not say what you believe to be false.
   ii. Do not say that for which you lack adequate evidence.

(c) Relation:

Be relevant.

(d) Manner:

i. Avoid obscurity of expression.

ii. Avoid ambiguity.

iii. Be brief (avoid unnecessary prolixity).

iv. Be orderly.

These maxims are general and thought to be universal, rather than specific to a language or a cultural community. They outline some of the general rules people follow in communication, not what actually happens in any single situation or to any single interlocutor. A speaker may unostentatiously violate, opt out from, face a clash of, flout or blatantly fail to fulfil one or several of the maxims. In these cases, the hearer will know that something other than what is said has been communicated, with the overall assumption that the speaker is being rational and cooperative. This is, in Grice's opinion, how non-literal expressions such as metaphor, irony, meiosis and hyperbole fit into the whole pragmatic framework. Consider this metaphor (Grice 1975: 53):

(9) You are the cream in my coffee.

According to the Gricean framework, the processing of (9) proceeds along the following lines. Supposed the hearer knows that 'you' refers to them, then the speaker clearly violates the Maxim of Quality by saying something that is factually false – as far as we know, a person cannot be scientifically identified as cream. Therefore, the 'literal meaning' cannot be what the speaker is trying to communicate. The hearer's task is to recover what is implied by determining what feature(s) the speaker is attributing to him via a manner of resemblance to 'cream in coffee'. As a philosopher, Grice is more interested in proposing a philosophical description of the nature of meaning, and less focused on what actually happens during communication. It is therefore no surprise that he did not specify how exactly the four maxims are to be observed or how the result of inference is to be gauged. Grice also did not write much specifically on metaphor, or any other language uses that are seen as figurative. The few metaphors quoted as examples in Grice's works pretty much take the format 'A is B', leaving other forms of metaphor and more poetic ones unexamined. Even so, there are some general questions that arise if we are to follow his approach.

First of all, Grice's approach presupposes a semantic analysis before a pragmatic analysis of the implicature (Leezenberg 2001). That is, in order to understand what the speaker actually means by an utterance, the hearer will need to a) have some knowledge about the possible senses and references of the sentence meaning, and b) decide which of these the speaker intends to be communicated. The former is guided by linguistic rules and the latter by conversational maxims. It can be concluded that what is said in an utterance entails both what is linguistically encoded by words and what is actually meant by the speaker. However, these two aspects may not co-exist at all because of the gap between the encoded information and the proposition the speaker intends to communicate (Carston 2002; Wilson and Sperber 1981), making it difficult to decide whether an expression is used metaphorically or literally. Suppose someone uttered the following sentence:

(10) It is cold.

What is encoded by the word 'cold' can lead to two interpretations of the utterance, depending on whether it is used metaphorically. This utterance also has infinite referents because of the indexical 'it'. If (10) is a response to the question 'How is the temperature in Anchorage?', then the hearer can decide that 'it' refers to the temperature in Anchorage, and 'cold' means something like 'below what makes a human feel comfortable'. If the question is 'How is the social atmosphere in Anchorage?', then 'it' refers to the social atmosphere in the said city, and 'cold' bears a metaphorical meaning such as 'indifferent and unfriendly'. Obviously, the hearer draws upon the context for disambiguation and assigning reference, which leads to two entirely different interpretations. Both processes are pragmatically not semantically determined, and both happen within the scope of the four Conversational Maxims.

In Grice's account, a flout of the Maxim of Quality that 'characteristically involve categorial falsity' (1975: 53) signals a metaphor. The claim 'you are the cream in my coffee' is literally wrong, so this sentence needs to be understood metaphorically. However, as (10) shows, it is possible for an utterance to be literally true and can also yield a metaphorical reading, so categorical falsity is not enough to guarantee the recognition of metaphor (Leezenberg 2001; Wilson and Sperber 1981). One may also say that (10) is a violation of the Maxim of Manner (for being ambiguous).

Secondly, conversational implicature is by definition cancellable, as Grice wrote in a further comment (1989: 44):

> a putative conversational implicature that *p* is explicitly cancellable if, to the form of words the utterance of which putatively implicates that *p*, it is admissible to add *but not p*, or *I do not mean to imply that p*, and it is contextually cancellable if one can find situations in which the utterance of the form of words would simply not carry the implicature.

For example, when the speaker utters 'That cake looks delicious', she is explicitly describing how she perceives that cake, and conversationally implicating that she would like to have a piece of that cake. However, this implicature can be cancelled if the above remark is followed by 'but it looks too rich for me'. She is maintaining the explicitly communicated content but denying the implicature. The same cancellability may not easily apply to metaphor. Suppose a situation where two people are talking about their common friend named Richard. One of them gives the following comments, modified from (1) (listed below as (11) and (12)):

(11) Richard is a lion, but I do not mean to say that Richard is *the lion*.
(12) Richard is a lion, and I do not mean he is brave. He is proud.

According to Grice (1989), an implicature can be cancelled when the truth conditions of a proposition is inconsistent with common assumptions, which may result in misunderstanding. In (11), the metaphorical meaning communicated by the first half of the sentence cannot be rejected, because what is said already involves a categorial inconsistency. Since both interlocutors know Richard is not a lion, this means that the metaphorical meaning has already become part of what is said, rather than what is implicated (Bezuidenhout 2001). The second half may serve as a disambiguation of the first half where 'the lion' metaphorically refers to another person that possess the same quality such as being brave, but exhibiting it more intensively. This ambiguation is not a necessity in the current conversational context. This metaphor can be rejected in (12), however, provided that the literal reading is already ruled out. The metaphorical meaning cannot be cancelled for a literal one ('He is a big cat'), but it can be cancelled for another metaphorical meaning ('He is proud') (Bezuidenhout 2001).

The general description of the metaphorical interpretation process as is outlined in Grice (1975) is just one example of the aspects that can be further developed in the Gricean framework. Relevance theory, as will be discussed in the next chapter, is perhaps the most influential post-Gricean theory. It is not just a cognitive theory of communication, but also a theory of general cognition; and specifically on the issue of interest in this thesis, relevance theory also provides some neat and competent solutions to the problems raised in this chapter. But before I introduce the relevance-theoretic approach to metaphor – as well as the parts that can be improved – I will digress for a little while from the Gricean framework for two other approaches to metaphor: one from Cognitive Linguistics which sees metaphor as primary a matter of thought, and the so-called 'imagistic' account which argues against the existence of metaphorical meaning.

2.5 Metaphor as a matter of thought

If metaphorical reading indeed starts with the literal reading, then there should be a difference in reaction time towards literal and non-literal expressions. Metaphors and other non-literal expressions should take longer to process because of the necessary rejection of the failed 'literal meanings'. The metaphorical reading, even if plausible, is likely to be pushed into the background when a literal reading is available. A computer-aided experiment conducted by Ortony et al. (1978) shows results that are roughly consistent with the pragmatic approach, although it may have more to do with the hearer's previous assumptions than the non-literalness of the utterance. They propose that instead of going for the 'literal meaning', the hearer accesses an already constructed representation of the usual interpretation as a framework for interpreting individual utterances. That is to say, if there is enough contextual evidence for a metaphorical reading (in conventionalised metaphors), there would not be any difference in reaction time. If there is not enough contextual support, the metaphorical interpretation comes after the literal one is assessed and rejected.

However, there may be no competition between two types of reading at all in metaphors taking the format A is B. And the more conventional and stereotypical a metaphor is, the less likely that its literal equivalent will be considered at all. Later studies on the same issue also report data suggesting that there is no necessary difference in reaction time (Blasko and Connine 1993; Glucksberg et al. 1982). A new approach appears to treat metaphor not as derived from its literal equivalent, but primarily as a matter of thought that underlies our conceptual system. It suggests that language is a cognitive ability intertwined with general cognitive abilities, and it

is influenced by our experiences in and responses to the world. The use of metaphorical expression reflects and is closely linked to how we perceive human cognition and psychology (Lakoff 1993; Lakoff and Johnson 1980/2003; Tendahl 2009).

Emerged in the 1980s, Cognitive Linguistics seeks a different take on the theory of thought, language, and meaning which breaks away from that offered by Chomsky. Their general arguments go against the Chomskyan approach to language, rejecting the claims that there is a hard-wired, universal principle – the *generative grammar* (Chomsky 1957) – underlying the structure with which words are combined to make intelligible phrases and sentences. They also reject the Fodorian framework to the Language of Thought Hypothesis, which suggests that to think is to operate on sentence-like mental representations in accordance with the internal inferential rules they have.

Cognitive Linguists, instead, see thought and language as largely embodied. According to this view, thoughts are the results of operations on analogous imagery of objects and situations which stand in for abstract concepts, and such connections between what we think and what we perceive/experience are reflected in linguistic expressions such as metaphors (Hills 2017). Concepts are not something purely propositional in our mind that exists independently from the sensory systems. The way we think is highly influenced (or even determined) by the way we are able to think as we bodily experience the surrounding environment.

In Chapter Four, I discuss the computational model of mind and relevance theory's development in more detail. And in Chapter Seven, I present an alternative line of research that shares some similarities with what Cognitive Linguists uphold in terms of human cognition to reconcile the perceptual and conceptual aspects. In the following paragraphs, however, I first introduce the Cognitive-Linguistic proposal of the notion of conceptual metaphor and some critiques on this approach.

2.5.1 Cross-domain mappings

Max Black acknowledges the cognitive property of metaphor but disputes its capability to generate insight about 'how things are' (1993: 39). Cognitive Linguists such as Mark Johnson and George Lakoff, in contrast, draw inspiration from cognitive science and propose that metaphor is pervasive in human language because it is pervasive in human thought (Lakoff and

Johnson 1980/2003). The words we choose to express a metaphorical idea is arguably the surface reflection of an underlying conceptual mapping between different cognitive domains (Johnson 2013; Lakoff 1993). This contrast between their account and more traditional ones is summarised as follows (Lakoff and Johnson 1980/2003: 3):

> Metaphor is for most people a device of the poetic imagination and the rhetorical flourish – a matter of extraordinary rather than ordinary language. Moreover, metaphor is typically viewed as characteristic of language alone, a matter of words rather than thought or action. […] We have found, on the contrary, that metaphor is pervasive in everyday life, not just in language but in thought and action.

Lakoff and Johnson (1980/2003) see metaphor as fundamentally a cross-domain mapping in the conceptual system, referred to as conceptual metaphor in *Metaphor We Live By*. What is traditionally understood as metaphor is referred to as *metaphorical expression*, or sometimes *linguistic metaphor* – the linguistic realisation of the underlying mapping (Lakoff 1993; Lakoff and Johnson 1980/2003). This distinction is influential among proponents of an embodied view of cognition and has since become part of many universities' curricula on the topic of metaphor. Following these definitions, metaphor is not only a way of expression, but also a way of conceptualisation, not only a feature of language use, but also a fundamental feature of thought. It nods to the idea of understanding and experiencing one thing in terms of another, but at the same time shows the cognitive character of natural languages by claiming that metaphor is pervasive in natural language because human conceptual system is metaphorically structured. Our mind seems to be wired to understand abstract concepts and emotions in a metaphorical way. As Lakoff (1993) explains, the general principle governing both the linguistic expressions and our patterns of inference is not found in the English grammar or lexicon, but is rather part of the conceptual system underlying natural language.

The idea that metaphor is part of the ordinary system of thought and language can be found in earlier research on the so-called *conduit metaphor* (Reddy 1979). Reddy argues for a constructivist view of communication, according to which language is a carrier of ideas, beliefs, and thoughts. A rough but conservative estimation suggests that at least 70% of the metalingual apparatus of English language is 'directly, visibly, and graphically' based on conduit metaphor' (Reddy 1979: 177). Lakoff and Johnson (1980/2003) further describe such type of cross-domain mapping into three major sets of correspondences:

Cross-domain mapping	Metaphorical expressions (italicised)
IDEAS ARE OBJECTS.	I can't *capture that feeling.*
LINGUISTIC EXPRESSIONS ARE CONTAINERS.	It's hard to *put it into words.*
COMMUNICATION IS SENDING.	You need to *get your thoughts across* better.

It is argued that during verbal communication, a conduit of words is constructed through which thoughts can be passed back and forth between the utterer and the hearer, in the sense that 'humans place their internal thoughts and feelings within the external signals of the language' (Reddy 1979: 288). The conduit metaphor model is set to answer some of the questions Classical theories failed to answer. By showing that language is largely metaphorical, Reddy rejects the assumption that only literal uses of language (such as those in everyday life) can be assigned a truth value, whereas metaphor is poetic, figurative and vague. Since metaphor is a feature of thought, it is misleading to treat it as mere decorative language.

The problem, however, is that communication in this framework is assumed to be unidirectional. The speaker 'passes over' her thought through a conduit for the hearer to 'unpack'. It also implies that while certain aspects are highlighted in the process of communication, others remain hidden (Tendahl 2009). It appears to fundamentally endorse the code model of communication. As Sperber and Wilson (1986/1995) and basically all relevance theorists argue, human communication simply does not work like this. Indeed, Lakoff and Johnson did not stop at the conduit metaphor model. Instead, they developed a systematic theory on conceptual metaphors.

Consider a typical conceptual metaphor ARGUMENT IS WAR. It acts as a basis for a variety of everyday expressions such as (the metaphorically used parts are italicised):

- He *attacks* every weak point in my argument.
- Your claims are *indefensible*.
- His criticisms are *right on target*.
- I've never *won* an argument with him.

Two things are involved in understanding these sentences: a) a basic knowledge structure that is found in the concept of WAR, and b) the ability to map this structure onto the concept of ARGUMENT. We do not just talk about argument as war; we perceive an argument in terms of the way we perceive the properties of a war. The understanding of these metaphorical expressions is structured around and influenced by what a war is characteristically thought to include, and the properties we access in return shape our understanding of argument and our behaviours: We see the person who holds the opposite opinion as our opponent. We attack and defend claims. We win or lose the argument. The basic conceptual metaphor ARGUMENT IS WAR grants access to a set of correspondences and associations between activities in an argument and those in a war, and map what happens in a war onto what happens in an argument. This creates a corresponding knowledge structure across two otherwise unrelated domains (Lakoff 1993). The conceptual area from which the metaphor is drawn is called the *source domain*, and the area where the correspondences are applied to is called the *target domain.* In this example, WAR is the source domain and ARGUMENT is the target domain. The target domain is understood in terms of the source domain. Compared with the *tenor-vehicle* relationship that focuses on the interaction between the meanings of a metaphorical expression and its referent (Richards 1936/1965), the source-target domain relationship aims to explain how such an interaction may be achieved. Some of these correspondences and associations are universal, others are context specific. Therefore, metaphor interpretation is largely influenced by our experience of the world, subject to individual understanding and socio-cultural bias (Hu 2004; Lakoff 1993; Lakoff and Johnson 1980/2003). Such correspondences are so conventionalised in everyday language, to the extent that language users seldom treat them as metaphorical in nature. In this sense, the discussion of conceptual metaphor is fundamentally ontological.

Conceptual metaphors do not bear truth conditions. The sentence 'argument is war' is a proposition, but ARGUMENT IS WAR as a conceptual metaphor is a mapping. According to the Cognitive Linguistic approach, mappings should not be thought as processes or as mechanic algorithms to generate outputs from inputs, but 'a fixed pattern of ontological correspondences across domains that may, or may not, be applied to a source domain knowledge structure or a source domain lexical item' (Lakoff 1993: 210). In other words, there is no need to access the 'literal meaning' before a metaphorical meaning is granted. In ARGUMENT IS WAR, mappings happen in a systematic manner, allowing interlocutors to focus on certain aspects of war, and to suppress the properties that are inconsistent with (or irrelevant to) the metaphors in question. For example, 'there are casualties in a war' is another assumption we may associate with war,

but it is suppressed when accessing this conceptual metaphor, because people normally do not get fatally injured or die from arguing. Instead, the interpretations of an argument being aggressive, drastic and possibly verbally violent has greater prototypical effects, therefore they are selected faster than the linguistically encoded meaning. Support for this claim is found in a series of studies (Gibbs 2001; Inhoff et al. 1984; Ortony et al. 1978; Pynte et al. 1996).

In conventional metaphors such as in those examples above, the mapping reflects a fixed pattern of conceptual correspondences, so the activation of this mapping automatically leads to the inference of relevant assumptions. However, not everything considered conventional in the source domain is conventional in the target domain, as in the case of a poetic metaphor such as 'We're driving in the *fast lane* on the *freeway* of love' (Lakoff 1993: 211). The words 'fast lane' and 'freeway' are not conventional in our conceptual domain of love, but they can be conventional in the conceptual domain of journey. In this case, correspondences can still be constructed based on the conceptual metaphor LOVE IS A JOURNEY. Lakoff (1987, 1993) thus predicts that mappings not only are systematic, but also work at a superordinate level. That is to say, a love relationship is often understood in accordance with vehicle rather than basic level categories of car, boat or plane. This is why we do not have A LOVE RELATIONSHIP IS A CAR at least in the English language.

An important insight from this comment is that cross-domain mappings function as mental shortcuts with which abstract ideas in the mind can be mapped onto more concrete ones that are typically embodied or grounded in bodily experience. Cross-domain mappings, or conceptual metaphors, therefore mediate between general human experience and the conceptual world, providing a basis on which interpretations of metaphors used in verbal communication are made possible. This can be seen as the Cognitive-Linguistic answer to the question of how to understand one thing in terms of another.

Then how do we select which set of mental representations to map onto our general experience? Can we gauge the feasibility of a mapping? Is there a hierarchy in terms of the order of activation? The answer proposed by Cognitive Linguistics is that they are constrained by what is called an *image schema*, 'a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience' (Johnson 1987/2013: xiv). I now turn to these issues as have been addressed in Cognitive Linguistics, and raise some further questions about them.

2.5.2 Image schema and the Invariance Principle

An image schema is a prelinguistic and recurring structure which is thought to emerge from our bodily interactions with the world and motivates the type of cross-domain mapping discussed above (Johnson 1987/2013; see also Lakoff 1987). In contrast to conceptual experience, they are non-propositional in nature, but 'play a crucial role in what we take as meaningful and in how we reason' (Johnson 1987/2013: xxxvii). Since an image schema is determined by how we interact with objects and situations, the components of it are organised in a fixed manner. This can be observed in conceptual metaphors like CONTAINER, UP-DOWN, FRONT-BACK, PART-WHOLE, which represent spatial orientations and relations (Turner 1990; Yu 1998). An image schema can also derive specific structures for abstract concepts, propositions, and patterns of inference, so we do not necessarily need a large amount of them (Johnson 1992). Below are two daily expressions based on the conceptual metaphors that derived from the CONTAINER image-schema:

(13) Tell me your story again, but *leave out* the minor details. (STORY EVENT AS CONTAINER)

(14) I give up, I'm getting *out of the race*. (A RACE EVENT AS CONTAINER)

According to Lakoff (1987), an image schema contributes to the claims that a) reasoning is embodied, and b) metaphorical projections go from the concrete to the abstract. This is to say, our conception is structured by and analogous to our bodily experience, which goes against both the Chomskyan and Fodorian frameworks that suggest certain features of the human cognitive system exist *a priori*, that they are innate to our mind. Furthermore, image schema is a notion on the level of generality (Johnson 1987/2013). This means that it is somewhat independent from culture and accounts for general human understanding, providing basis for making sense of basic mappings such as MORE IS UP.

Research in Cognitive Linguistics further proposed the Invariance Hypothesis, later renamed as the Invariance Principle (Lakoff 1990, 1993; Lakoff and Turner 2009; Turner 1990). As Lakoff wrote (1993: 215):

> Metaphorical mappings preserve the cognitive topology (that is, the image-schema structure) of the source domain, in a way consistent with the inherent structure of the

> target domain. What the Invariance Principle does is guarantee that, for container schemas, interiors will be mapped onto interiors, exteriors onto exteriors, and boundaries onto boundaries; for path-schemas, sources will be mapped onto sources, goals onto goals, trajectories onto trajectories; and so on. […] One should instead think of the Invariance Principle in terms of constraints on fixed correspondences.

This quote suggests that cross-domain mappings are not achieved by copying the image-schematic structure from the source domain to the target domain. The structure of the target domain can override some aspects of the structure in the source domain. For example, in the source domain, if I give an object to another person, I will lose that object. But in the target domain, I can give someone information without me losing such information. This shows that the target domain does not inherit the structure of 'giving-losing' from the source domain. Cognitive Linguistics explains this phenomenon by suggesting that the mapping is also restricted by our general knowledge about these actions in the target domain, which cannot be violated (Lakoff 1993; Turner 1990). This mechanism guarantees that mappings do not happen randomly. There is no metaphor about death being a teacher or the action of teaching, because they simply do not share the same 'generic-level structure' (Lakoff 1993: 233). The Invariance Principle also hypothesises that an image schema is always preserved by the metaphor(s) based on it (Lakoff 1990, 1993; Yu 1998). Possessing a spatial image schema enables one to make inferences about abstract concepts in English such as time, states, changes, processes, actions, causes, purposes, and means. In this way, metaphor becomes central to both language and cognition.

Three decades on from when it was first proposed, the Invariance Principle is still not yet fully agreed on even among Cognitive Linguists. As Turner (1990) points out, the constraint of image schema is not always inviolable. In creative metaphors, a violation might be significant and necessary to facilitate a different conception of the target. Yet the creativeness of a metaphor is hard enough to gauge, so there might not be a clear boundary between violable and inviolable constraints. Presume that every conventional metaphor started as a creative one, for which the image schema is violable, why and how at some point along the metaphor's history of usage the same constraints on the image schema became inviolable? We find no answers in the work of Lakoff, Johnson and Turner.

A more general challenge concerns the poverty of mappings (Grady 1997; Grady et al. 1996), according to which, only a limited set of units from the source domain is mapped onto the target domain. Consider these well-established correspondences based on the conceptual metaphor THEORIES ARE BUILDINGS:

(15) Your facts are *solid*, but your argumentation is *shaky*.
(16) She's on very *solid ground* with her latest theoretical work.

Some of the assumptions from the source domain include strong buildings remain standing, a building requires solid material, skilled construction and a firm foundation. Correspondingly, theories can be durable or not due to similar reasons. However, some salient and important elements of buildings (doors, windows, floors, and tenants) do not enter our metaphorical understanding of theories. Nor do major functions of buildings, even if they are not blocked by the target domain structure (Grady 1997).[15]

The Cognitive Linguistic account of metaphor can be useful to draw patterns out of individual metaphors, and to make sense of complex ideas in terms of relatively simple and direct bodily experience. With its root in (usually)_perceptually-based interactions with the world, image schemata are supposed to have the potential to 'transfer' understanding or expectation to the conceptual world in an analogous manner. Then how can image schemata contribute to natural language comprehension? One attempt to answer this question is the proposal of *conceptual blending* (or *conceptual integration*), a theory of cognition developed and mostly advocated by Gilles Fauconnier and Mark Turner. It has been adopted in many disciplines, most notably in Cognitive Linguistics to account for the online processing of verbal metaphor with an emphasis on the role of imagery. Simply put, conceptual blending refers to the cognitive operations to blend elements from various scenarios to create new mental spaces. These are 'small conceptual packets constructed as we think and talk, for purposes of local understanding and action' (Fauconnier and Turner 2002: 40), and the new mental spaces are the projections from existing ones that act as inputs to blending. As a result, new concepts and new meanings can

[15] One way to solve this problem, as Tendahl (2009) suggests, may be to resort to expectations of relevance. Instead of posing strong constraints, the Invariance Principle is perhaps about guiding the comprehension process, so that a novel metaphor like 'His theory has many windows', though strange, may still lead to a plausible interpretation to meet the expectation of relevance. Nonetheless, this is not pursued by most Cognitive Linguists.

also be invented in such complex, selective, and mostly unconscious operations when the unique capabilities of human mind to integrate, imagine and create are recruited.

Here is a simple example to illustrate the basic blending process: Imagine a browser window, a graphic user interface element for viewing a website's contents or applications, typically on a computer display screen.[16] We have inputs from the mental space of computer science and from that of a window. A computer screen is not a window as a daily object, but it shares some similarities with a window, which can be recognised and used as a basis for the transfer of knowledge or expectation. We can open a window, view things from a browser window as we can from one in our room, and if we close that window, what used to be presented in front of us will now be hidden from us. We do not need anything special to perceive and understand 'window' in both ways. According to conceptual blending theory, this shows that blending is mostly a subconscious and common operation.

Conceptual blending theory was developed against the background of Cognitive Linguistics, and in particular, its argument about metaphor being a matter of thought. Proponents of this theory argue that blending underlies metaphorical thought, and metaphor should be regarded as a way of blending (Fauconnier and Turner 2002). The notion of cross-domain mapping does not capture the complexity or the creativity of natural language (Fauconnier and Turner 2008). Metaphor usually requires much more than a mapping but the integration of conceptual knowledge, imagery, or other vague aspects of our bodily experience. On the other hand, blending theory has also been criticised for unnecessary ambiguity caused by the involvement of multiple mental spaces (Ritchie 2004). Lakoff (2008) further comments that there are cases of metaphor that do not involve blending. The theory is also challenged for its lack of testability if it was to account for general cognitive operations (Gibbs 2000).

What we need to remember about this entire line of thought is that the proposal of conceptual metaphor is not meant to deal with the online processing of metaphor but rather the conceptual basis on which interpretations of what we encounter as metaphor are made possible. The notions of image schema and conceptual blending try to further explain the underlying

[16] Fauconnier and Turner (2002) identified four types of blending. What they call the 'double-scope blending' (p. 131), to which the browser window example belongs, is considered unique to human. I will not elaborate on this issue as a simple example would suffice for the discussion here.

cognitive mechanism, but they also raise many more questions that are still unanswered.[17] After all, we need a theory that explains what happened *during* metaphor comprehension, and how different elements and dimensions of an utterance interact with each other to contribute to the communication of speaker's intention.

2.6 Against metaphorical meaning: The imagistic account

Most discussions around metaphor concern the relationship between meaning and truth: whether metaphor mean anything, and whether this meaning bear any truth value. Suppose the answer to these two questions are affirmative, then one may ask is the truth metaphor bears any different from that of more 'literal' sentences (for example, 'water boils at one hundred degrees Celsius at standard atmospheric pressure.'), or is it true in some cases but not in others? Davidson (1978) provides a unique approach to what is usually considered as propositional. He questions the notion of metaphorical meaning, claiming that metaphor does not mean anything more than what the words in that metaphor mean in their most literal interpretation.

Consider the following excerpt from a poem by the contemporary poet Tracy K. Smith:

(17) You stepped out of the body. Unzipped it like a coat. (Smith 2019)

This sentence contains examples that may be called 'imagistic metaphor', through which the reader is encouraged to take a novel perspective in seeing one thing as another. As a result, the metaphor is intuitive and experiential rather than cognitive, containing nothing more than their most 'literal' content (Davidson 1978). In the utterance in (17) the reader accesses the linguistically encoded meaning of 'step', which encourages a mental image of a person 'stepping out of something'. By associating this action with 'body', the reader can interpret the first half of this example as referring to a person's death by semantic resemblance. The same process applies to the second half. The activation of 'unzip' gives rise to a mental image of a person getting out of their coat. When combined with the link between 'body' and 'coat', this mental image leads to the same interpretation of death. In this way, as the imagistic account

[17] In fact, with its interest in perceptually-based elements, the model proposed in this thesis may align relatively well with some of the ideas expressed by the Cognitive Linguistic approach. There is a possibility that the dual-route processing model may be compatible, to a certain extent, with certain aspects of conceptual blending. However, this thesis aims at accounting for online processing of utterance and decides to approach this issue from the perspective of relevance theory.

argues, metaphor prompts the construction of mental imagery, which leads to a new perspectival experience, without the need to assign any extra or 'extended' propositional content to the words, creating a sense of ambiguity that the same words mean one thing in ordinary context and another in metaphorical context. As Davidson puts it (1978: 46-47):

> [T]here is no limit to what a metaphor calls to our attention, and much of what we are caused to notice is not propositional in character. When we try to say what a metaphor 'means,' we soon realize there is no end to what we want to mention. […] A picture is not worth a thousand words, or any other number. Words are the wrong currency to exchange for a picture.

In ordinary contexts, our thoughts and beliefs are formed based on our understanding of the world as it is. In metaphorical contexts, we 'see' the world through the images and feelings it inspires. Metaphor is unparaphrasable only because there is nothing special about it, hence nothing to paraphrase at all. In other words, Davidson is saying that metaphor has no extra non-literal meaning that most other theories believe to be the vehicle for communicating new ideas.

It might appear that by saying metaphor has no special meaning, the imagistic account shares the view held by relevance theory, but in fact they are fundamentally different. What Davidson (1978) suggests is that the speaker communicates nothing more than what the words encode. Relevance theory, however, argues that the communicated meaning in a metaphor and in any other language use is contextually modified so it only partially overlaps with the encoded meaning. According to Davidson, in 'The Spirit of God moved upon the face of the waters', any extended meaning the word 'face' has applies correctly to water, applies to other surfaces as well. What we are doing is simply introducing a new term into our vocabulary. Acknowledging this would mean the elimination of all sense of metaphor, or in Davidson's words, 'to make a metaphor is to murder it' (1978: 34). It is true that some of the effects achieved by metaphors are not propositional, therefore they should not be gauged in the same way as Grice's (1969) notion of speaker's meaning.

However, as Camp (2008) suggests, this does not mean that metaphor does not communicate speaker's meaning. No matter how ambiguous and vague the utterance in (17) seems, we can still understand *something* the speaker is communicating, and the fact that we can attribute this *something* to the speaker proves that metaphors produce speaker's meaning (Grice 1969).

These metaphors are also paraphrasable to a certain extent, despite that it would be far from exhaustive in terms of the total effects the original text may have. Furthermore, if a metaphor only communicates what is 'literal', then a hearer might have difficulties in deciding which interpretation of the sentence 'My surgeon is a butcher' should be accepted (that the surgeon also has a job as a butcher, that they are professional and operate precisely, that they are reckless and causes the patient to spill blood, that they 'butcher' the patient's cheque book because he charges a lot, etc.). This is usually not the case, because what yields a plausible interpretation is not the encoded concept, but a modified, context-sensitive concept which consists of a sub- or superset or a combination of sub-/superset of the encyclopaedic information associated with the encoded concept. The construction of this type of concept will be discussed in Chapter Three and revisited in Chapter Seven.

According to Davidson (1978), a simile points to a real resemblance between two things, whereas the truth value of a metaphor is determined by its use. Metaphor takes the place of simile when the hearer believes the sentence, when taken literally, is false. In reading 'Richard is a lion', the hearer knows that Richard is not the animal lion, so he looks for any other resemblance between Richard and lion, which yield a metaphorical interpretation. That is to say, 'these ideas don't explain metaphor, metaphor explains them' (Davidson 1978: 33). This conclusion, for one thing, says little about how metaphor works. If what metaphor does is to juxtapose two things in discussion for us to notice any unusual features, there is no limitation as to what we would consider unusual. 'Richard is a lion' can conjure up almost anything that is accessible about Richard and the lion, all being 'literally true'. Indeed, all these mental representations would ultimately lead to at least one feasible interpretation of the metaphor, but processing them is too cognitively inefficient. Meanwhile, the imagistic account suggests that 'literal meaning', the only meaning at work, is to evoke a mental image that the hearer sees one thing as another. This alone does not explain why metaphor does much more than making the hearer notice what is otherwise unnoticed. Rejection of metaphorical meaning would work if and only if truth conditions are all that give meanings to words. However, discourse connectives and interjections do not bear truth values, yet they still express a certain speaker-intended meaning. I will come back to this point when discussing relevance theory's view on communication in Chapter Three, and the primacy of propositionality in Chapter Four.

2.7 Summary

There have been many theories across areas of linguistics that look into how metaphor works, proposing accounts that have either developed earlier theories or offered new perspectives to approach this issue. Those introduced and discussed in this chapter are some of the most influential ones; but as is suggested, none of them is persuasive nor comprehensive enough to give a full picture of what actually happens when people are using metaphors to communicate a certain thought.

The semantic approach assumes the existence of a distinction between literal and non-literal meaning. By doing that, it regards metaphor as a matter of meaning being modified by the interactions between words as they are put against each other. The metaphorical interpretation of a sentence is therefore the result of assigning a new meaning, which deviates from the standard 'literal meaning' to various degrees, to some constituents of that sentence. Furthermore, this view also assumes that meaning is compositional – that the meaning of a complex sentence can be broken down into that of constituent parts. The literal reading is necessary in order to know what kind of new meaning is assigned. As is suggested by pragmatic studies, and many of which come from relevance theory, the linguistically encoded form as the output of a mental grammar is just the starting point for a richer and more refined inferential process. Such a process is so common that it arguably happens in all cases of verbal communication. For any single expression in natural language, there is perhaps no such thing as a standard 'literal meaning'. Therefore, the metaphorical meaning does not have a place to deviate from, and the metaphorical expression may very well go through the same lexical modification as any other uses of language. This, as we will see with more examples in Chapter Three, is the one of the basic arguments that relevance theory has provided.

The pragmatic approach focuses on speaker's communicative intentions when she resorts to metaphor. The idea that what the speaker means can be different from what her words mean is not entirely new, but it was not until Grice that this issue was studied as a proper discipline. According to Grice (1975, 1989), the distinction is to be drawn between what is said and what is meant, with both interlocutors assume the Cooperative Principles are observed. Metaphor, being literally false, is a deliberate and overt violation of the Maxim of Quality in saying one thing but meaning another. The hearer understands this intended meaning by inferencing conversational implicature(s). The inconsistency between speaker's meaning and sentence

meaning is what enables a metaphorical reading (Searle 1993). Since Grice was not specifically interested in metaphor (or other cases of figurative language), there are aspects that can and need to be improved and developed in terms of his approach to metaphor. Relevance theory has proposed and has been seeking to improve a deflationary account that fits neatly in a theory of human cognition and communication. This thesis argues that this is a promising direction which can lead to the answers to many questions that cannot be answered by other theories, but it also suggests that certain modification needs to be made if we want to explain the non-propositional effects.

The other two developments in metaphor study, the Cognitive-Linguistic approach and the non-cognitivist imagistic account, both provide interesting and insightful ideas. Despite their highlights on the non-propositional dimension, as far as this thesis is concerned, neither of them is persuasive enough to fully explain what happens during metaphor processing.[18] What I hope to present in this thesis is a model built on and largely inspired by the fully propositional approach that is taken by standard relevance theory. Meanwhile, this model acknowledges the contribution from these two lines of thought, and seeks to highlight the role non-propositional elements play, which has been largely underestimated or even blatantly ignored in previous theories.

[18] Research has been conducted to show the parallels and differences between Cognitive Linguistics and relevance theory (Wilson 2011b), and to incorporate aspects of both to propose a 'hybrid theory' (Tendahl 2009; see also Tendahl and Gibbs Jr 2008). There are also examinations on Davidson's arguments to see if they can be integrated into a pragmatic account (e.g., Camp 2006b; Carston 2010b).

Chapter Three: Relevance theory, verbal communication and metaphor

> The assessment of relevance, like the assessment of productivity, is a matter of balancing output against input: here contextual effects against processing effort.
>
> Sperber and Wilson (1986/1995: 125)

3.1 Introduction

As far as we know, metaphor only exists in human language, because saying one thing but simultaneously meaning$_{NN}$ something else appears to be a uniquely human ability. But does it mean that metaphor itself is unique insofar as it adjusts meaning in such a subtle way? The previous chapter has shown how the emergence of pragmatics has provided the opportunity for the explorations of communication by investigating more closely look at what we mean by 'meaning'. However, on the face of it, it shares the view taken in Classical rhetoric that cases of metaphor represent a departure from literalness. What it cannot explain, and what is attributed to aesthetic purposes in Classical rhetoric, is the reason metaphor exists. If strictly literal meaning is available and easier to recover, why use metaphor at all? And if metaphor is about what a speaker means by them, why should the hearer, having recognised a flouting of the Maxim of Quality, interpret the metaphor in one way but not in other ways? Equally importantly, how?

There are other people who see metaphor as not that different from what we call 'literal language', but for very different reasons. This view goes back to the Romantic poets and their advocacy of everyday language, and is endorsed by cognitive scientists and modern literary critics. For Cognitive Linguistics such as Lakoff and Johnson, metaphor is a regular part of language use because it pervades thought. The use of metaphor reflects the conceptual mappings between those cognitive domains which underlies our thought processes. Relevance theorists also argues that there is nothing inherently special about metaphor, describing it as emerging naturally in verbal communication. Metaphor is indeed important in verbal communication, and the use of metaphor shows distinct styles of writing or cultural-specific denotation. However, metaphor is not special. It does not require a unique and exclusive mechanism, rather, it is positioned on a continuum together with other examples of 'loose talk'. At the one end of this continuum lie 'literal' uses. At the other, lie highly creative ones.

The key factor in arriving at a metaphorical interpretation, as with all interpretation, is relevance. The term appears in other fields of research, and can be understood in different ways. The purpose of this chapter is to present how relevance is defined by relevance theory (Sperber and Wilson 1986/1995) as an inherent property of cognition, and the role it plays in metaphorical reading. In the next section, I start by introducing the relevance-guided heuristic ubiquitous in cognition and verbal communication. The main idea is that human cognition is geared towards optimal efficiency, using the least cognitive effort to achieve the most cognitive effects – modifications on a person's cognitive environment in the forms of relevant contextual implications, strengthening or contradiction of previously held assumptions (ibid.). The leads to a presumption of verbal communication that every utterance directed at a hearer will come with the optimal relevance for that hearer.

Section 3.3 focuses on how metaphor is viewed by relevance theory as a phenomenon emerging naturally in verbal communication which requires no special treatment from that involved in the interpretation of other expressions. According to the original account in Sperber and Wilson (1986/1995), metaphor falls under the more general category of loose use, in which the denotation deviates from what is linguistically encoded. Instead of recovering the 'literal meaning' first, rejecting it, and then arriving at a metaphorical interpretation, the hearer constructs a few strong implicatures or a range of weak implicatures that satisfy his expectation of relevance. Compared to more 'literal' uses, metaphor also brings into attention what is known as *poetic effects*, when the thoughts communicated cannot be characterised into one proposition. These effects achieve their relevance by making marginally manifest or more manifest a wide range of very weak implicatures in otherwise ordinary cases of search for relevance (Sperber and Wilson 1986/1995). While poetic effects take into consideration how phenomenological states may arise during communication, these states are thought to be presented as conceptual entries or emotions that have been conceptually processed (Pilkington 2000).[19]

Section 3.4 discusses the *ad hoc* concept construal. This is further developed specifically in relation to metaphor by Carston (2002, 2010b) and Wilson and Carston (2007). As the linguistically encoded meaning undergoes a lexical modulation process, a wide range of

[19] See Chapter Five for further discussion on metaphor's poetic effects and whether this notion, as proposed in Sperber and Wilson (1986/1995) and elaborated in Pilkington (2000), can fully account for the non-propositional nature of what the addressee experiences during the reading poetic metaphors.

assumptions are derived from the encyclopaedic information associated with a concept, and they are made marginally salient to the hearer in a given context. However, this model may be challenged by what is known as emergent properties, those are not derived directly from the encoded concepts. More importantly, both the notion of poetic effects and the *ad hoc* concept construal overlook the possibility that some aspects of communication can be non-propositional in nature. They do not need to be 'translated' into a conceptual format but can be communicated in a more direct and intuitive way. I end this chapter with a short summary and signpost the focus of Chapter Four.

3.2 A relevance-guided heuristic for verbal communication

3.2.1 The theory and the notion of 'relevance'

The classical code model of communication treats communication as a process of encoding-transferring-decoding: the speaker encodes a concept into an expression in natural language, communicates it to the hearer, who then decodes the meaning. This model has been largely abandoned in contemporary research for several reasons. The code model regards human language and its functions as very similar to those animal behaviours serving communicative purposes, such as the flight patterns of bees and the 'trunk language' of elephants (Sperber and Wilson 1986/1995). Human language may be a code in format, but verbal communication goes way beyond a coding-decoding process. There is a genuine gap between what is linguistically encoded – or what is traditionally taken as the 'literal meaning' of a word – and what is actually communicated. This gap can be bridged by inference, starting and then departing from the decoded meaning. In cases such as a metaphor when the speaker says one thing but means another, this gap is very obvious; but even in everyday language which is usually considered to be 'literal', the decoded information still needs to be fleshed out:

(18) He's not there now.

(19) Ben_x is not in his office_l at time_t.

Apart from decoding the meanings of individual words in (18), reference assignment and disambiguation are needed to establish the explicitly expressed proposition (19). Furthermore, parts of this sentence need to be contextually adjusted to fine-tune what exactly the speaker means. This cannot be done through further decoding, but through a lexical pragmatic process,

which challenges the very idea of the 'literal meaning', and will be discussed below. For now, we will turn to a different example to show how relevance theory addresses some questions arising from the Gricean view.

Suppose Anna is walking on the beach with her friend when a seagull snatches her fish and chips from her hands. Anna then utters 'That bird is the devil!' Clearly, she is not claiming the bird is some supernatural being that wants to do her harm but expressing her thoughts and emotions towards the attack and the seagull that did this. According to the Gricean view discussed above, Anna is communicating a certain type of conversational implicature that goes beyond what is said in her utterance. However, what the Gricean view does not explain is that not everything communicated by this utterance is of equal degree of strength – some assumptions are stronger than others, and the strong ones are more relevant, hence more likely to be represented in the hearer's mind. The hearer may represent assumptions of different degrees of 'relevance' such as:

- Anna does not like the seagull that stole her food.
- Anna does not like seagulls in general.
- Having her food snatched from hands makes Anna feel bad.
- Anna would not suggest anyone to get close to seagulls.
- Anna believes that the devil exists.

There is no guarantee as to how many assumptions will be recovered by the hearer, or whether the ones recovered by the hearer will be the same as those Anna intends to convey with her utterance. This example also shows that communication is not about reduplicating the speaker's thoughts.

As a contemporary approach to communication and cognition, relevance theory (Sperber and Wilson 1986/1995; Wilson and Sperber 2004) follows the traditions laid out by Grice. It focuses on ostensive behaviour, a subtype of those human communicative behaviours with which a speaker provides the hearer with evidence that something has been intentionally communicated. In order to understand Anna's utterance, the hearer assumes that Anna not only wants him to notice her communicative intention, but also take this utterance to bear the content she wants to communicate. Furthermore, the hearer also assumes that whatever Anna wants to communicate will at least be relevant to him in some way to worth being communicated at all.

What Anna's utterance shows are the two principles around which relevance theory is built. According to the *Cognitive Principle of Relevance*, 'human cognition tends to be geared to the maximisation of relevance' (Sperber and Wilson 1986/1995: 260). Human cognition is constantly searching for information which will modify their cognitive environment and help derive positive cognitive effects through interaction with mentally represented contextual information. Humans all have limited cognitive resources, and need to make the most out of those resources in order to improve our representation of the world. The search for optimal relevance is therefore central to human cognition.

The relevance of an Input is based on two factors: the number of positive cognitive effects which contribute to the fulfilment of our goals, and the amount of cognitive effort required for processing such an input. Cognitive effects are the results of interaction between new inputs to cognitive processes and what is already mentally represented. They are modifications on a person's cognitive environment through the generation of plausible contextual assumptions, strengthening or contradicting/abandoning existing assumptions. Sperber and Wilson (1986/1995: 265-266) provide a more precise definition as follows:

(a) Relevance to an individual (classificatory)
An assumption is relevant to an individual at a given time if and only if it has some positive cognitive effect in one or more of the contexts accessible to him at that time.

(b) Relevance to an individual (comparative)
Extent condition 1: An assumption is relevant to an individual to the extent that the positive cognitive effects achieved when it is optimally processed are large.
Extent condition 2: An assumption is relevant to an individual to the extent that the effort required to achieve these positive cognitive effects is small.

As the definition suggests, relevance is an inherent property of the input for a certain individual on a certain occasion. It is also a matter of degree, meaning that an input can be more or less relevant than others. An input is considered relevant in this sense if processing it yields enough positive cognitive effects to be worthwhile of the cognitive effort expended in deriving them. The linguistically decoded information is not the end result of comprehension but only the starting point. After being processed, represented, and stored, a piece of new information becomes old information, which may participate in future processing.

Since the search for relevance is a built-in feature of human cognition, it follows that we will only process what we consider to be relevant. In verbal communication, the speaker knows that the hearer is entitled to only pay attention to relevant stimuli. To make communication even possible, the speaker will form her utterance in such a way that it appears relevant enough to the hearer. As the *Communicative Principle of Relevance* states, every utterance in verbal communication comes with an expectation of relevance, where the hearer presumes it to be relevant enough to worth processing. The more relevant a stimulus is, the more strongly it will be mentally represented by the hearer, and more manifest it is. Manifestness in relevance theory is a matter of degree concerning dispositions. 'A fact is *manifest* to an individual at a given time if and only if he is capable at that time of representing it mentally and accepting its representation as true or probably true' (Sperber and Wilson 1986/1995: 36, original emphasis). The more relevant a manifest assumption is, the more likely it will be mentally represented.

Being manifest is a weaker notion than being known or assumed, because it is impossible for two individuals to have identical knowledge or assumptions about anything. While mutual knowledge between two communicators might guarantee successful communication, that is rarely the case in real-life scenarios (Sperber and Wilson 1986/1995). What is more likely to happen is that there might be a set of facts that are manifest to the two individuals, therefore both of them will have access to it. However, since this set only represents the intersection of all the facts that are manifest to either of them, the two individuals will never share all that is accessible to them. They are capable of making the same assumptions, but there is no guarantee that they will.

The notion of mutual manifestness is therefore a characterisation of all the assumptions that are manifest to both communicators at a given time. It plays a central role in the relevance-theoretic account of ostensive communication. Verbal communication is geared towards achieving mutual manifestness – not only is the speaker's informative intention recognisable for the hearer, but the speaker overtly makes it manifest that it is her intention that the hearer recognise her intention to inform. In order to do so, she produces an ostensive stimulus as evidence for inferring her intended meaning. Simply uttering 'I don't drink' would not make it mutually manifest what exactly the speaker intends to communicate; but uttering the same sentence when being offered an alcoholic drink would be treated as ostensively communicating her intention of refusal. The hearer is also expected to recognise this intention as being made mutually manifest. A speaker can make several assumptions manifest at the same time by

verbal or non-verbal behaviours. The hearer identifies which propositions the speaker intentionally makes manifest because those would help achieve optimal relevance.

Ostensive behaviour comes with the presumption of optimal relevance, which is spelt out as follows (Sperber and Wilson 1986/1995: 158):

(a) The set of assumptions I which the communicator intends to make manifest to the addressee is relevant enough to make it worth the addresse's while to process the ostensive stimulus.
(b) The ostensive stimulus is the most relevant one the communicator could have used to communicate I.

This means that the hearer of an utterance will expect enough positive cognitive effects to be evoked from inputs such as linguistically encoded contents, and their processing of these inputs will not continue once optimal relevance is achieved. As Wilson and Sperber (2004: 259) put it, our comprehension process follows a relevance-guided heuristic as summarised below:

(a) Follow a path of least effort in computing cognitive effects: Test interpretive hypotheses (disambiguations, reference resolutions, implicatures, etc.) in order of accessibility.
(b) Stop when your expectations of relevance are satisfied.

The above principles, and the heuristic that follows from them, suggest that the automatic recovery of the logical form of an utterance needs to be enriched for the full speaker's meaning. The hearer is responsible for constructing assumptions about the intended meaning, based on both contextual information and their encyclopaedic knowledge stored in memory. This process, however, may take place in various directions and to different degrees, which requires the hearer to construct assumptions and supply them with contextual information. We may use the following sentence to illustrate how relevance guides our inference:

(20) You are a fever I am learning to live with. (Siken 2005: 31)

To understand what the speaker means by this sentence, the hearer needs to identify which part is the new information. In this case, it is the metaphorical expression 'you are a fever'. This

input then interacts with assumptions the hearer already held in his memory, and a range of contextual assumptions may be inferred including but not limited to that:

(20a) A person with a fever might experience high body temperature, rapid heartbeat, shivering, headache, etc.
(20b) Symptoms caused by a fever are unlikely to disappear very quickly.
(20c) Living with a fever is an unpleasant experience both physically and emotionally.

Based on these assumptions, the hearer may draw an implicated conclusion in (20d):

(20d) The person addressed by the poet is causing some unpleasant physical and emotional experience which is unlikely to go away.

As the above example shows, the linguistically decoded meaning of 'fever' and its associated inferences provide inputs for the inferential process. These inputs, when processed together with relevant representations in his encyclopaedic knowledge and perhaps a previous perceptual experience, yields a feasible interpretation that satisfies the hearer's expectation of relevance. Meanwhile, the conclusion in (20d) is more relevant than any other possible interpretations to the hearer on this occasion, and therefore it is the one taken to be 'what is meant' by the speaker. Another possible contextual conclusion drawn from (20a-c) might be that:

(20e) The person addressed as 'fever' is causing the poet to have higher than normal body temperature for a certain length of time.

While the conclusion in (20e) is also logically inferred, it is unlikely to be taken as a plausible interpretation of the utterance in (20) because this conclusion is less relevant in fulfilling the communicative goal. It also requires more cognitive effort to process if the reader wants to have enough positive cognitive effects. This mechanism shows a cost-effect relationship between inputs and processing effort. Other things being equal, the more cognitive effects it yields, or the less cognitive effort processing it requires, the more relevant that input is to the individual who processes it. It is also more relevant than other competing inputs.

Notice that in the above process, the cognitive effects generated from processing the original sentence are all about making manifest a certain assumption, or making a certain assumption more manifest than others. Since manifestness is a property of propositions, the relevance of the interpretation of the utterance in (20) to the hearer is gauged solely by its conceptual content. However, while two people may have more or less the same interpretation (contextual implicature) of this sentence, they may have different psychological responses. Assume hearer_1 is an adult who has been in a passionate romantic relationship with his partner. In an instance of successful communication, he will not only recognise the speaker's communicative intention, the implicature, and the psychological states the speaker is in, but he may also produce a strong emotional response to what the speaker is communicating. This emotional response comes in parallel to cognitive effects, because hearer_1 is feeling the emotion, which is a type of non-propositional effect (Wharton and de Saussure 2023). Of course, he may know, or may not know, what that emotion is, but such knowledge is not a prerequisite to the feeling.

3.2.2 Explicature, implicature, and the indeterminacy of speaker's meaning

In the Gricean framework, there are two notions of meaning: natural meaning ($meaning_N$), which does not involve speaker's intention, and non-natural meaning ($meaning_{NN}$) which does. Following this, a line is to be drawn between displaying direct evidence that (showing) and meaning that (meaning_{NN}). Relevance theory, however, suggests that this assumed distinction is not as clear-cut, and there should be instead a continuum, with most cases in human communication positioned somewhere in between. The speaker's intention is not to directly modify the hearer's thought, but to modify the hearer's cognitive environment, which consists of all the facts that are manifest to him (Sperber and Wilson 1986/1995). The speaker can only partly predict what effects this modification would have on the hearer, and communication involves weaker and vaguer aspects than what Grice has accounted for. As we have seen, this means that communication is not about generating mutual knowledge, but about making an assumption (or a set of assumptions) mutually manifest between the interlocutors.

According to Grice (1957), the truth of 'x means_N that p' is dependent on the fact that p is true. In his influential paper, Grice gave the example 'Those spots mean_N measles'. This claim is only true when the patient does have measles and not just, say, blemish. Meaning_{NN}, on the other hand, conveys the speaker's intention to induce a certain response from the hearer by

using linguistic expressions or codes. When an utterer *U* means$_{NN}$ something by *x* for a hearer *A*, she intends (Grice 1969: 151):

(a) *A* to produce a particular response *r*
(b) *A* to think (recognise) that *U* intends (a)
(c) *A* to fulfil (a) on the basis of his fulfilment of (b)

Consider the following conversations in the scenario where two friends are talking about the film they just watched as they walked out of the cinema:

(21) Anna: What do you think of it?
Ben: I should've had stayed at home.

Ben's utterance in (21) is not a direct answer to Anna's question (i.e., without explicitly offering his opinion about the film). However, according to the Cooperative Principle, Anna has no reason to assume Ben is not being cooperative in their conversation, and that he would not say so unless he thinks that *q*. Ben's regret of going to watch this film denotes a lack of interest or enthusiasm, which leads Anna to believe that Ben has not enjoyed the film and that Ben intends Anna to recognise his intention to express this unpleasant experience. In this way, Anna's recognition of Ben's communicative intention is the reason for, and not just the cause of, her producing an implicated conclusion that:

(21a) Ben did not enjoy the film.

Built around the Gricean arguments, relevance theory proposes that instead of a cut-off point between showing and meaning$_{NN}$, there is an array of cases between these two notions where speaker's meaning can be more or less determinate, with different degrees of manifestness. Instead of meaning$_{NN}$ just one proposition *p* by uttering *x*, the speaker intends to communicate a set of related propositions, which some relatively strongly or weakly manifest. This set of propositions can also be shown but not meant$_{NN}$ as defined by Grice. Therefore, both showing and meaning$_{NN}$ fall under a broader category of *ostensive-inferential communication* (Sperber and Wilson 1986/1995: 54):

> Ostensive-inferential communication consists in making manifest to an audience one's intention to make manifest a basic layer of information. It can therefore be described in terms of an informative and a communicative intention.

As mentioned earlier, relevance theory treats communication as being achieved through an inferential process, where an ostensive stimulus is processed in combination with contextual information to yield a relevant interpretation as an output. In the conversation in (21), the linguistically encoded content of Ben's utterance is pragmatically adjusted to denote a certain meaning in (21b), while at the same time ruling out irrelevant ones such as that in (21c). The adjusted information in (21b) is processed against previously stored assumption in (21d) and (21e), yielding an overall interpretation of Ben's utterance as in (21a) that satisfies Anna's expectation of relevance.

(21b) Ben thinks he should have had stayed at home instead of going to the film.
(21c) Ben thinks he should have had stayed at home to avoid the pandemic.
(21d) If a person thinks he should have had stayed at home instead of going to the film, he regrets going to the film.
(21e) If a person regret doing something, he has not enjoyed doing it.

In the above example, the assumption in (21b) is the result of linguistic decoding combining with disambiguation, reference resolution and free enrichment, whereas that in (21a) is part of speaker's meaning. In other words, the 'what is said' in Gricean framework includes two parts that do not necessarily coincide (Wilson 2017). To solve this problem, relevance theory introduces the term *explicature*, analogous to Grice's own 'implicature'. An explicature is an explicitly communicated assumption, and the assumption is explicit if and only if it is 'a development of a logical form encoded by [an utterance] *U*' (Sperber and Wilson 1986/1995: 182). Anything that is not explicitly communicated, that is, anything that does not derive from

a logical form to a fully propositional form, is an implicature.[20] An explicature consists of what is linguistically encoded, as well as what is contextually inferred. Explicitness is therefore a classificatory concept.

Using the notion of explicature, Ben's utterance in (21) can be formulated as follows:

I should've had stayed at home.

(21f) Ben should have had stayed at home.

(21g) Ben should have had stayed at home instead of going to the film.

(21h) Ben should have had stayed at home instead of going to the film that Anna is asking him about.

And the list goes on. While they communicate the same proposition, these explicatures express speaker's meaning in a progressively more explicit manner. Therefore, explicitness is also a comparative concept. The degree of explicitness depends on the contribution of contextual inference: the more this contribution, the less explicit the explicature, and vice versa. By proposing the notions of explicature and implicature, relevance theory challenges the traditional dichotomous view. An utterance can be made more explicit, but there is no such thing as full explicitness.

Expanding on Grice's (1957) original rationale, Sperber and Wilson (1986/1995) proposed two types of intentions involved in ostensive communication, which they reformulated as follows (Sperber and Wilson 2015: 136):

(a) *Informative intention*: to make manifest or more manifest to the audience an array of propositions **I**

[20] Wharton (2009) identifies a problem of the notion of explicature in cases of non-truth-conditional meaning. According to relevance theory, explicatures are the expressed propositions, and they are recovered via linguistic decoding and inference. An utterance can communicate a basic-level explicature that determines the truth condition of the content, as well as a higher-level explicature that embeds the basic-level one under a description of propositional attitudes. However, this does not work for some interjections, such as when a speaker utters '*Yuk*! This mouthwash is foul' (Wharon 2009: 86). The disgusted feeling is expressed not toward the proposition in the sentence following the interjection but rather toward the mouthwash. In other words, the speaker does not form a high-level explicature as is predicted by relevance theory. Alternatively, the speaker may only utter 'Yuk!', in which case there is no basic-level explicature to embed. 'Yuk!' does not encode a concept, nor anything truth-conditional. Instead, it encodes procedural information that facilitates the retrieval of propositional attitudes (see also Wharton and de Saussure 2023).

(b) *Communicative intention*: to make it mutually manifest to audience and communicator that the communicator has this informative intention

Mutual manifestness further leads to a continuum of determinacy in terms of speaker's meaning, which, when combined with the showing-meaning continuum, form a square where the speaker's overtly intended cognitive effects may be positioned (Sperber and Wilson 2015).

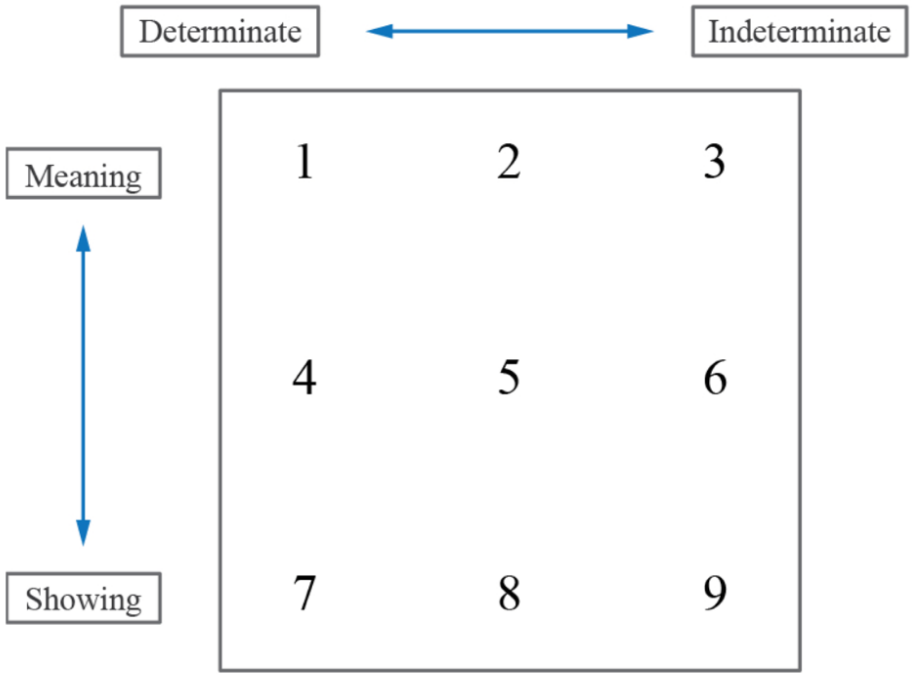

Figure 2: The showing-meaning and determinate-indeterminate continua
Source: Sperber and Wilson (2015: 123)

The vertical axis corresponds to the first two clauses of Grice's definition of speaker's meaning but rejects the third clause. Revealing a bandaged leg in response to a squash invitation is neither pure showing nor pure meaning. The addressee is shown a piece of evidence, but instead of believing that 'the leg is bandaged', the addressee now takes this behaviour as an answer to his invitation. Namely, he believes that it means$_{NN}$ that playing squash may be impossible or at least undesirable. In fact, unless the shown evidence for the intended conclusion is absolutely decisive, what is taken as 'showing that' by Grice should instead be taken as 'meaning that' (Sperber and Wilson 2015).

The horizontal axis shows the nature of the content being presented: whether it is a proposition, can be paraphrased as a proposition, or is too vague to be paraphrased at all. The closer to the determinate end, the more likely that what is communicated can be paraphrased as a proposition. The conversation in (21) is an example where Ben's intended meaning is relatively determinate. However, vague and non-verbal communications involve a wide range of weakly manifest assumptions being communicated, making it difficult to identify a single intended proposition. Consider a slightly different scenario from the one shown in (21). Instead of providing an utterance, Ben responds to Anna's question by shrugging his shoulders. This body language provides some clues for recognising his communicative intentions: that he does not like the film, he does not want to give a comment, or that he thinks the film is okay but does not know how to express his opinions, etc. Although Anna might still draw a conclusion as in (21a), the degree of determinacy is much lower than what happens in (21). More likely, Anna will have several interpretations of Ben's response, including the one truly intended by Ben. Anna has no way of knowing exactly what that is unless further explanation is provided. Yet the communication can still be seen as successful because the indirect evidence shows Anna how Ben feels without explicitly describing that feeling.

Loose uses of language such as metaphor also convey speaker's meaning closer to the indeterminate end, although they may still differ from one another in terms of determinacy (Sperber and Wilson 2015). Suppose Anna is speaking to Ben about someone she met at a party last night and she says:

(22) Claire is such a block of ice.

What Anna has communicated might be that Claire is unapproachable, that she does not laugh, that it is not enjoyable to spend time around her, that Ben would probably fail if he wanted to get to know Claire, or that she does not think Claire is a good choice if Ben was considering a date, and so on. None of the above assumptions are built on direct evidence. Anna does not directly say what characteristics Claire has nor does she explicitly express her opinions about Claire. Therefore, this metaphor is a case of meaning instead of showing. Meanwhile, this metaphor efficiently 'packs' complex contents into relatively short expressions (Camp 2006a). Anna's intended meaning is not only vague but also indeterminate, because it is difficult to paraphrase her intended cognitive effects as a proposition at all. Instead, there is an array of weakly communicated propositions. Wilson and Carston (2019) suggest that the speaker may

reveal perceptual, emotional, sensorimotor, linguistic and conceptual information about her mental states by producing an ostensive act, such as a departure from encoded denotations as in a metaphor. This information enables the hearer to infer a rich set of weak implicatures, among which the more salient ones are more likely to be mentally represented, therefore contributing to the general interpretation of speaker's intention. In other words, however vague the impressions and feelings might be, they can still be fully accounted for by an inferential theory.[21]

3.3 Lexical pragmatics and metaphor

3.3.1 The relevance-theoretic approach to lexical pragmatics

Relevance theory assumes that humans possess the ability to perform demonstrative inference on assumptions using a set of deductive rules. The propositional forms of these assumptions further consist of smaller constituents that are structurally arranged so that the deductive rules can apply to. Sperber and Wilson (1986/1995: 86) call such smaller constituents *concept*, 'psychological objects considered at a fairly abstract level', and a set of concepts can be arranged structurally to form an assumption. According to the account relevance theory adopts, each concept has a label that points to an address in memory, 'a heading under which various types of information can be stored and retrieved' (ibid.: 86). This label can also appear to be part of a logical form of an utterance, so processing the label in the logical form will grant access to the associated information stored in memory.

Sperber and Wilson (1986/1995) categorise the various kinds of information stored at a certain conceptual address into three main types: logical, encyclopaedic, and lexical entries. The logical entry of a certain concept consists of a set of deductive rules that may apply to the logical form where the concept appears. For example, the logical entry of the concept AND contains some version of the *and*-elimination rule in standard logics. The encyclopaedic entry consists of information about the objects, events and/or properties the concept refers to. For example, the encyclopaedic entry of the concept CAT stores all the information an individual

[21] It should be noted that this view on metaphor is sometimes referred to as the 'orthodox relevance-theoretic account' (Carston 2018: 202). Research in recent years (Golding 2016; Kolaiti 2019; Wharton and de Saussure 2023; Wharton and Strey 2019) has started to explore alternative accounts for non-propositional content involved in verbal and non-verbal communication. The issue of non-propositionality will be further addressed in Chapters Four and Five.

may entertain about the animal cat, including that it is a kind of mammal, it has a claws, it meows, it is commonly taken as a pet, etc. The lexical entry contains information about the word or phrase in natural language that corresponds to and expresses the concept, such as the word <cat> for the concept CAT.

For the purpose of the discussion in this section, we will first address the distinction between what is linguistically encoded by a word and what is communicated by using that word in a certain context. Relevance theory assumes that an ordinary-language word encodes a concept, and the 'meaning' of that word is provided by the associated concept. That is to say, the word <cat> encodes the concept CAT and means CAT. However, it is very common in verbal communication that the linguistically encoded meaning will be adjusted or modulated to refer to a specific set of properties of the concept. That is to say, there is no presumption of literalness: a fine-tuning of the conceptual content of an utterance using contextual information is ubiquitous in pragmatic interpretation, even for expressions that are usually regarded as 'literal'. This interpretive mechanism can be applied to a much wider range of cases than is traditionally acknowledged (Carston 2002, 2010b; Sperber and Wilson 2008; Wilson and Carston 2006, 2007).[22] Evidence comes from recent discoveries of the human brain and human cognition that humans have – and can have – much more concepts than words or expressions in any natural language, and some constituents of thoughts cannot be encoded into linguistic expressions at all. By referring to such findings, relevance theory argues that the majority of concepts, when used in instances of verbal communication, requires adjustment in specific contexts. The task of the hearer, in order to understand what the speaker means, is to bridge this gap by reasoning, or inference. Instead of classifying language uses into two distinctive groups, it is more plausible to treat them as falling on a continuum, with various degrees of deviation from what is conventionally seen as the 'literal meaning'.

Relevance theory identifies two major types of lexical pragmatic processes: *narrowing* and *broadening*. There are a continuum of cases of broadening, including lexical broadening,

[22] The French philosopher François Recanati (2004) holds a similar view that the adjustment of conventional meanings of words is always required no matter how explicit the utterance is. However, there have been some new explorations in terms of whether such a distinction is really redundant. For example, Allott and Textor (2022) suggest that a word is used literally with the intention to conform to an established tradition as to how the word is usually used. The distinction is necessary, but it should be drawn in terms of the user's communicative intention, namely, whether they intend to continue the 'tradition' of using that word. The metaphorical meaning is therefore the result of not conforming to such tradition. This 'Non-Conformity View of Non-Literal Use' (Allott and Textor 2022: 18) is argued to be compatible with relevance theory's lexical pragmatics.

including concept broadening (such as approximations), category extension (such as using the salient brand name 'Hoover' to refer to a broader category 'vacuum cleaner'), hyperboles, and metaphor (Carston 2010; Sperber and Wilson 2008; Wilson 2003; Wilson and Carston 2007).[23] These variations only differ in the extent to which a communicated meaning departs from the linguistically encoded meaning, and in the ways our mind responds to such a departure. This unified approach marks a radical departure of relevance theory from other post-Gricean theories. According to this unified approach, metaphor can be accounted for using the same inferential mechanism for other cases of concept adjustment. Metaphor can indeed make utterance impressive, and its cultural significance is also well recognised, but there is nothing intrinsically special about metaphor that requires a full-fledged theory to underlie thoughts (Sperber and Wilson 1986/1995, 2008).

Lexical narrowing is the process where the expressed meaning by the speaker is more specific than the encoded meaning, highlighting only part of the linguistic denotation. The following sentences contains examples of lexical narrowing:

(23) Look at that skyline!

(24) I like fish. [when uttered in a restaurant]

The word <skyline> in (23) can be used to refer to any horizon, but in modern English, its meaning is more likely to be narrowed to mean the kind of skyline created by buildings and other man-made structures in a city. Narrowing like this is a natural phenomenon in the evolution of language usage, when a general meaning is applied to a less general class of items or concepts, resulting in a shift or specialisation of word meaning. In other cases, the narrowing is not the result of language evolution but an *ad hoc* interpretation. The hearer of the utterance in (24) will have no difficulty understanding that the speaker means she wants a certain kind of fish on the menu that has been prepared in a culinary manner, not any alive fish out of the pond. Successful recovery of this subset of meaning requires a judgement based on both contextual information and a recognition of the speaker's communicative intention.

[23] However, metaphor can involve both broadening and narrowing. For example, in 'Jacob is a donkey', the expressed meaning of 'donkey' is broadened to include 'slow' and 'plodding', which fall further outside the encoded meaning; but it is also narrowed to only a specific set of properties associated with donkey.

Lexical broadening is the process where the expressed meaning is more general than the encoded meaning. Let us consider the following sentences:

(25) I will see you at eight tonight.
(26) It's freezing outside.

These two sentences can be seen as examples of approximation. If the speaker of (25) is talking to her friend about a dinner arrangement, then by uttering 'eight' she intends to mean around eight o'clock (i.e., anytime between 7:50 to 8:10 is acceptable). But this adjusted meaning is highly context-dependent. If the speaker is meeting her friend to catch a train that departs at 8:06, then her intended meaning will have to be restrained to 'around eight o'clock but no later than 8:05, meaning that 8:10 will not be acceptable. In the utterance in (26), the temperature outside may be close to, but not exactly, the freezing point. Like lexical narrowing, approximation have various degrees in individual communicative contexts. There is not a single rule as to exactly how many minutes before or after eight can be considered as 'around eight', or which temperature can be called 'freezing', as long as they render an appropriate and satisfactory interpretation of the sentence. Alternatively, the utterance in (26) can also be taken as a hyperbole, meaning that the temperature is much lower than what can be considered comfortable. Compared to approximation, a hyperbole says something more about the speaker's attitude. For example, she is reluctant to go outside, she does not enjoy this temperature, or she does not think it is good weather for a swim in the sea.

In category extension, the departure from linguistically encoded meaning is more radical, and the expanded meaning may denote only a small set of typical properties of the original. For example:

(27) Please google this.
(28) We have not yet met our Waterloo, Watson, but this is our Marengo. (Doyle 1905/2007: 336)
(29) 冰山美人 ('Iceberg beauty', a beautiful woman who is reserved or unapproachable)

In the utterance in (27), the company name Google has been expanded to another grammatical category, meaning the action of performing an Internet search.[24] The utterance in (28) is a more general use. It cannot be taken as an approximation because there are major differences between the current situation and the mentioned two historical events (the Battle of Marengo, which helped to secure Napoleon's power, and the Battle of Waterloo, which is Napoleon's humiliating final defeat). Instead, this statement highlights some characteristics from categories where Waterloo and Marengo are salient examples.[25] In other words, Holmes perceives their situation as something that Waterloo and Marengo represent. When the encyclopaedic knowledge of these two battles is taken into consideration, this statement can evoke specific implicatures and possibly other non-propositional effects.

A similar departure from linguistic denotation can be observed in the phrase in (29), a relatively commonly used metaphor in Mandarin Chinese. The meaning of 'iceberg' is different from its linguistically encoded content, yet there is not an 'almost but not quite' sense here, as is the case with approximation. Instead, this phrase involves an expansion of the category of ICEBERG, including both the large piece of ice floating on the sea and people who possess some encyclopaedic properties associated with ICEBERG*. Some properties being exploited here are not directly derived from an actual iceberg, so the relation between these properties and ICEBERG will have to be achieved in other ways. This is an example of the 'emergent property' issue found in many metaphors (Sperber and Wilson 2008; Wilson and Carston 2006), which I will come back to later in this chapter.

The cases shown above all involve the construction of what is known as an *ad hoc* concept – one that is context-specific and often temporary. Further discussion of this notion will be presented in the next section. It is possible that due to frequent repetition, a previously *ad hoc* concept may be given a stabilised meaning and therefore becomes lexicalised within a speech community (e.g., SKYLINE* and WATERLOO*). Nonetheless, a fine-tuning process is needed in

[24] The pragmatically broadened words may be chosen due to various reasons. The phrase 'to google' has an equivalent in Mandarin Chinese, 'to baidu', derived from the Chinese search engine Baidu (provided by the technology company Baidu, Inc.). Its popularity has increased particularly since Google's withdrawal from the Chinese market in 2010. However, 'to baidu' already existed before Google's withdrawal, and it is also part of the advertising slogan of the search engine. Both 'to google' and 'to baidu' are equally comprehensible in China. It would be interesting to explore how commercial competitions and advertising activities influence category extension and lexical pragmatics in general.

[25] The phrase 'to meet one's Waterloo' is now almost lexicalised as saying one encounters an ultimate obstacle and is likely to be defeated by it. By contrast, the metaphorical use of the Battle of Marengo is less commonly observed, and therefore requires more encyclopaedic knowledge to recover its expressed meaning.

comprehending almost every expression we encounter every day. This is very helpful for metaphor study, because it unifies the mechanisms for understanding metaphorical expressions and other types of language use (Wilson and Carston 2007). A basic claim proposed by relevance theory in terms of metaphors is that the same processing mechanism for everyday language can be used to explain how metaphorical meanings are generated.

3.3.2 A deflationary account of metaphor

One of the critiques of the Gricean view on metaphor is that there is no specific differentiation between types of figurative language. We do not know whether and in what way a metaphor is different from a hyperbole, nor how the hearer interprets one utterance as metaphorical and another as hyperbolic. The notion of 'flouting' a maxim also needs to be defined and fleshed out. Figurative language may depart from truthfulness without being an outright lie, and there is no intention from the speaker deceive the hearer. The utterance 'This room is empty' does not mean that the room contains absolutely nothing (nor can it), hence the speaker does not overtly violate the maxim of truthfulness to deceive the audience as in the case of lying. The room is empty$_1$, in the sense that no one is in it, can be understood without much difficulty. This interpretation is adopted because it is the most relevant one in the current context. In other contexts, the same utterance can convey several other meanings: that the room has no furniture (empty$_2$), that the room is not fully furnished (empty$_3$), or that there are fewer people in the room than the speaker expects (empty$_4$), and so on.

In many cases, it is cognitive effortful and unnecessary for the hearer to first give a strictly literal interpretation of the speaker's thoughts, as in the following utterances, which communicate the same proposition:

(30) Let's meet 10 metres away from the revolving door of the main entrance of Checkland Building.

(31) Let's meet in front of Checkland Building.

The speaker can either be strictly truthful as in the utterance in (30) or less truthful as in (31). Suppose both interlocutors are familiar with Checkland Building, the concept IN FRONT OF CHECKLAND BUILDING is narrowed to indicate a general location. The hearer has no need to know exactly where the planned meeting point is for him to draw the same implicated

conclusion. In other words, the vague but cognitively economic utterance in (31) is preferable to the relatively literal but cognitively demanding one in (30).

Relevance theory suggests that metaphor is one of the 'alternative routes to achieving optimal relevance' (Wilson and Sperber 2004: 619). The hearer's goal in interpreting a metaphor is the same as that in other communicative scenarios, which is to satisfy the expectation of relevance through mutual adjustment of conceptual content and generating positive cognitive effects. This is to say that metaphor, hyperbole and approximation are all understood through an inferential procedure as other uses of language. They are cases of 'loose talk' on a continuum with strictly 'literal' expressions positioned at one end and more 'poetic' expressions on the other. Metaphor arises naturally in general communication, and therefore doesn't necessarily require a different set of processing mechanisms.

Instead of resorting to the notoriously vague notion of 'resemblance', Sperber and Wilson (1986/1995) present two ways by which a metaphor achieves its relevance. It can make manifest one or two strong and highly accessible implicatures, or it can make manifest a wider range of relatively weak implicatures. Consider the following two examples:

(32) I'm not going down that rabbit hole.

(33) […] I would like to meet you all
in Heaven. But there's a litany of dreams that happens
somewhere in the middle. (Siken 2005)

The utterance in (32) is an example of conventionalised or lexicalised metaphor that most English speakers are familiar with. The concept RABBIT HOLE instantly gives access to the hearer's encyclopaedic knowledge associated with it, as well as a highly available assumption ('RABBIT HOLE is a reference to something engrossing and time-consuming.' [26]). This assumption then yields a relevant implicated conclusion that the speaker is not going to pursue a time-consuming topic.

[26] The metaphorical meaning of 'rabbit hole' as is adopted today first appeared in Lewis Carroll's novel *Alice's Adventures in Wonderland*. Traditionally, 'rabbit hole' is a reference to something that transport a person to a wonderful and surreal state. As it has gained popularity on the Internet, the metaphorical meaning has also changed accordingly.

The metaphorical meaning of the excerpt in (33) is vaguer and less determinate (in the sense discussed in Sperber and Wilson (2015)). There is not a single strongly communicated implicature, due to the creative use of A LITANY OF DREAMS. The addressee therefore takes a greater responsibility in constructing an interpretation by entertaining a series of related and weak assumptions about the following issues:

(a) Having a conceptual understanding of what a dream is
(b) Understanding the action of having a series of dreams
(c) Experiencing a certain feeling or emotion related to the action of dreaming or a particular dream
(d) Understanding dreams as a certain way of living
(e) Understanding what it feels like to live in a dream-like state

Since the speaker's intention is largely indeterminate, individual addressees may entertain a variety of the assumptions they find relevant, not just from the list above. More interestingly, the addressee may go beyond the current context to exploit a wider scope of encyclopaedic knowledge and experience, leading to even more weakly communicated implicatures (Sperber and Wilson 1986/1995). Following this argument, the most creative metaphors are those that are not merely playing with words but allowing the addressee to use them as a literary playground to revisit previous experiences or to explore new ones. In this case, a plausible metaphorical meaning is not the only thing the speaker wants to deliver. She may also be interested in conveying a kind of feeling, which supplements the conceptual content as the result of inference.

A particular style of writing, as a means of communication, can communicate more than what is linguistically encoded. This is arguably the 'default' for literary contexts where there is often something that cannot be fully paraphrased or paraphrased at all. An adequate paraphrase should both state all (and only) the content of the speaker's locutionary act, and state it in a literal and explicit manner (Camp 2006a). According to this definition, metaphors, especially creative ones, cannot be fully paraphrased either literally or explicitly. The addressee exploits some information that the speaker is only implying or causing him to entertain. I. A. Richards asked whether metaphor should be something more than a 'happy extra trick with words' (1936/1965: 90), commenting that the chief difficulty is to understand how the senses of words are shifted. Even though a poetic thought is often expressed in words in the literary context,

the effects those words can achieve are not always characterised in propositional terms. In relevance theory, this type of peculiar effects – usually referred to as poetic effects – satisfy the hearer's expectation of relevance by making manifest a wide range of weak implicatures (Pilkington 2000; Sperber and Wilson 1986/1995). They are usually what makes particular uses of expressions such as similes, metaphors, metonymies and hyperboles 'special'.

According to relevance theory, a basic presumption of any communication is the maximisation of relevance, not the retrieval of a literal truth (Sperber and Wilson 1986/1995). Comprehending a creative metaphor involves making connections between logical inferences and encyclopaedic knowledge to obtain optimal relevance, and not just to identify a metaphorical meaning from literal falsity. Furthermore, the wider and weaker an array of communicated implicatures are, the more creative the metaphor is, the more likely this metaphor will have poetic effects (Pilkington 2000; Sperber and Wilson 1986/1995). Processing this metaphor generally requires more cognitive effort, but the contextual effects are also increased, hence optimal relevance is still guaranteed.

Let us consider the following sentence which can be considered creative or poetic for several reasons:

(34) [W]e've been
here for so long that we've carved
a ghost out of our waiting. (Olade 2017: 9)

First, no single strong assumption is explicitly expressed, and the speaker's meaning is largely indeterminate. Second, there is no specific clue as to what aspects of the encyclopaedic knowledge should be exploited, apart from the fact that they come from the entries CARVE, GHOST and WAITING. And finally, even though we can paraphrase what the poet has in mind as a proposition, doing so would require a substantially large number of words. That is to say, a poetic metaphor seems to be a cognitively efficient vehicle to 'gift-wrap' one's thoughts. The contextual assumptions of the excerpt in (34) may include:

(34a) The two people have been in a relationship for a long time.
(34b) This relationship is chaotic and destructive.
(34c) The *status quo* is their own doing.

(34d) The speaker regrets having such a relationship.

(34e) The speaker is exhausted.

Even with assumptions (34a-e), it is still difficult – if indeed it is at all possible – to yield a strong contextual implication. Sperber and Wilson (1986/1995: 224) conclude that cases like this:

> do not add entirely new assumptions which are strongly manifest in this environment. Instead, they marginally increase the manifestness of a great many weakly manifest assumptions. In other words, poetic effects create common impressions rather than common knowledge. […] [I]f you look at these affective effects through the microscope of relevance theory, you see a wide array of minute cognitive effects.

But there is something still more difficult to be accounted for by implicatures. The particular use of the word <ghost> may involve the participation of feelings, sensations, and emotions from the addressee, which may appear to be relevant to him through modifications not just on his conceptual system but also on the experiential heuristics. The addressee may very well have certain assumptions or beliefs about ghost, and these propositional attitudes may be tied in with, for example, a feeling of instability or emptiness, a sensation of things being weak or without temperature, the emotion of boredom or even a neutral state such as numb or indifference, which is the absence of emotion. Of course, by experiential heuristics I do not mean that the addressee would entertain a specific set of non-propositional element every time he activates the mental representation of ghost. Individuals will have different feelings, sensations, and emotions associated with their previous experience or personal memories that involves the concept of GHOST. Resorting to weak implicatures explains only the description of an experience but not the experience itself, the latter also being communicated by the metaphor. In other words, by processing this metaphor the addressee obtains certain knowledge and beliefs about the type of feelings/sensations/emotions the speaker intends him to obtain, he also feels the impact of those non-propositional elements himself. This second part is not fully covered by the relevance-theoretic account. At most, it is explained in terms of the propositional cognitive effects. As we will see in later chapters, some researchers within relevance theory have suggested many interesting and promising directions (de Saussure and Wharton 2020; Kolaiti 2019; Wharton and de Saussure 2023). This thesis aims to follow these recent studies and seeks to explore the previously underestimated role of non-propositionality.

3.4 The *ad hoc* concept construal

3.4.1 Categorisation and ad hoc *concepts*

Let us compare an earlier example (repeated below as (35)) and another one where the same sentence is uttered in a different context:

(35) I like fish. [when uttered in a restaurant]
(36) I like fish. [when uttered in a pet shop]

The word <fish> in both sentences illustrates lexical narrowing, because the speaker means not just any fish, but either a particular fish prepared in a particular way, or one that can be considered as a pet. In the utterance in (35), she also means (quite possibly) only part of the fish but not the entire one, excluding the head and guts. The concepts FISH* and FISH** in these two sentences have different denotations, and they are modified based on FISH according to their relevance to specific communicative contexts. Relevance theory argues that such modification is very common in communication, and almost all concepts used would involve some degrees of lexical modulation. Metaphors involve the construction of such flexible, occasion-specific, and possibly temporary *ad hoc* concepts as well, so processing metaphors does not require a unique mechanism.

The term '*ad hoc* concept' has its origin in the psychological study of categories, which can be traced back to Aristotle and his attempt to enumerate entities in the world into general kinds. During the development of cognitive science, there was a shift from the Aristotelean assumptions to prototype theory (Lakoff 1987; Rosch 1973, 1975). Prototype theory rejects the classical model of concepts, according to which complex concepts are definitions constructed by applying innate processing rules (e.g., conjunction, negation, generalisation) to simple concepts, and categorisation is the process of checking whether an object fits the definition of a category.[27] Prototype theory concludes that concepts do not have the necessary and sufficient

[27] Fodor (1975) also rejects the classical model but for very different reasons. While prototype theorists focus on categorisation, Fodor focuses on word meaning. According to Fodor, word meanings are concepts, and most concepts are simple and unanalysable, leading to the conclusion that there are many more innate concepts than the empiricists suggest. In fact, prototype theory provides an alternative approach to concepts with the goal to prove that Fodor's radical nativist view is unsound. I will discuss the differences between prototype theory, the Fodorian view, and the grounded view on concepts in Chapter Seven.

conditions which make definitions, but an internal structure determined by typical features. Many categories are internally structured into 'natural prototypes' (Rosch 1973: 330), which are members more perceptually salient in their domains.

As a result, natural prototypes tend to be learnt first, and take a central position around which other variation in a category is defined. In other words, natural prototypes are likely to be considered as the most typical and recognisable examples. Other members in that category are structured based on their similarities with the prototype. Natural prototypes also act as 'cognitive reference points' (Rosch 1975: 532) that form the basis for inferences. Only less-prototypical stimuli can be seen 'in relation to' the reference stimulus, but not the other way around. This means that concepts within one category is not of equivalent membership, contra to Fodor's atomic view (1975). Instead, concepts are structured in relation to the most typical member(s), or the reference point(s). Cognitive Linguists such as Lakoff (1987) generally endorse this view and claim that prototype effects can be observed in language as well as in the conceptual system. The existence of natural prototypes is seen as providing theoretical support for conceptual metaphor and the operation of image-schema, which are at the core of the Cognitive-Linguistic approach.

Prototype theory has faced many challenges since its proposal. One major criticism concerns the productivity of concepts and is provided by Fodor and Lepore (1996). A general claim made by the representational theories of mind is that concepts are mental representations, and they are productive. The reason is that mental representations are compositional. In theory, we can form an infinite number of mental representations by combining existing or primitive ones. Therefore, if concepts are mental representations, then they are compositional as well. Prototypes, however, are not compositional. Fodor and Lepore use the relatively complex concept PET FISH as an example. A goldfish is neither a satisfactory prototype of FISH nor one of PET; however, it can serve as a prototype of PET FISH. The combination of the prototypes of both FISH (e.g., trout) and PET (e.g., cat) do not lead to the prototype of PET FISH. Either PET FISH is not a concept, or identifying constituent prototypes does not account for producing a concept. A possible answer is that prototypes work like idioms, whose interpretation can be overridden by convention over what semantic composition predicts (Fodor and Lepore 1996). The reason why goldfish is a prototypical PET FISH is not the result of compositionality, but because of the fact that people usually do so overrides the semantic inference that PET FISH = PET + FISH. Therefore, while prototype theory may explain categorisation better than definition in the

classical model (yet still, it remains ambiguous to many people whether TOMATO is a member of FRUIT or VEGETABLE), it does not explain why concepts can be productive.

Another challenge concerns the missing prototypes (Fodor 1981; see also Laurence and Margolis 1999). We can have infinitely many mental representations that are neither universal nor systematic. They are not associated with typicality, and therefore may not have a prototype at all. For example, there may be a prototype for the concepts WRITER and FEMALE WRITER, but there may not be a prototype for the phrasal concept FEMALE WRITER WHO HAS WRITTEN ABOUT MARS EXPLORATION OVER THE PAST DECADE. It is impossible and unnecessary to structure a reference point in categories like this. Yet we can easily understand what the phrasal concept means without the presence of a prototype. This shows that a prototype is distinct from linguistically encoded meaning, even though the former contributes to exploiting the latter. We may know perfectly what PET FISH means but have no idea which species is prototypical for PET FISH, nor does it matter. Our choice of pet fish is, as Fodor and Lepore (1996: 265) put it, 'not a fact about concepts or language'.

It seems that even if prototypes exist, they do not say much about how words acquire their meaning compared to alternatives such as that offered by Fodor. Meanwhile, so-called prototypical effects need to be accounted for. One way to approach this problem is to see concepts as providing access to two types of information: the semantic information made accessible by inference (e.g., from BACHELOR to MAN), and the encyclopaedic information that can be used for categorisation. This latter set of information does not need to be bound to the semantic or logical relations (e.g., THIRTEEN may be *associated with* but does not *mean* BACK LUCK). In practice, there is no strict rules as to how much of the encyclopaedic knowledge will be accessed by a certain individual when a word is used. This further leads to the conclusion that there should be *ad hoc* categories, which are representations not readily established in memory but constructed on the spot to achieve an immediate and specific goal (Barsalou 1983, 1987).

Barsalou's research suggests that there is an internal hierarchy among members of a category, which is in line with views from prototype theorists. However, he argues that typicality rankings or *graded structures* (Barsalou 1987) cannot be explained by prototypes stored in memory. As cognitive science and evolutionary psychology have shown, the human mind has a finite storage capacity. It is unlikely that we can store enough prototypes to account for every

possible context we may encounter. The missing prototype problem is a straightforward illustration. The human mind also has finite processing resources, and it follows from this that we can only process a limited set of information at a time. It is therefore hypothesised that to use a concept on a certain occasion means to access a set of information available to the individual at that time to construct an *ad hoc* concept (Barsalou 1982). According to Barsalou (1982), this set of information can be either context-independent (CI) properties, those activated by the word regardless of occasions (e.g., *unpleasant smell* for <skunk>), or context-dependent (CD) properties, those activated only in a relevant context where the word appears (e.g., *float* for <basketball>). CI properties form the core meaning of a word that can be used in identifying the encoded concept, whereas CD properties account for encoding variability. In other words, CI properties are relatively stable and are linked with the semantic/logical information of the word, while CD properties are largely unstable and flexible, whose selection and activation are influenced by individual representations of typicality.

The notion of an *ad hoc* category/concept is compatible with some arguments of lexical pragmatics. Indeed, the term is borrowed into relevance theory; and with some modifications and elaboration, it plays an integral role in the unified approach to verbal communication (Carston 2002, 2010b; Wilson and Carston 2006). In Barsalou's hypothesis, the set of properties being accessed is determined by the context and the accessibility of those properties. More specifically, the activated CI properties will serve as a context for activating corresponding CD properties (Barsalou 1982). Such context-specific information does not explain the semantic meaning of a metaphor, but it can be taken as encyclopaedic knowledge to which our mind may respond in a certain manner. Accessibility, however, has not been further discussed in Barsalou's later works beyond the claim that it has much to do with relevance and goal.

3.4.2 Ad hoc *concepts in metaphor*

Relevance theory takes a deflationary approach to metaphor, arguing that metaphorical processing does not require a special mechanism, and that understanding metaphorical meaning is about understanding the speaker's communicative intention by using that metaphor. Lexical modulation can be observed in metaphor as well when the meaning communicated by using a certain expression is almost always different from the strictly encoded meaning. The metaphorical reading takes the encoded meaning as its starting point, and undergoes

appropriate lexical pragmatic processes to generate positive cognitive effects that satisfy the addressee's expectation of relevance. The result of this modulation is an occasion-specific, and often temporary *ad hoc* concept, which plays an important role in understanding the intended import of the metaphor.[28]

To further develop the view presented in Sperber and Wilson (1986/1995), which takes metaphor as a case of 'loose use' of language, later research argues that the metaphorically used concept is pragmatically adjusted to create a narrower (or sometimes broader) and context-specific sense, which is what the speaker is explicitly communicating (Carston 2002, 2010b; Sperber and Wilson 2008). Echoing the notion of *ad hoc* categories in psychology, *ad hoc* concepts in relevance theory represent and highlight part of the properties the original concepts denote. They are flexible, relevance-driven, and possibly include features outside of the denotation of the lexicalised concepts. The construction of an *ad hoc* concept provides a context-specific meaning, which is an integral part of the explicature. Consider this line from a Classical Chinese poem:

(37) The mountains are green, and the flowers are about to blaze.
山青花欲燃
(Du Fu, 'Quatrain'. *Complete Tang Poems*, vol. 228)

This example would satisfy the definition of metaphor in the Aristotelian tradition.[29] The poet expresses an explicature that the flowers are about to BLAZE*, and by saying this he communicates an implicature such as that (the colours of) the flowers are FLAMBOYANT*, or that there are lots of blooming flowers SPREAD* over the mountain. These properties are recovered by accessing the encyclopaedic knowledge of the flame, which is pragmatically selected and adjusted according to the communicative context to form an *ad hoc* concept BLAZE*. This context-specific concept does not include other properties of the flame such as *giving off heat* or *being dangerous to get too close to*, because they are inconsistent with the addressee's search for relevance. In fact, most of the properties associated with the

[28] This term refers to is 'the overtly intended cognitive effect of a communicative act' (Sperber and Wilson 2015: 122). The intended import is discussed in terms of two dimensions: how it is communicated (i.e., the showing-meaning continuum), and whether it can be paraphrased as a proposition (i.e., the determinate-indeterminate continuum).

[29] Metaphor as defined by the Chinese tradition, especially in Classical Period, is slightly different from that used in most of the 'Western' works. Some examples, while considered to be metaphor in Chinese, are more likely to be seen as metonymy, juxtaposition, or metaphor-like.

linguistically encoded meaning of BLAZE are not involved the processing of the utterance in (37) at all. The addressee is not searching for anything true about the blaze. It is the implication of BLAZE* that matters. What we have here is a rapid, local, online concept construction similar to that in general verbal communication.

Previous approaches that endorse a distinction between literal and metaphorical meaning often struggle to explain why it is not always possible to provide a literal paraphrase of metaphors, especially in the cases of more creative metaphors. The Cognitive-Linguistic view faces the problem that not all metaphors can be matched onto an already established cross-domain mapping. The *ad hoc* concept construal bypasses this problem by forming a context-targeted concept that can be one-off (as in the above Chinese example) or persistent (as in 'Richard is a gorilla' meaning Richard is rude and prone to violence, which are derived from GORILLA* but have almost nothing to do with GORILLA). As the speaker's intended import in a metaphor is largely indeterminate, and a wider range of relevant assumptions are to be made mutually manifest, the metaphor is likely to give rise to more than one *ad hoc* concept. The hearer may select all the assumptions relevant to him on a certain occasion to render a plausible interpretation, taking a great responsibility in deciding what implicatures the metaphor conveys.

However, there is a risk of false or over-attribution to speaker's meaning, that is, what the addressee interprets may exceed the scope of what the speaker intends. Therefore, it is important to have some form of regulation if the communication is to be successful. I would like to suggest, and will discuss further in this thesis, that the participation of mental imagery can on the one hand encourage the entertainment of a wider range of mental representations, while on the other hand constrain the addressee's attention to focus on some specific aspects of the metaphor as the speaker intends him to do.

While the *ad hoc* concept BLAZE* seems to replace BLAZE, in some cases, the encoded meaning does not disappear after an *ad hoc* concept is generated (Carston 2010b). Instead, this meaning is maintained and helps understand what follows. Consider the following sentences:

(38) Every life is a piece of music. Like music, we are finite events, unique arrangements. Sometimes harmonious, sometimes dissonant. ('Fromage' (1.08). *Hannibal*, 2013)

The utterance in (38) is an example of what Carston (2010b) calls an extended metaphor. According to the view mentioned above, the word <music> in the first sentence triggers the construction of MUSIC*. So does what follows to construct FINITE EVENTS*, UNIQUE ARRANGEMENTS*, HARMONIOUS* and DISSONANT*. The problem is that a process like this seems too effortful. It is perhaps more efficient, so it appears, that at least some properties of MUSIC remain activated so that the following sentences can be understood in almost a literal way. That is, the encoded meaning of MUSIC is activated enough to trigger a literal interpretation that music is FINITE, UNIQUE, HARMONIOUS or DISSONANT. The understanding of the *ad hoc* meaning of these properties takes place within an over-arching metaphor of life in the first sentence. What happens in metaphors like that in (38) is the 'linger of the literal' (Carston 2010b: 305), which showcases two different routes in metaphor understanding. There is a fast, local, online meaning modulation that is responsible for the construction of MUSIC* at the beginning. Following that, there is a slower and global processing of the encoded meaning of 'music' to allow inferences about speaker's meaning. The second route is more likely to take place in extended metaphors and more creative use of language where the cognitive cost is high enough to demand a slower interpretive process.

The same issue has been discussed in Wilson (2018), but her hypothesis is that what lingers is not the literal meaning but, rather, the linguistic form. As far as relevance theory is concerned, there is no significant difference between the cognitive effort required to construct *ad hoc* concepts and that required to recover the 'literal meaning', because a mutual adjustment is most likely to be involved in verbal communication. What matters in many cases is not figuring out the precise semantic denotations of the utterance, but what implication(s) the speaker is communicating. The addressee will process the metaphor in (38) in a way that would grant him optimal relevance, without consciously distinguishing between literal interpretation and concept construction. In other words, almost every concept being processed *is* an *ad hoc* concept. It may be broader or narrower than the encoded meaning, in either case it makes accessible a cluster of implicatures relevant to the addressee. He is not only selecting the most relevant interpretation, but the most accessible interpretation as well. The words after <music> create a backward reference. They 'provide a tentative cue to ostension, which will encourage some readers to pay more attention to the exact wording of the text and search for further implications activated by the encoded meaning' (Wilson 2018: 195). In this manner, what lingers is not the exact literal meanings of MUSIC, but its linguistic form.

3.4.3 The issue of 'emergent properties'

In the previous chapter, I mentioned that the comprehension of metaphors such as 'Richard is a gorilla' involves what can be described as 'emergent properties', which may present as an inconsistency between what is metaphorically communicated and what is linguistically encoded. In relevance theory, emergent properties are a set of assumptions about the metaphorical vehicle concept that cannot be found in the encyclopaedic knowledge about that concept, at least not by direct inference and/or logical operations. Wilson and Carston (2006) raised awareness of this issue, noting its possible challenge to seeing metaphor as on a continuum with more 'literal' use. Their conclusion is that emergent properties do not require a special interpretive mechanism, and that the continuity view stands.

Let us return to an earlier example in this chapter (repeated below as (39)), which is seen as a conventionalised metaphor in Chinese. The literal translation and implicated meaning are provided in the brackets.

(39) 冰 山 美 人 (ICEBERG* beauty, a beautiful woman who is reserved or unapproachable[30])

The concept ICEBERG* is loosened to include people who are reserved and unapproachable. It is also narrowed to only include a subset of the properties of ICEBERG. The addressee needs to access encyclopaedic information about an iceberg, including that it is cold and hard/rigid. However, this is clearly not enough, because being reserved and unapproachable are not properties of an iceberg. Martinich (1984) suggests a trade on equivocation, where a property of one concept is used metaphorically to create an equivocal property in another. According to this view, the *ad hoc* concept ICEBERG* provides access to the encyclopaedic knowledge, among which some beliefs are mutually held by both interlocutors despite that they are literally false, and that both interlocutors know them to be false. Therefore, what concerns an addressee in the phrase in (39) is not the resemblance between a human and an iceberg, but what properties of an iceberg are commonly assumed to be potentially applicable to a human. Metaphor is not about common truths, but about common beliefs. The question that

[30] In practice, BEAUTY* is narrowed to only include beautiful women. This, however, is not an example of emergent property and will not be discussed in detail here.

immediately follows is how certain properties are considered valid while others are not, since all metaphors are at some point a novel use of language. Only *coldness* is retrieved from *iceberg* (which then becomes *coldness in a human way*) but not *huge in size*, or *larger under the surface than above it*. The retrieval of properties has to be guided by certain factors, but resemblance does not appear to be a good candidate.

Relevance theory takes it that emergent properties are inferred in the same way metaphorical meanings are recovered (Wilson and Carston 2006). They are selected in our search for optimal relevance and are more relevant to the audience than other properties in his search for a feasible interpretation. A category crossing, such as that in (39) exhibits a kind of 'necessary falsehoods, where a literal interpretation of the predicate is incompatible with a literal interpretation of the subject' (ibid.: 415-416). It is implausible to attribute the perceptual experience of low temperature to the connotation of 'iceberg'. Therefore, the addressee is not using his encyclopaedic knowledge directly made accessible by the decoding process. Instead, following the goal-oriented comprehension heuristic, he accesses basic perceptual experience of COLD such as RESERVED and UNAPPROACHABLE. He then metaphorically extends these senses to broader psychological implications of RESERVED* and UNAPPROACHABLE*. The associated properties are derived from a superordinate concept COLD*, which can be used to describe human personality and satisfy the expectation of relevance. The overall interpretation of the phrase in (39) might be presented as in (39a-c):

(39a) Explicatur e: ICEBERG* beauty

(39b) Contextual assumptions:

i. An ICEBERG* is COLD*.

ii. A COLD* entity is RESERVED* and UNAPPROACHABLE* (etc.).

(39c) Contextual implications: a beauty who is RESERVED* and UNAPPROACHABLE* (etc.)

On this account, the phrase in (39) is classified as a metaphor because the relevance of contextual implications depends on some properties an actual iceberg does not have. The search for relevance constrains the pragmatic adjustment that forms COLD*, which further contributes to the selection of properties of the concept ICEBERG*. These properties become central to the

interpretation process. They serve as contextual assumptions which yield relevant contextual implications such as those in (39c).

There is yet another kind of metaphor, in which there is no direct way the expected implicature can be recovered from encyclopaedic knowledge. For example:

(40) My surgeon is a butcher.

(41) 我已经差不多是条咸鱼了。(I've almost become a salted fish.)

While the statement in (40) may not be a falsehood – it is not impossible, though it is very unlikely, for a person to be both a surgeon and a butcher – the implicatures of incompetent and dangerous are hardly associated with either professional. When uttered by an office worker, the utterance in (41) means that she achieved nothing and does not want to work, which has little to do with the semantic denotation of 'salted fish'. Again, we can use *ad hoc* concepts to understand what might happen during the interpretation of two sentences.

According to the proposal in Wilson and Carston (2006), to process the statement in (40), the hearer instantly retrieves certain stereotypical assumptions about a butcher, including: (a) cutting meat in the manner appropriate to butchers; (b) selling meat as a business; (c) possessing specific skills in order to cut meat, and so forth. Among all these properties, (a) is most likely to be primed by the mention of surgeon, because being a surgeon involves cutting flesh during operations. The hearer then constructs an *ad hoc* concept BUTCHER* using (a), which then helps to construct an *ad hoc* concept SURGEON*, a person who operates on patients like a BUTCHER*. Such a surgeon is considered unprofessional and incompetent, which is a plausible interpretation of speaker's meaning. In this example, the emergent properties of a SURGEON* being unprofessional and incompetent are fully inferential, because they are not derived from the stored concept. The move from MEAT to FLESH is a deductive inference. The processing of the utterance in (41) may follow a similar path. The hearer constructs SALTED FISH*, a fish that is lifeless and cannot move by itself, primes it by the prior mention of the speaker herself, and then constructs I*, a person who lacks passion and motivation. In both examples, the hearer needs to adjust his cognitive environment according to decoded meaning, encyclopaedic information and communicative context, in order to recover the expressed meaning, thereby satisfying his expectations of relevance.

The relevance-theoretic account of emergent properties is built on inferences of propositions in association with encyclopaedic knowledge. While this thesis generally agrees with this view on the inferential nature of communication, it also considers whether emergent properties can be fully accounted for by an inferential process. It is often reported that metaphor understanding involves some form of non-propositional content such as images, feeling and emotions. Can non-propositional information contribute to the entertainment of emergent properties? For example, 'salted fish' in (41) may evoke the hearer's previous experience of eating preserved or salty food, or perhaps his mental states involving a salted fish. As he entertains this non-propositional dimension of his experience, the metaphor also conveys a feeling of unpleasantness or a slight grudge by the choice of words. Starting from a wide range of weak implicatures, how can we cross over to feelings and other non-propositional effects? This dynamics between the conceptual and the procedural will be the focus in the following chapters.

3.5 Summary

In this chapter, I introduced the main arguments behind the relevance theoretic analysis of cognition and verbal communication, and in particular, cases of 'loose talk' such as metaphor. As in other cases, the search for relevance in a metaphor also abides by the Cognitive and Communicative Principles of Relevance. The hearer is able to logically derive relevant and contextual implications of what is possibly intended by the speaker, based on an interaction between decoded meaning and his encyclopaedic knowledge about the metaphorical vehicle. The assumptions and implications exploited by the hearer may cover an area wider than what is intended, because the speaker's intention is usually vague and indeterminate in a metaphor. Furthermore, metaphors only highlight or make accessible a set of the properties associated with a certain concept that is relevant to the hearer at a given time. This means that understanding metaphor involves constructing flexible, context-specific, and sometimes one-off *ad hoc* concepts, which may or may not be derived from the original concepts.

Relevance theory provides a more convincing account for most of our communication than many of its predecessors, but there are still issues that need further examination. Sperber and Wilson (1986/1995) have commented that pragmatics tend to take for granted that communication is about expressing propositional meaning with a propositional attitude through various operations and to various degrees. They continued to remark that while it is

relatively easy to account for inference over propositions, no one has yet a clear idea about how inference might work over things like images, impressions or emotions. In the notes to the first edition, the authors admitted that 'there is no reason, however, why [encyclopaedic entries] should not contain – or give access to – "images" and whatever types of mental object can be used as sources of information in conceptual thinking' (ibid.: 286). That said, non-propositional effects are still seen as causes or consequences of an interpretation. They need to be included in a conceptual framework if they are to play any part in attributing to that interpretation.[31]

Recent years have witnessed more research interest in this direction. For example, Carston (2018) and Wilson and Carston (2019) re-examined the role mental imagery might play in metaphor understanding, but they nonetheless opted for an approach that is wholly based on the interactions between conceptual representations. Following previous discussions in philosophy and cognitive sciences, Carston (2018) argues that mental images, being described as 'quasi-perceptual' and highly idiosyncratic, is better seen as a by-product of linguistic and pragmatic process. They enter our comprehension in order to make more manifest certain propositions to the audience for the derivation of weakly communicated implications in their search for relevance. This thesis does not fully agree with this view; instead, it intends to show that mental imagery – and in fact, many other types of non-propositional effects – could play a more dynamic role in utterance processing. The ostensive-inferential procedure falls short on explaining the ubiquitous experience of such non-propositional effects, especially those arise in creative and poetic metaphors. The problem *ad hoc* concept construal encounters with emergent properties also shows the inadequacy of a fully propositional treatment of intuitive and relatively primitive sensory experience, which falls outside the scope of our conceptual system

The point is, in order to have a theory for human communication, we need to address both propositional and non-propositional aspects, because at least part of our experience of metaphor is about providing emotional or sensory feedback, which often lies beyond what the so-called higher-level cognitive processes can produce. A successful creative metaphor will enable us to utilise a combination of conceptual and procedural information, and possibly lead to something we cannot consciously control. With this theoretic background set, the next chapter discusses the primacy of propositions in research on cognition and communication,

[31] This comment comes from a 2011 presentation Deirdre Wilson made at St John's College, Oxford, for the Balzan Project, quoted in Wharton (2021).

and explores the prominence and relevance of non-propositional effects, which has long been underestimated or overlooked.

Chapter Four: Linguistic propositionality and non-propositionality

> There is a very good reason for anyone concerned with the role of inference in communication to assume that what is communicated is propositional: it is relatively easy to say what propositions are, and how inference might operate over propositions. No one has any clear idea how inference might operate over non-propositional objects: say, over images, impressions or emotions. Propositional contents and attitudes thus seem to provide the only relatively solid ground on which to base a partly or wholly inferential approach to communication. Too bad if much of what is communicated does not fit the propositional mould.
>
> Sperber and Wilson (1986/1995: 57)

4.1 Introduction

It is often assumed that utterances have their meaning rooted in their capacity to represent the world. Understanding the structure and logical relationship of linguistic expressions is therefore a focal point in understanding the beliefs and representations of objects and events in the world. The analytical tradition of the study of language sometimes known as the *Ideal Language Philosophy* (ILP) developed following the advances in logic and philosophy in mid-to-late twentieth century. Early proponents of ILP included Frege (1948), Russell (1905), Tarski (1944), and Wittgenstein (1921), and their arguments have influenced later linguistic research on the truth-conditional theories of meaning, as well as the speech-act theory and early pragmatics.

Frege (1948) proposed a treatment of words and phrases in terms of the 'senses' and 'referents' they determine. The sense contains 'the mode of presentation' (ibid.: 27) that is made explicit to us. This idea is shown by Frege's example that both the 'morning star' and the 'evening star' refer to Venus. Here it is possible for the same referent to have different senses, and the referent 'Venus' is where the two senses intersect. Furthermore, as long as the sense of a sentence is logically analysable, the sentence is meaningful even without a referent, as in the cases of words referring to non-existential objects such as 'unicorn'. Russell (1905) pointed out that some phrases could express a meaning, but without a denotation. For example, the sentence 'the King of France is bald' certainly has a meaning to it, but it is false because it denotes no denotation: There is no King of France. In this case we need to understand this sentence as a

complex with meaningful constituents. Logical relation therefore plays an important role in understanding both the meaning and the denotation.

Wittgenstein (1921/2021) developed Frege's and Russell's ideas and argued in *Tractatus* that language consists of complex propositions which are themselves built from meaningful, elementary propositions – 'The totality of propositions is the language' (§4.001). The power language has in describing the world comes from mirroring the logical form of propositions, which mirror facts (§4.121). Therefore, a sentence is meaningful only when it corresponds to the *status quo* in the world. Shifting focus from the definition of truth to semantics in general,

Tarski (1944) advocated as systematic a treatment of semantics as that being offered for syntax – by analysing both 'material adequacy' (ibid.: 343) and formal correctness of a sentence, that is, its correspondence to the state of affairs and its logical conjunction. He differentiated between the *object-language*, the target of analysis, and the higher-level *meta-language* used to conduct such analysis. The meta-language contains expressions of the object-language, and is largely determined by the conditions of the definition of truth, which is considered materially adequate and formally correct (Tarski 1944). This hierarchy of languages is entirely built upon the relations between propositions and individual expressions. Grasping the meaning of a linguistic expression is tantamount to grasping the conditions under which this expression can be considered 'true' in terms of material adequacy and formal correctness. Consequently, inference plays a central role in delivering a logically sound conclusion based on the premises given.

However, as I argued at the end of last chapter, a framework entirely based on inferences made to and from propositions is challenged by the non-propositional effects that are ubiquitous in everyday communication. And as the above quote from Sperber and Wilson (1986/1985) has acknowledged, such a framework cannot explain how feelings,[32] emotions, mental images, and other perceptual representations[33] can be communicated, nor does it address what roles they might play in cognition and communication in general. Affective science has provided some

[32] Following Frijda (1986), I differentiate feelings from emotions in this thesis as such: Feeling an emotion and having that emotion share the same structure of experience, but feeling does not denote action tendency. Feeling may also refer to being aware of how a situation is of one's concerns, as in the case of 'feeling of insecurity'.
[33] There is an ongoing debate about whether perceptual representations exist; and if they do, what their nature might be. In the current discussion, I am using this term to refer to representations that reflect perceptual states or the outputs of perceptual processing, hence they are non-propositional.

theoretical argumentations and empirical data on the ubiquity of emotion in daily communicative behaviours and its dynamic relation to cognition. Recent development in both relevance theory and the affective sciences have been trying to not just extend the scope of current theories but also to incorporate non-propositionality in a more systematic framework.

In the next section, I introduce the established 'Primacy of Propositions' which I claim exists in aspects of contemporary linguistic and cognitive research. I start with Grice's ground-breaking work on non-truth-conditional meaning and how it developed from speech-act semantics. I then discuss Fodor's modular model of the human mind, according to which the mind functions at different levels and stages when processing information received by peripheral sensory systems. This model is further developed by relevance theory which suggests that inference is global rather than local, and successful communication is not always guaranteed even when logical operations are observed.

These three areas of research, though disparate, all relate to the 'Primacy of Propositions'. For Grice (1975, 1989), non-truth-conditional meaning is part of 'what is implicated', indicating the performance of a particular, 'higher-level' speech act and is separated from 'what is said'. For Fodor (1975, 2008), the reason that thoughts can be expressed by sentences (utterances in relevance theory's terms) is that both possess syntactical properties through which logical operations can be performed. Relevance theory, in developing the Gricean and Fodorian views, has noted the limitation of propositions, but the original treatment is to take all those non-propositional contents as rising in the process of ostensive inference (Sperber and Wilson 1986/1985). By helping to increase the manifestness of a wide array of relevant propositions, non-propositional content can be accepted as weakly communicated implicatures (Carston 2018; Wilson and Carston 2019).

Section 4.3 turns to the issue of non-propositional content. As I will argue, we need to move beyond propositions if we want to explain all aspects of verbal communication, including those that a wholly propositional model cannot efficiently account for. Wharton et al. (2021) suggests that there are three major aspects of the so-called non-propositional effects: descriptively ineffable entities, impressions, and poetic effects. In this section, I focus on the first two aspects, while the third one will be examined in the next chapter in relation to research from art, literary critics, and affective science. The main idea is that non-propositional contents may be highly

relevant in cognition and communication to facilitate further cognitive operations, hence they deserve more attention than they have had. I end this chapter with a summary.

4.2 The 'Primacy of Propositions'

4.2.1. Linguistic meaning and truth-conditions

Both truth-conditional theories of meaning and speech-act theory continue the exploration based on what has been laid out by philosophers in the early twentieth century. The linguistically encoded meaning – widely referred to as the 'literal meaning' – of an utterance is thought to fall entirely within the realm of propositions. In other words, it bears truth-conditional value. However, an intuitively robust observation is that utterances express more than propositions, and the communicated meaning of an utterance is usually not exhausted by its truth conditions. This intuition is manifest in the distinctions made between speech-act semantics' describing and indicating, Grice's saying and conventionally implicating, relevance theory's conceptual and procedural meaning, to list a few.[34] An entirely truth condition-based theory cannot fully explain why the meanings of some linguistic elements do not contribute to the truth conditions of the utterances where they occurred. Here are a few examples that illustrate this point (non-truth-conditional elements are italicised):

(42) *Unfortunately*, John can't come.
(43) We went to the classroom, *but* no one was there.
(44) *Look out*!

Speech-act semanticists tried to account for non-truth-conditional elements by differentiating indicative content from descriptive content. To indicate is to perform a higher-level speech act on top of the proposition expressed. Sentence meaning at its minimum includes both the proposition expressed and an 'illocutionary force indicator' (Searle 1969: 30) that expresses the type of speech act members of a community are disposed to perform in the utterance of this sentence. For example, the descriptive content or the proposition expressed in (42) is 'John

[34] It is worth noting that the conceptual/procedural distinction in relevance theory crosscuts the truth conditional/non-truth conditional distinction, and that they might not be mutually exclusive. Some procedural linguistic expressions (e.g., pronouns, mood indicators and some illocutionary adverbials) may nonetheless contribute to truth conditions. See Wilson (2011a) for a comprehensive review.

can't come'. The use of 'unfortunately' indicates that this sentence is to be taken as expressing the speaker's regret without contributing to the overall truth condition. In performing this illocutionary speech act together with a proposition, the speaker expresses her attitudes, states, beliefs, etc., associated to that proposition (Searle 1979). This approach suggests that what an utterance means is basically a matter of what people are disposed to do with it, not just what the linguistic elements stand for. By introducing the illocutionary acts involved in utterance production, speech-act semantics has the advantage of explaining the dynamics between the proposition and how it is to be taken, and thus includes non-truth-conditional linguistic meaning into the realm of speech acts.

One of the questions speech-act semantics failed to fully address is that given that the semantic meaning is known, there is still a sense in which the hearer needs to know the intention behind an utterance before he can know the illocutionary force (Strawson 1964). In his 1967 William James lectures, Grice provided the foundations for later pragmatic research which focuses on intentional communication to deliver speaker's intended meaning (as discussed in Section 3.2). According to Grice (1957), by uttering *x*, an utterer *U* intends the addressee *A* to produce a certain response *r*, and *U* intends *A* to recognise this intention based on which *A* can produce *r*. This means that anything outside the production of *r* is not intended by the speaker, and therefore is not part of her intentional communicative behaviour. Grice (1969) abbreviates this kind of intention as *M-intention*, which is at the centre of analysing word/sentence meaning. We should not talk about this meaning without talking about what people intend to convey by them. According to Grice, users of a natural language usually have a conventional procedure in the utterance of sentences, and that a sentence means *p* for a group of language users if and only if the sentence is conventionally used among this group to M-intend that *p*.

In this framework, the communicated content consists of what is said (parallel to the descriptive meaning in speech-act theory, hence truth-conditional) and what is implicated. To quickly review what Figure 1 shows (repeated below for convenience), there are two further types of implicature: conventional implicature and non-conventional implicature. A conventional implicature is non-truth-conditional; but it is part of the conventional meaning of a lexical item. Therefore, its meaning has to be decoded rather than inferred.

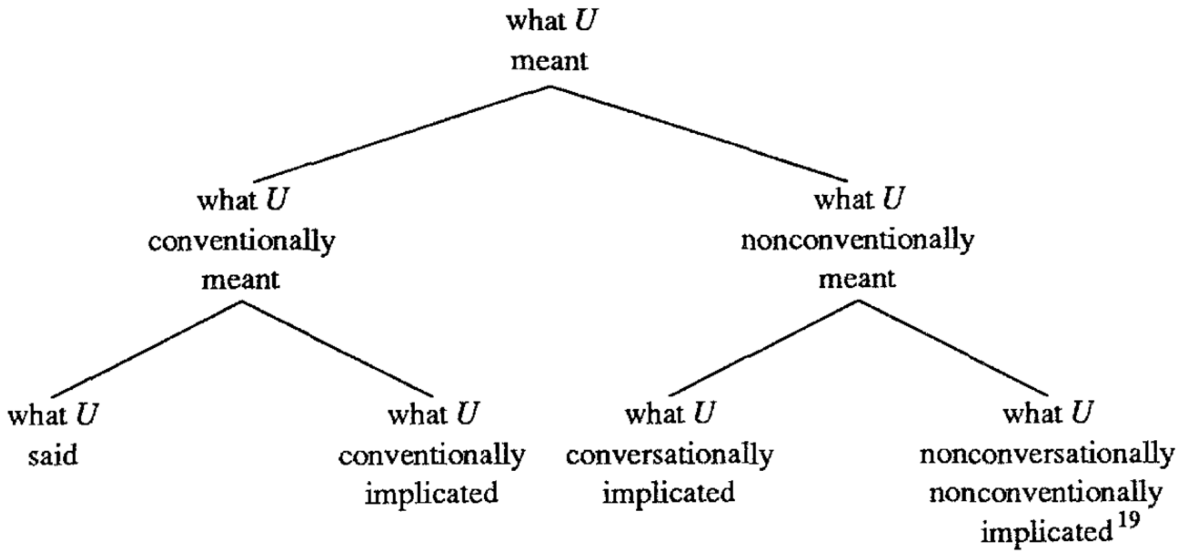

Figure 1: The classical Gricean representation of meaning

Source: Neale (1992: 524)

Conventional implicatures help determine what is implicated, such as the 'but' in the following example (Grice 1961: 127):

(45) She was poor *but* she was honest.

If, instead of the utterance in (45), the speaker said, 'She was poor *and* she was honest', the two sentences would be true or false together, but part of what they communicate is different. The word <but> conventionally implicating, very roughly, a contrast between her being poor and her being honest (or even between poverty and honesty). This logical relation is inferred by the hearer because of what is conventionally meant by <but>.

In contrast, non-conventional implicatures are not part of the lexical or logical meaning. Grice (1975) further identifies a special type of non-conventional implicature which he calls conversational implicature, whose meaning is pragmatically inferred according to the Cooperative Principle and the four conversational maxims. Such inference plays a key role in identifying speaker's meaning, and it happens in most cases of daily communication. For example, upon hearing the utterance 'Can you pass the salt', the hearer usually performs an act (passing the saltshaker), possibly accompanied by an utterance 'Sure', instead of just uttering 'Yes'. Grice sees this as suggesting that the hearer infers what is implicated as making a request,

even though the sentence meaning is conventionally taken as a question.[35] The conclusion drawn from the Gricean approach is that a non-truth-conditional element marks an illocutionary speech act, which is to be recognised in combination of the 'audience-directed' speaker's intention (Strawson 1964: 451). This also means that what cannot be captured based on communicating and recognising intentions tends to be excluded from examination or considered at most playing a secondary role in communication.

The Gricean framework has had great influence on how language philosophers and linguists consider the communication of meaning. But it raises further questions. Wilson and Sperber (1981) argue that while the distinction between proposition expressed by an utterance and the conversational implicature conveyed is valid, the boundary between saying and implicating may not be as clear-cut. They suggest that Grice's conversational maxims (in particular, the maxim of relevance, which Grice did not elaborate on) play an equally important role in determining the proposition expressed. In cases such as metaphor and irony, only the conversational implicature is communicated, which cannot be fully accounted for by the violation of maxims (see Chapter Three).

Furthermore, linguistically encoded meaning may not just be a matter of either truth-conditional or non-truth-conditional; they can be either representational or procedural. Blakemore (1987) offered a comprehensive analysis of 'but' – among other connectives such as 'after all', 'so', and 'moreover' – to illustrate that these expressions themselves do not contribute to the propositional contents, but they encode instructions for selecting the context against which to look for inferential relations. That is to say, they provide guidance for and constraint on the way an utterance is to be understood. In this way, words such as discourse connectives have a significant role to play in processing propositional content. I will come back to the discussion of Blakemore's proposal and later research on procedural meaning in Section 4.3. For now, I will dwell slightly longer on the primacy of propositions to show why most philosophers, linguists, and cognitive scientists believe that inference is partly or wholly based on the 'propositional mould'.

4.2.2. Fodor's computational model of mind

[35] More accurately, what is encoded in the sentence 'Can you pass the salt' is not that it is a question but, rather, the interrogative mood.

The precedence of propositional approaches to both cognitive science and linguistics is partially the result of modern theories of human mind. American philosopher Jerry A. Fodor provides an informative account for the mind's functions at different levels and stages when processing information received by peripheral sensory systems. This section briefly introduces his computational model, its main arguments, and some remaining issues that still need further examination.

Fodor's *Language of Thought Hypothesis* concerns the nature of human thought, and suggests that human thoughts occur in *Mentalese*, a language-like compositional system that is not the same as the language humans use to speak (1975, 2008). Mentalese consists of mental representations upon which mental processes take place, and these mental representations have logical forms that reflect their logical relations. To have the thought 'Granny left and Auntie stayed' (Fodor 2008: 21) is to think of it as a conjunction of two propositions (i.e., $p \wedge q$ in which p=Granny left, and q=Auntie stayed). The truth condition of this thought is determined by that of this conjunction (i.e., $p \wedge q$ is true when both p and q are true). Therefore, the meaning of a logically complex expression depends on both the meaning of its consisting simple expressions and its logical form. At a conceptual level, in order to have any thought about a cat, it is necessary to have the concept CAT and the denoted properties that individuate CAT from other concepts (Fodor 1998). By corresponding to mental representations, expressions in natural language therefore share the same structure and relations. The implication is that the results of mental processes – thoughts, beliefs, wishes, etc. – and the natural language used to express these results are inherently propositional.

Based on the argument that mental processing is about representations and their relations, Fodor (1983) further proposes *Computational Theory of Mind* (CTM). According to CTM, the way in which human minds function can be explained by an analogy with a Turing machine, a closed computational system that operates on the encapsulated information about the current state, the configuration, and the programme. Cognitive systems are modular in the sense that they are 'domain specific, innately specified, hardwired, autonomous, and not assembled' (Fodor 1983: 37). A living organism is constantly exchanging information with the environment, but such raw data will need to be represented as mental symbols that both reflects how the world is and how it can be applied to cognitive processes. The computations of mental symbols, by nature, can only operate on representations that contain propositional elements.

Anything that is not propositional will need to be first 'translated' into a form that is accessible for the central processor.

Consider digital images composed of pixels that each represents the value of its intensity. A black and white image only contains two colours that can be assigned the value of 0 or 1. When this image is fed into a computer, it is not the colours black and white that are being processed; rather, the computer analyses how the 0s and 1s are distributed to render an image that, when displayed on the monitor, is perceived by the human eye as of black and white. In this analogy, the translating operation is performed by a programmer, or to be precise, an interface system. The human mind has a built-in input system that has similar intermediate functions. The information processing starts from perception systems or transducers receiving proximal stimulus configurations and feeding them into the input system as the 'premise' for inference (the 'raw data' of the perceived signal from an achromatic colour that absorbs all visible lights). The input system then encodes such information into readable form and delivers representations of characters and distribution of things in the world as the conclusions of inference (a thought that we are seeing the colour black). The central processor or the thought only have access to these outputs from input systems and does not analyse the 'raw data', nor does it interact with other mental operations.

As far as Fodor (1983) is concerned, the fact that lower-level information is largely inaccessible to higher-level processing is partly a matter of priority allocation.[36] The solution to better allocate finite cognitive resources to achieve higher processing speed therefore requires a limited access for the central system to all the mental representations that are computed. An intermediate representation is discarded once it has been analysed, or it may be retained only at a special cost. Pylyshyn talks about the similar idea as 'cognitive impenetrability' (1980: 128), where perceptual outcomes are generally insensitive to assumptions, because those two systems are separate and do not interfere directly with each other. In the above example, this means that having a thought of seeing the colour black is not in direct relation to the perceived signal, but derived from the mental representations constructed after the signal has been processed by the input system. Relevance theory also adopts this view in explaining human

[36] As mentioned in Chapter One, the terms 'lower-level' and 'higher-level' are used metaphorically to reflect an assumed hierarchy in cognitive processes. It does not, however, imply that lower-level operations always occur before higher-level ones. Instead, it is more likely that they are not entirely independent from each other. What we consider to be a simpler and more primitive system does not replace but augments a more complex one (Cornell and Wharton 2021). Relevance plays a crucial role in both types of operations (Wharton et al. 2021).

cognition being geared towards maximal relevance to avoid information overload, but it questions the premise that central processing is non-modular. Where it diverges from the Fodorian framework will be addressed shortly after.

Understanding utterances, according to Fodor, also requires an intermediate system that will turn information into an accessible format. Upon hearing or reading a token sentence (or an utterance in relevance theory's term), the input system only processes some of the information it has access to. The remaining information may well be registered but it will not be computed. The question then becomes which part of the information enters computations and which does not. For Fodor (1983), to have a thought is fundamentally to entertain a representation whose content is propositional. Upon being received, a token sentence goes through input systems where it is assigned a 'structural description' (ibid.: 44) before the central processor can interpret it as a thought or a belief. This structural description is in essence a token-to-type relation, which is exactly what the input system operates on.

Therefore, both linguistic recognition and perceptual mechanisms are input systems that are positioned between lower-level transducers and higher-level cognitive operations (Fodor 1983). However, this does not mean that the language module will process all the information it received. A Turing machine is built to recognise and compute any data that hold syntax validity. If the CTM is true, then the computation of a sentence will only involve its syntactic forms, and that the thought associated with this sentence would also have syntactic structures. Only in this way can mental processes be truth-preserving. The reason is that the syntactical form of a representation determines how it will be computed, and the logical form corresponds to the syntax of representation will guarantee that mental processes are causal. As Fodor (2000) sees it, this model explains why thinking can be both rational and mechanical.

The fact that linguistic recognition is informationally encapsulated also means that it is insensitive to context, which brings into question whether comprehension demands the recovery of definable lexical items the word may contain (Fodor 1983). This question concerns the stage when the semantic information is recovered. In other words, when seeing the word <bachelor>, does the mind recognise it as meaning unmarried man immediately, or does definition retrieval happen after a representation (i.e., the concept BACHELOR) has been delivered? Fodor (1983) endorses the latter view, arguing that it is only in the post-comprehension inference that <bachelor> and <unmarried man> are identified as synonymous.

Input processing for language 'respects such structurally defined notions as item in the morphemic inventory of the language' (ibid.: 92). And since the input system computes only on syntactic forms, it should not have access to semantic properties and therefore performs no fast, mandatory, informally encapsulated analysis on semantic information. In effect, the representation or concept itself as a label is stable, and the matching between a conceptual label and its corresponding semantic properties happens in a separate process.

The Fodorian model is insightful in explaining how perceptual information is processed at different levels to render a thought. However, while Fodor (1983) acknowledges that individual's experience of relations in the world may affect how a lexical network is structured in the mind, and that certain aspects of low-level representations may be retained at a cost in memory or attention, he does not fully elaborate on the mechanisms at work. Furthermore, this model does not allow the involvement of non-propositional representations such as emotions during comprehension. This, as will be discussed in Chapter Five, may also play a role. In developing the Fodorian framework, relevance theory tries to answer some unsolved issues Fodor left behind, providing an adequate account for ostensive inferential communication. The next sub-section explores relevance theory's development of Fodor's theory concerning the nature of human cognition and communication.

4.2.3. Relevance theory's development of the Fodorian framework

Relevance theory endorses Fodor's (1983) hypothesis that the human mind consists of specialised representational and computational systems that work on different levels. Lower-level perceptual information needs to be analysed and transformed into appropriate higher-level conceptual representations regardless of which areas such information is originally derived from. Then, these representations enter the central processing system, where they will be integrated and compared with information that is already held in memory.

However, relevance theory does not endorse Fodor's (1983) argument that higher-level cognitive processes are non-modular, especially his solution to the 'frame problem' when comparing the human mind to Turing machines. The main issue is this: how does the central processor select what information to process and when to stop processing to avoid an information overload? As far as Sperber and Wilson (1996) are concerned, this is not really a problem, because the human mind is different from a computer in that our central processing

system will only consider some of the available and relevant evidence but never all of it. By the strictest epistemic standards, the human mind is indeed 'irrational'; but this does not pose a threat to cognition because the human mind can be considered rational if it can 'maximize the expected cognitive utility of the information one attends to' (Sperber and Wilson 1996: 531). The notion of relevance, as it is used in relevance theory, is always about the cognitive utility of an individual at a given time (see Chapter Three). This means that with a wide range of available information being registered and stored in memory, human cognition will always opt for the maximal effect-to-effort ratio. The decision about when to stop thinking is based on when the optimal relevance is achieved, for which expectations of cognitive effects will be a determining factor (Sperber and Wilson 1996).

Sperber (2001) further points out that CTM is flawed because computations, being informationally encapsulated by nature, do not take into consideration contextual information while performing inference. Thought, after all, is highly sensitive to context. His earlier works (1994, 1996) propose a looser definition of what constitutes a 'module', and this definition is also adopted by relevance theory (Wilson and Sperber 2004). According to this definition, a module is an autonomous and genetically specified computational device that works on input from specific cognitive domains, provided by parts of the nervous system.

The key difference here from the ideas promoted by Fodor is that it is not only the peripheral input system that is modular, but rather the human mind in general. Moreover, the human mind is *massively* modular. A genuine central system does not mandatorily compute every piece of input in order to avoid an informational explosion, even though it has access to all the data and allows full integration at some level. Meanwhile, a massively modular mind is also context sensitive, considering outputs from multiple modules against cognitive efforts required and cognitive effects yielded (Sperber 2001, 2005). Whichever module accepts the most salient premise as an input will receive more cognitive resources than others, therefore becoming more likely to deliver a thought or to modify an existing assumption.[37] In this way, the overall inference is sensitive to context, while individual computations in the input system remain local and context independent. Cognitive efficiency is therefore a matter of allocating resources for the maximal effects, characterised by relevance (Sperber 2005).

[37] As Sperber notes, saliency is an 'obvious and obviously crude possibility' (2001: 54) compared to relevance, which is a 'subtler, complex, noncomputational factor' (2001: 54).

Relevance theory (Sperber and Wilson 1986/1995; Wilson and Sperber 2004) further makes two arguments about inference based on the Fodorian framework. First, inference is 'global' as opposed to 'local', which would be the case if inferential process only has access to a finite local dataset. This follows the idea that human mind is massively modular and thus has free access to all conceptual information available, making it sensitive to context. Second, although demonstrative inference relies on logical form as Fodor (1983) suggests, the kind of inference that is typically involved in comprehension is non-demonstrative. This means that successful communication is not always guaranteed even when the logical rules for drawing a conclusion from a premise are observed. What happens is that the hearer considers the evidence provided by the speaker's ostensive behaviour, and constructs an assumption for which 'there may be confirmation but no proof' (Sperber and Wilson 1986/1995: 65). What is being confirmed is the decision to maintain and strengthen an old assumption or to replace it with a new one, but there is no way for the hearer to know for sure that the thought he now entertains is exactly the same one the speaker has. This, however, does not present as a huge problem for communication, since as discussed above communication within an inferential model is not about achieving a perfect match to speaker's meaning.

The following example, adapted from Sperber and Wilson (1986/1995: 71), can illustrate this point. Suppose Anna and Ben are talking about the current weather:

(46a) Ben: According to the weather forecast, it's going to rain.
(46b) Anna (standing at the window): It certainly looks like it.
(46c) Ben's old assumption: The weather forecast said it's going to rain.
(46d) Ben's new assumption: It's going to rain.

Anna does not confirm the fact that it will rain soon – in fact, it is probably impossible to do so – what she does is to provide enough evidence for Ben to confirm his own assumption, thus making her utterance relevant to Ben. Ben's deduction from Anna's utterance in (46b) is a key process in this non-demonstrative inference, and the strength of the truth conditions of the utterance in (46b) is inherited by Ben's new assumption in (46d). In other words, if the proposition expressed in (46b) is true, there is a good chance that Ben can confirm that the proposition in (46d) also being true. The entire inferential process is non-demonstrative because the proposition in (46d) might still be false even if that in (46b) is true (e.g., that the dark clouds are later blown away by wind and the sky clears up).

However, depending on the contextual assumptions that are mutually manifest to both interlocutors, the same utterance may yield different contextual implications. Consider the above conversation happening in another scenario:

(47a) Ben: According to the weather forecast, i''s going to rain.

(47b) Anna (standing at the window, looking out at the clear sky): It certainly looks like it.

(47c) Contextual fact: There are no clouds in the sky.

(47d) Contextual assumption: If there are no clouds in the sky, it's not likely to rain.

(47e) Contextual implications:

i. It's not going to rain.

ii. Ben should not trust the weather forecast.

iii. It's a good day for an outdoor picnic.

In this case, Ben is likely to abandon his previous assumption based on the irrelevance of the linguistically encoded meaning of Anna's comment to the mutually manifest contextual fact. According to relevance theory, the use of irony directs the hearer's attention to an implicitly conveyed propositional attitude about the content of the utterance, rather than about the weather (Sperber and Wilson 1981). The propositional attitude corresponds to the ridiculed proposition and contributes to the cognitive effect achieved by processing Anna's obviously false comment. This leads to Ben's conclusions that Anna is being ironic and that what she actually means is that it will not rain. As is shown in (47e), this contextual implication (i) may be combined with further contextual assumptions to yield further contextual implications such as those listed as (ii and iii). They are, of course, of different degrees of relevance to the hearer at a given time and may not be entertained simultaneously.

Meanwhile, irony (as well as metaphor and many other cases of figurative language) cannot be 'translated' into an equivalent full-fledge proposition, even though the embedded attitude is propositional and can be used to make further inference (de Saussure and Schulz 2009). There is something else that also contributes to the overall interpretation of Anna's comment. This example shows that while logic rules are certainly involved in inference, the hearer needs to take into consideration other factors, including contextual facts and contextual assumptions, in order to construct a plausible interpretation of the speaker's intended meaning. It also suggests that the standard relevance-theoretic account might have left out or at least not paid enough

attention to some aspects of utterance comprehension which cannot be fully accounted for using logical operations on propositions. In de Saussure and Schulz (2009), processing irony involves a kind of non-propositional knowledge about the self and its relation to the world. In Wharton and Strey (2019), the communication of emotions is 'underpinned by the unconscious activation of both information about emotional states in others and, sometimes, the states themselves' (p. 265). Or, as the poem 'River Snow' at the very beginning of this thesis illustrates, much of what is communicated should be better seen as sharing or showing something that is too vague and cloud-like to be paraphrased at all. What these studies focus on, which has been briefly mentioned but less explored in standard relevance theory until recent, is the role of non-propositionality: How should we understand the so-called 'non-propositional effects'? To what extent are non-propositional elements involved in verbal communication? How exactly can they contribute to understanding what the speaker means? And how do they interact with other cognitive processes? We now turn to these issues.

4.3 Moving beyond propositions

It is perhaps not surprising that propositional content is traditionally viewed as having primacy in communication and cognition. Propositions have structural and logical properties that can be analysed in a precise and predictable way. However, as Pilkington (2000) remarks, although the so-called non-propositional effects include various types whose precise nature may not be easily pinned down, it does not follow that a comprehensive theory of communication should simply ignore them. There has been an increasing amount of literature suggesting that the communication and effects of non-propositional contents should be taken as a serious matter in current pragmatic research.

To set the ground for discussion, I adopt the relevance-theoretic description on non-propositional effects, whose characteristics include that (Wilson and Carston 2019: 32-33):

(a) different audiences paraphrase them in rather different ways.
(b) no finite paraphrase can capture all their nuances.
(c) they are often described as "open-ended".
(d) they typically involve the activation of perceptual, emotional or sensorimotor mechanisms.

Non-propositional effects can be achieved through a range of different routes: from expressives, mental images, emotions, impressions or other sensations. Any attempt to provide a systematic account of non-propositional effects will need to answer how they may be handled. This is the central challenge mentioned in the quotation at the beginning of this chapter. Are they triggered or activated by making connections between linguistic contents with the audience's previous experience? Or are non-propositional effects involved more extensively, contributing to and influencing our interpretation in general? Contemporary works on non-propositional effects mainly focus on three aspects: descriptively ineffable entities, impressions, and poetic and other aesthetic effects. The remaining of this chapter will address the first two, and the third aspect will be examined in Chapter Five.

4.3.1. Descriptively ineffable entities

'Descriptive ineffability' is a property of expressions bearing meanings that are communicated to an audience but cannot be broken down into propositions (Blakemore 2011). However, such expressions cannot be analysed in the same way as speech-acts theory or the Gricean framework analyses non-truth-conditional contents. Relevance theory proposes a conceptual-procedural distinction with the assumption that there are regular 'content' words that encode concepts, which are the building blocks of the conceptual representational system. Other words encode procedural meanings, or 'instructions', that contribute to the manner of computation during utterance comprehension (Blakemore 1987, 2011; Wilson 2011a). Another way to look at procedural meanings is to treat them as narrowing down the scope of inference and increasing the salience of some hypotheses over others. They are indicators of the general direction in which an utterance is to be comprehended (Wharton 2003; Wilson and Wharton 2006).

Relevance theory takes the communicative intention as one that does not directly modify the hearer's thoughts, as Grice has suggested, but rather modifies his cognitive environment by achieving cognitive effects. A person's cognitive environment consists of facts and assumptions that person may come to be aware of and those he is capable of entertaining at the time of communication, that is, facts and assumptions that are manifest to him (Sperber and Wilson 1986/1995; Wharton 2009). Within this framework, the communication of not only clear propositions but also vaguer aspects such as attitudes, impressions, feelings, and emotions can be accounted for by the cognitive effects an utterance can yield. Introducing the notion of

procedural meaning helps explain how the comprehension of conceptual meaning may be constrained and manipulated, so that the hearer can achieve cognitive effects by entertaining the set of facts and assumptions in precisely the way the utterer intends him to.

How exactly does procedural meaning constrain comprehension? One possible answer comes from the model of human cognition that involves representational and computational aspects. If the human mind is massively modular as Sperber (1994) suggests, then procedural expressions may trigger domain-specific cognitive procedures that are more highly activated in the current situation, hence more likely to be chosen by the audience (Wilson 2011a). Consider the following utterances ranging from everyday expressions to more poetic ones:

(48) *Honestly*, I don't care.

(49) [hearer arrives laden with shopping] *So* you've spent all your money.
(Blakemore 1987: 86)

(50) And *words*, *little words*,
words too small for any hope or promise, not really *soothing*
but *soothing* nonetheless. (Siken 2005: 10)

The italicised expressions in the above examples contain meanings that need to be worked out in terms of their roles in guiding the addressees to interpret the utterance in a particular way. The illocutionary adverbial in (48) does not contribute to the truth conditions of the entire utterance, hence it is non-truth conditional. However, it does encode some conceptual meaning (the manner of being honest) and it contributes to the 'higher-order explicatures' that is part of the speaker's intended speech act or propositional attitude (Wilson 2011a; Wilson and Sperber 1993). In this case, the use of <honestly> indicates that the speaker is being straightforward and asserts her proposition in an honest manner. By contrast, the word <so> in (49) does not map onto a concept in the same way as content words, hence it is not conceptual. Rather, it encodes procedural meaning which indicates how the utterance that follows is relevant to the hearer for deriving a contextual implication.

The above two examples show that the distinction between conceptual and procedural meaning is not as clear-cut as that in earlier theories such as speech-act theory's describing and

indicating or Grice's saying and implicating.[38] To quickly reiterate the discussion of the previous section, earlier accounts proposed a distinction between the proposition expressed and information on how that proposition is to be taken. In the utterance 'I'd love to come but I can't' the word <but> does not change the truth conditions of the proposition expressed. Rather, it adds on top of them a logical relation of contrast at a different, higher level, which indicates the speech-act the speaker intends to perform or the kind of propositional attitudes she intends to express.

The utterance in (50) is an example of (near) repetition that also serves to constrain interpretation. Apart from conceptual meaning, the repeated part also communicates something that cannot be pinned down to propositions. Sperber and Wilson (1986/1995) suggest that repetition can achieve relevance in two ways (see also Blakemore 2008, 2011). First, by modifying the propositional form of the utterance, the utterance achieves extra contextual effects. Thus in the utterance in (50), the near repetition of <words> indicates how insignificant or small those words appear to be, putting emphasis on the poet's degree of commitment to the proposition communicated. Alternatively, repetition may also encourage the addressee to extend the context to yield more contextual assumptions and implications, which lead to extra contextual effects. The repetition of <soothing> does not mean that the words are more soothing. Instead, the addressee is encouraged to pay more attention on the encoded meaning, and to imagine in a wider context what <soothing> might mean. In this way, a range of otherwise unnoticed cognitive effects can be recovered.

The effects brought by the repetition in (50) are equally difficult to paraphrase, and according to Blakemore (2008), they are of different kinds. While the effect of repeating <words> works via intensification, that of <soothing> is the result of 'hybrid representation' (ibid.: 48) which gives a heightened vividness by combining two segments. The reader is able to form an interpretation that cannot be retrieved from processing either segment alone. That is to say, processing the repetition of <soothing> yields a slightly different interpretation. Therefore, the extra cognitive effort spent on processing the repetition is justified.

[38] Despite further difference, Grice's approach discourse connectives such as 'but' falls into the broader speech-act framework, and his analysis of conventional implicature is reminiscent of the distinction drawn by speech-act theory (Wharton 2009).

There is also the question about how much of what is happening during repetition is speaker-intended. By providing an elaborative examination on repetition, emphasis, and intensification, Jackson (2016) suggests that stylistic repetitions are cases of indeterminate showing as defined by Sperber and Wilson (2015), varied in terms of their degrees of subtlety. If the act of showing is very clear, it functions as a flag-waver of speaker's behaviours to emphasis, suggesting that the hearer should pay more attention to certain aspects of the utterance to recover the suitable effects, hence more cognitive effort is required (Jackson 2016). Yet what is being shown here is more than direct evidence for what the speaker communicates, as has been discussed in Wharton (2009). Jackson (2016) argues that the speaker also shows aspects of utterance form, which are the inputs to processing rather than the produced effects. Therefore, the repetitions in (50) show the speaker's emphatic behaviours that encourage the hearer to put extra efforts on processing certain parts of the utterance. As a result, this processing is intensified to yield a modified interpretation characterised by cognitive effects.

Let us dwell a bit longer on the repetition of <soothing> in (50), which may be considered as expressing the same proposition in (51):

(51) [The words] are soothing.

There is good reason to say that the original utterance communicates something that goes beyond the proposition expressed in (51). The poet is also communicating an emotional experience which rises from this seemingly contradictory claim. Drawing from Wharton's (2009, 2016) research on interjections and natural codes, I suggest that the repetition of <soothing> in (50) presents not just an increase in cognitive effects, but also an interplay between emotion and cognition. The emotional experience is not conveyed through describing, as there is no description of what kind of experience it may be. Rather, the poet is expressing and hence 'passing on' his emotional state to the reader so that it may function as a procedural heuristic guiding the reader to experience in a similar way, which then leads to a plausible interpretation accompanied by a (near-)matching of suitable mental and/or psychological states. If this is the case, some words encode both conceptual and procedural contents, allowing them to trigger online construction of *ad hoc* concepts or specific cognitive procedures (see Wilson 2011).

4.3.2. Impressions

The term ‘impression’ is usually used in everyday situations to refer to those effects on the senses that are caused by external influences. But this folk definition gives little more than a clue to what actually happens in the mind when an impression is entertained or ‘felt’. Despite the intuitive thought that impressions are almost involved in many cases of communication, there are still many debates to be had over the extent to which an impression is involved, what role it might play, and whether or not it can be accounted for by a theory based on inference. One attempt provided by relevance theory is to examine impressions in terms of their effects on the cognitive environments of individuals.

As mentioned in Chapter Three, verbal communication can be explicit and implicit, and what is implicit can be sometimes characterised as weakly communicated. According to relevance theory, speaker’s meaning can be a proposition, or can be paraphrased as a proposition, or cannot be paraphrased at all. Therefore, there is a continuum of cases between showing and meaning which is more or less determinate (Sperber and Wilson 2015). This continuum, when combined with the showing-meaning one, form a bi-dimensional space in which the intended cognitive effects are positioned. Impressions are among the vaguer, indeterminate, non-paraphrasable aspects which do not rely on the communication of a single assumption or a set of assumptions. They are positioned closer to the right side of Figure 2 (repeated below for convenience):

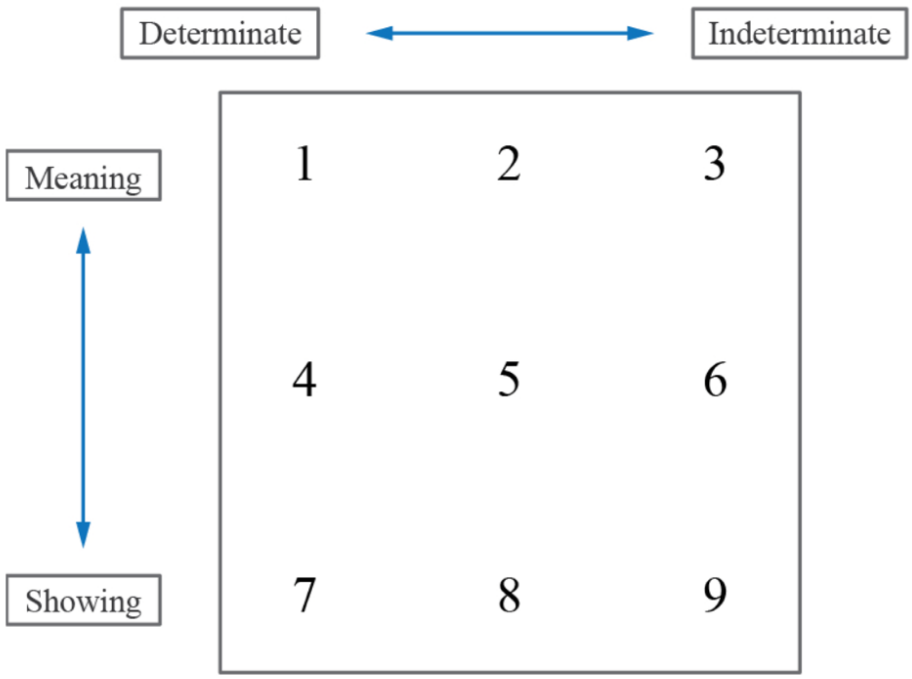

Figure 2: The showing-meaning and determinate-indeterminate continua
Source: Sperber and Wilson (2015: 123)

Suppose Anna enters the kitchen with Ben and sniffs the air. What she intends to do by this ostensive behaviour is to make (more) manifest to Ben a range of assumptions, including perhaps that there is the smell of something being burnt, and further assumptions this makes mutually manifest. In this way, what she communicates is better described as an impression, the result of 'a noticeable change in one's cognitive environment, a change resulting from relatively small alterations in the manifestness of many assumptions, rather than from the fact that a single assumption or a few new assumptions have all of a sudden become very manifest' (Sperber and Wilson 1986/1995: 59). The communication of impressions leans towards the indeterminate end without a single proposition being asserted (Pilkington 2000; Sperber and Wilson 2015; Wharton 2009). In other words, instead of suddenly obtaining a single strongly manifest assumption, the audience obtains an array of weakly manifest assumptions that are difficult to be pinned down, and there is no guarantee how many assumptions should be made manifest. This seems to be aligned with the intuitive thought that impression is usually formed without conscious thoughts or concrete evidence. It is in this sense that relevance theory argues that impressions can be communicated.

Below are a few examples where impressions are communicated both verbally and non-verbally:

(52) Sausages are *sizzling* in the pan. (Sasamoto and Jackson 2016: 46)
(53) Anna received a gift from Ben. She opened the box and found out it was a kitten. She said '*Aww*'.
(54) In the same setting as in (53), Anna turned to Ben, tilted her head, put her hands on her chest, and 'squeed'.[39]

Sasamoto and Jackson (2016) suggest that the established onomatopoeia <sizzling> in (52) involves a degree of showing even though it may to a certain extent have been conceptualised. The function of this word is to provide a 'sensory impression' (ibid.: 45) that represents perceptual experience faithfully enough. Specifically, the sibilant sounds in the word resemble

[39] As an increasingly popular word in English for making squeals in delight or excitement, 'squee' is now often associated with the vocal response people have when seeing something cute.

perceptually the sound produced when frying sausages in a pan. The audience is likely to notice such information first, leading to an impression of sausages being cooked. In (53), the contextual implication Ben retrieves from Anna's utterance would be the same if she said 'Aww! It's cute!'. But since only the interjection is being used, what she is communicating is an impression. Interjections such as 'aww' encodes procedural rather than conceptual information that facilitates Ben's retrieval of a range of implicatures associated with surprise and delight (Wharton 2003, 2009).

However, Anna's communicative behaviours in (53) and (54) seem to not only contribute to positive cognitive effects. She is also communicating something inherently non-propositional. Sometimes what the addressee obtains from an impression is not even an array of assumptions at all. For example, Anna's interjection in (53) leads to the expression of another layer of affective information which is different to any attitudinal description. In other words, what she is conveying directly is more like a kind of emotion or sensation. Her facial expression, body language and vocalisation in (54) replace words altogether, directly reflecting her affective states that are entirely non-propositional. In this case, communication may also lead to alterations of the 'affective environment' (Piskorska 2012: 110) to fulfil the expectations of what is affectively relevant. By communicating an impression, Anna not only conveys a rich bundle of contextual implications about her mental states, but also shares efficiently the 'qualia' (Rey 1980: 177), or what it feels like to experience such mental states. Impression may be a case in which cognition interplays with emotion, or, in some cases with sensations. Anna's high-pitch vocalisation perceptually resembles the kind of sound the hearer makes or has heard when encountering cute animals. This resemblance does not necessarily concern thoughts, but it is enough for the hearer to create an impression about Anna's mental states. Furthermore, there has been some research suggesting that what people feel when perceiving cuteness is a kind of genuine emotion by itself, even if it has yet a proper name (Buckley 2016). One candidate is *kama muta*, an experience of positive and warm feeling, usually described in English as being touched, moved, heart-warming, and so forth (Steinnes et al. 2019).

It would thus be reasonable to say that in (53), Anna not only experiences a 'cute emotion'; she also expresses her emotional states directly, contributing to the impression communicated by her utterance. In this sense, impression is not the result of making manifest any assumptions, but better described as a type of feeling (Wharton and de Saussure 2023). It is cloud-like, ineffable, not about performing logical operations on propositions, nor does it need to be

conscious. Also, the success of sharing an impression in this way very much depends on whether Ben has experienced such a cute emotion himself (not necessarily directed towards kittens, though). The reason may be that this process requires a recognition of the speaker's psychological states, and in introspection, a metacognitive matching between the hearer's own psychological states and those of the speaker's. In the next chapter, I will discuss more the communication of emotions, and how emotions can be relevant in verbal communication.

4.4 Summary

In this chapter, I presented a brief review of some important reasons why propositionality has taken a central position in the examination on human communication, so much so that a pragmatic theory seems to be considered persuasive only when it is built on a system where inference can be performed following syntactic rules. This tradition in both linguistic research and philosophical discussion inevitably leads to the view that non-propositional entities are secondary to conceptual representations. Perceptual experience, being vague, spontaneous, and intuitive, is often excluded from a pragmatic theory of communication and cognition.

I started with the truth-conditional content and how it affects linguistic meaning. One similarity found between relevance theory and the Gricean framework concerns the explicit and implicit content (see also Chapter Three). Grice rarely use the term 'truth conditions', but his notion of 'what is said' fits nicely into the expressed proposition by the speaker that bears truth-conditional value (Wharton 2009). Relevance theory argues that this distinction does not always coincide with the truth-conditions of an utterance, offering a rich literature exploring alternative approaches to this issue (for example, Carston 2000, 2002; Sperber and Wilson 1986/1995; Wharton 2009).

Fodor's computational model broadens the discussion to human mind in general. This model suggests that thoughts occur in a compositional system that, although different from natural language used for verbal communication, contains sentence-like structures nonetheless (Fodor 1975, 2008). Mental process hence requires the involvement of both mental representations and the logical relations between them. Under the Fodorian view, perceptual information is excluded from the so-called higher-level cognitive operations from which a thought is formed (1983). Relevance theory, while endorsing some of Fodor's arguments, shows that not all instances of utterances can be 'translated' into an equivalent full-fledge proposition (de

Saussure and Schulz 2009; de Saussure and Wharton 2020; Wharton and de Saussure 2023). Apart from logic rules, there are other factors the hearer needs to take into consideration, including those that are non-propositional by nature, for an overall interpretation that is optimally relevant.

The 'Primacy of Propositions' assumes, not entirely accurately, that only logical operations are rational and measurable. From the perspective of standard relevance theory, the rationale behind this treatment is that only propositions can be mutually manifest to both communicators so that inference can be built on them. However, the wholly propositional model cannot fully explain effects that are not only non-propositional by nature, but also ubiquitous and important for successful communication. Content that does not bear truth-conditional values can also affect how speaker's intention is reconstructed. In some cases, the non-propositional content may even contribute to the understanding of what the speaker intends to communicate. I have discussed some recent developments in relevance theory on the issues of procedural meaning and impressions. In the next chapter, I will continue to explore non-propositionality by examining the notion of 'poetic effects' (mentioned in Sperber and Wilson 1986/1995, and elaborated in Pilkington 2000) and other potential aesthetic effects in relation to art and literary critics. I will also discuss the role of emotions in daily communication as well as more 'creative' use of language.

Chapter Five: Poetic and other aesthetic effects

> All modern aesthetics rests upon an assumption which has been strangely little discussed, the assumption that there is a distinct *kind* of mental activity present in what are called aesthetic experiences. […] Thus arises the phantom problem of the aesthetic mode or aesthetic state, a legacy from the days of abstract investigation into the Good, the Beautiful and the True.
>
> Richards (1924/1930: 11-12)

5.1 Introduction

At the beginning of *Principle of Literary Criticism* I. A. Richards (1924/1930) points out that it is all too easy to have the kind of experiences that literary critics are interested in. However, addressing the question of how such experiences work is extremely difficult. Traditional aesthetic theories assume that what we experience when appreciating art and literature is somehow different to other kinds of experience. For linguistics, this is to say that there is something special about the language used in literary contexts that is responsible for the delivery of poetic effects.

In Chapter Three, I mentioned that some metaphors are thought to yield poetic effects by making manifest a wide range of weak but equally plausible implicatures. According to relevance theory, these creates common impressions rather than common knowledge (Sperber and Wilson 1986/1995). However, the notion of impression cannot be fully accounted for in terms of propositional cognitive effects. The nature of the type of information available to entertain during the reading of a poetic metaphor is also worth discussing. Surely such a metaphor communicates speaker-intended meaning, in the same way as all other cases of language use. At the same time, however, that meaning is not all that may be communicated. There is a traditional distinction between knowledge-how that knowledge-that, the former being non-propositional (Ryle 2009).[40] What, then, is communicated, and what is interpreted by the hearer? How can the hearer know that his interpretation, together with the kinds of non-

[40] Although Stanley (2011) tries to categorise knowledge-how as a case of knowledge-that and thus can be expressed by propositions, he also admits that the way something is done may be difficult to capture, and can only be effectively communicated via a demonstration. I am grateful to Kate McCallum for bringing this view into my attention during an online seminar on 8th Mar 2023 at University of Brighton.

propositional effect that metaphor may yield, is indeed what the speaker intends in the first place? Considering these issues, we may need to reconsider what exactly is 'poetic' about the effects brought by cases of figurative language.

In the next section, I start by addressing 'poetic effects', the third major aspect of the non-propositional effects identified in Wharton et al. (2021) other than impressions and descriptively ineffable entities. Following Pilkington's (2000) definition, I use the term 'poetic effects' to include a group of perceptual and/or emotional states available to the reader during experience of literary works, especially those incorporating creative devices including poetic metaphor, irony, and other expressions considered 'creative'. The challenge is that creative use of language often communicates a variety of effects that cannot be paraphrased into propositions, and the exact nature of these effects is difficult to determine. Pragmatic theories, on the other hand, seem to be more interested in explaining how certain assumptions may be represented in the hearer's mind during communication, and how those assumptions, when taken in a certain context, may provide a basis for inferring further assumptions. How, then, can a pragmatic theory account for the type of non-propositional effects that are commonly observed in communication?

Section 5.3 turns the attention to emotions. I first examine the main arguments of three major theories in modern affective science: Basic Emotion Theory (Ekman 1977, 1992b; Ekman and Cordaro 2011), the Psychological-Constructionist view (Barrett 2006, 2011; Russell 2003; Russell and Barrett 1999), and Appraisal Theory (Arnold 1960; Frijda 1986; Lazarus 1982; Roseman and Smith 2001). The conclusion is that Appraisal Theory might offer the most compatible view to what has been argued by relevance theory. The reason is that Appraisal Theory highlights the fundamental role of evaluation in terms of relevance to our goal in the elicitation and experience of emotions. In the second half of this section, I explore the relationship between emotion, cognition, and communication. Examples from both everyday verbal communication and more creative ones such as those from literary texts are used to show that emotional experience is ubiquitous in human communication as it is in cognition. A comprehensive pragmatic theory concerning these two research areas will need to go beyond the primacy of propositions in order to explain what we 'feel' in a more direct manner.

The purpose of this chapter is to demonstrate further that the 'Primacy of Proposition' cannot account for everything that happens during communication and comprehension. But this does

not eliminate the possibility for a pragmatic model which has the potential to explain the non-propositional content. The relevance-theoretic account can not only explain how a hearer may arrive at the implicatures of an utterance, but it is also highly relevant to the study of poetic effects and the communication of emotions – both of which present challenges to many other pragmatic theories.

5.2 What is 'poetic' about language?

There is an intuitive sense that language used in literature is – at least partially – different from that in daily communication. It is vaguer, less determinate, and may induce some kinds of aesthetic experience (Pilkington 2000). The meaning recovered from literary texts should not be treated as entirely speaker's meaning; rather, it may fall outside of inference in the strict sense. This leads to the idea that if literature is a case of communication, it might not be the same as classical Gricean communication because the author might not always have a fixed and specific notion as to the actual imports of the text (de Saussure 2021).

Does this mean that literature has any intrinsically special characteristics? Some literary critics would say yes. One influential contemporary literary theory that holds such a view is provided by the Russian formalist Viktor Shklovsky, who coined the term 'defamiliarisation' that distinguishes poetic language from practical language in everyday communication based on our mode of perception.[41] He wrote the following when commenting on how mental economy works during art appreciation (Shklovsky 1991: 6):

> By 'estranging' objects and complicating form, the device of art makes perception long and 'laborious'. The perceptual process in art has a purpose all its own and ought to be extended to the fullest. *Art is a means of experiencing the process of creativity* [original emphasis].

And in a later paragraph about poetic language, he wrote (ibid.: 13):

[41] 'Defamiliarisation' is the term usually adopted by English literary critics when addressing Shklovsky's theory. It is sometimes translated as 'estrangement', as is the case in the following quotes from a translated version of Shklovky's book.

> [W]e've arrived at a definition of poetry as the language of *impeded, distorted* speech. Poetic speech is *structured* speech [original emphases]. Prose, on the other hand, is ordinary speech: economical, easy, correct speech.

This view echoes Aristotle's idea that rhetorical language contains something specially and carefully crafted, suggesting that literary texts can be analysed in terms of how they are formally structured to create a sense of unfamiliarity. This means that there is something intrinsically special about poetic language, and that the 'correct' literary interpretation is based on conventions or rules imposed on the text. Shklovsky's approach takes poetic language as a means to transcend over-automatisation, which would lead to a formularised interpretation of art. However, it does not address why such process of perception is difficult – if it is indeed the case – nor how the unfamiliar effects can be pragmatically achieved. Over the past few decades, many empirical studies on metaphor processing have shown that when properly contextualised, metaphors do not take longer to process than their 'literal' counterparts, and the processing mechanisms for both types may be very similar (Gibbs 1994; Giora 1997; Onishi and Murphy 1993; Shinjo and Myers 1987; Sperber and Wilson 1986).[42] Creative or novel metaphors, on the other hand, tend to require more processing time compared to familiar ones even when they are properly contextualised (Arzouan et al. 2007; Giora 1999; Lai et al. 2009). However, this extra cognitive cost may be justified by the need to consciously manipulate mental images (Wilson and Carston 2019), or on the ground that more cognitive effects could be generated. These findings do not support the claim that there is anything fundamentally unique about metaphor that calls for a special treatment.

In light of contemporary research from pragmatics and cognitive science, it is reasonable to hypothesise that whatever effects literary texts may provide will be necessarily dependent on the on-line cognitive and pragmatic processing that takes place in the reader's mind in order to arrive at a plausible interpretation. Relevance theory provides one such attempt by explaining poetic effects in terms of the activation and access of a wide range of weak implicatures (Carston 2018; Sperber and Wilson 1986/1995; Wilson 2018), yet this fully inferential model might have underestimated the scope and depth poetic effects are involved. As Pilkington

[42] It should be noted that earlier experiments often used conventional metaphors as their data, which are relatively easier to be paraphrased into more literal expressions, though not without some degree of loss in their impacts. In Onishi and Murphy (1993), as well as Carston and Yan (2023), it is found that the cognitive cost may vary depending on whether the metaphor is used for referring or predicating purposes.

(2000) remarks, poetic effects should be described in terms of mental representation and mental processes, but they also need to take into consideration the intuitive interpretation and evaluation emphasised by traditional literary criticism.

Pilkington (2000) suggests that the poetic effects of a metaphor on the reader depend on the way context is structured on-line. The more a metaphor relies on a wider context for its processing, the more poetic it is considered. Contextual assumptions in the encyclopaedic knowledge are not stored as pre-given structures and then retrieved. Otherwise, this goes against the view that information in encyclopaedic knowledge is structured as the result of meta-representation under some 'higher level descriptive comment' (Pilkington 2000: 118) such as in the case of cultural endorsement. Pilkington's proposal is that instead of making more salient a range of thoughts, the kind of experience encouraged in literary reading involves phenomenal state attitudes, which are evoked by features found in literary texts. In this latter scenario, the key point is *how* such attitudes are guided. Successfully crafted literary texts provide such guidance that helps the reader in their search for relevance, to the point that the reader can *feel* what it is like to be in a certain situation as described by words.

However, Pilkington also admits that a pragmatic account of poetic effects is necessarily incomplete because it still cannot explain how affective information is communicated. Affective information is often considered central to art and literature in general, and its prominence is likely to contribute greatly to the diversity of poetic effects. Let us consider the following sentence from *Cosmos*, a popular science book written by American astronomer and science writer Carl Sagan (1980: 31):

(55) The surface of the Earth is the shore of the cosmic ocean.

This sentence contains a metaphor that can be considered as poetic and the reading of which may appeal to mental images, impressions, feelings and perhaps emotions alongside propositional information. Some readers may entertain a quasi-visual experience of the Earth 'floating' against the dark background of an ever-expanding cosmos. This 'image' is consequently far subtler and less determinate, and it is relatively rare to be vivid and concrete. Furthermore, the 'image' may contain some kinds of visual properties, hence quasi-visual, but it is not genuinely visual since the reader is not seeing such a picture with his eyes. As I will elaborate in the next chapter, the definition of mental imagery is far broader than what this term

denotes in daily conversation. Mental imagery, arguably, does not need to be consciously experienced in the way some relevance theorists have suggested for it to contribute to the processing of relevant information.

For now, let us suppose that a reader entertains a quasi-visual image like the one described above. It may evoke an impression – or perhaps a feeling as described in Wharton and de Saussure (2023) – of the minuteness of his home planet when compared to the vastness of the universe, or psychological states associated with how he responds to the insignificance of the place of humanity or his own existence in the universe. Under certain circumstances, people with specific phobias such as spacephobia (fear of outer space), nyctophobia (fear of night or darkness) and thalassophobia (fear of the ocean) may find this metaphor disturbing, even though the text itself is presented in a fundamentally different format from that of direct sensory stimuli. Such a connection between words and feelings/psychological states cannot be achieved by logically deriving conclusions from premises, at least not in a straightforward manner. In effect, the perceptual and conceptual effects may or may not fall within what the author has intended to communicate either explicitly or implicitly.

This is aligned with the assumption that the reader is on the one hand looking for the objective-propositional intended meaning, and experiencing subjective but sound impressions on the other hand, with or without knowing what the author aims at inducing (de Saussure 2021). I would argue that poetic metaphor reading may also involve experiential memories and affective reactions beyond propositional meanings or attitudes of the author, and thus contributes to the reader's making sense of this metaphor for himself. Meanwhile, by providing cues to perceptually and affectively relevant episodes, the image also allows the reader to gauge the overall relevance of the utterance to identify what is intended by the author. This is the main idea of the model proposed in this thesis – reading poetic metaphors like that in (55) is more likely to be a process of mutual sharing and actively experiencing.

Patricia Kolaiti (2019, 2020) provides an interesting take on what makes art experience relevant to the audience that may provide some insights into our discussion here. She argues that some human behaviours are perceptually driven. We like good food, warm weather, and pleasing views because they bring perceptual pleasure to our body. Therefore, we are more likely to attend to stimuli that enhance the level of pleasure to the body. As a result, the relevance of those perceptual stimuli should be evaluated in terms of *perceptual effects*, a supplementary

notion to cognitive effects introduced and discussed in Chapter Three. Just as cognitive effects are modifications of one's mental representations of the world, perceptual effects are modifications on the perceptual and sensorimotor systems, which contribute to the increase of the (perceptual) relevance for inputs such as artistic stimuli. According to this view, an artistic stimulus is intrinsically relevant to sensory experience accessed on a more intuitive level, regardless of whether the stimulus has any ostensive function. Artistic stimuli therefore cannot be described as ostensive stimuli as in the case of verbal communication, and the effects they give rise to (e.g., pleasurable sensations) cannot be fully accounted in terms of cognitive effects (Kolaiti 2020).

The tendency to attend to more perceptually relevant stimuli is likely to be extended into the conceptual world as well. Suppose a person finds great pleasure when listening to Tchaikovsky's 'June (Barcarolle)'; he is likely to 'tap into' this pleasing experience when this piece of music is brought up in his conversation with other people, influencing how this conversation will be processed. In a similar fashion, Kolaiti (2015) suggests that while the artist's perceptual experiences are intuitive and spontaneous, the creation of literature or poetry is a kind of craftmanship that requires deliberate attention and astute delivery. What comes out of the author's mind conveys not only information about that experience but also her perceptual response to it, both 'packed' in an artistic stimulus. From the reader's perspective, he is expected to derive sufficient contextual implicatures which yield positive cognitive effects to justify the conceptual relevance of the utterance. He is also expected to recognise the author's intention of experience sharing, through which perceptual and/or affective states may be shared in a more direct and intuitive way. He may do so by shifting his attention to focus on certain aspects of the object or event described, or certain (new) connections between objects or events. Kolaiti (2015) calls this specific, non-trivial way of *seeing* things aspectual representation, with 'seeing' used in a broader sense than 'seeing through the eyes'. In effect, it is not that there is a special 'lens' through which we perceive the world, but rather we attend to selected aspects of what we perceive. This, according to Kolaiti, is what it means to be creative in a specialised (and not incidental) way.

Sometimes a piece of literary text can bring up the feeling of knowing something significant but impossible to describe. These feelings include experiences of 'ineffable significance', including the sublime, epiphanies, and tears, chills or other physical arousals (Fabb 2021). It is

an acute, sudden, and intense response to both literary texts and aesthetic objects.[43] Nigel Fabb (2021) suggests that an experience like such can be treated as surprise, which arises when the perceived falls outside a normal range, but the specific occurrence and how it is understood or reported depend on both the immediate context and the larger one. In other words, a surprise occurs in a context, as the result of a mismatch between how we respond to the stimulus *in situ* and how we usually respond to stimuli of this kind. Previous research has shown that the way our minds work involves matchings of representations that are not always exact (Fodor 1975; Sperber 1994, 1996).

However, a mismatch alone is not enough, because surprises are common whereas genuine aesthetic experiences are rare. Fabb (2021) argues that an epistemic feeling of significance is also involved for the experience to be considered strong enough. In the case of literature, the reader anticipates a large quantity of thoughts being brought into consciousness. This can be attributed to formal changes, narrative strategies, the use of metaphor or other creative expressions, parallelism and repetition, etc.[44] The reader conducts a rapid guess which makes him metacognitively aware of the large number of potential cognitive effects without entertaining all of those thoughts. This quick assessment will lead to a strong feeling of significance, in the sense that the processing of information may be effortful but also rewarding. Compared with proper inference, this guess is subjective, intuitive, and perhaps focusing more on on-line experience.

Following Fabb's line of thinking, there are at least two reasons why the sentence in (55) may lead to experiences of ineffable significance. First, the idea of a 'cosmic ocean' exceeds normal expectations of an ocean both in terms of its scale and what it is made of. This non-schematic thought deviates from the 'intuitive belief' (Sperber 1994, 1996) and leads to a surprise. Second, the metaphorical relationship between earth being the shore and the universe being the ocean indicates a large number of thoughts available for the reader to entertain, which brings a non-propositional feeling of significance. In addition, I would add that the reader also appraises the

[43] According to Fabb (2021), triggers include the experiencer's perception of the world, everyday objects perceived in a different way, and artworks (including literature and a special status where representations of a character having this experience may lead to the reader having a similar one).
[44] I was introduced to this argument during an online seminar on 24th November 2021 at the University of Brighton. It is elaborated in detail in Fabb's (2022) book *A Theory of Thrills, Sublime and Epiphany in Literature*.

stimuli by imagining what it feels like to be in that situation, which guides him to pay (more) attention to certain aspects of this metaphor.

Note that this is not to confuse the distinction between comprehension and interpretation by taking a full-fledged conventionalist view.[45] The author's intention in using a certain poetic metaphor is certainly a crucial factor for how it is *intended* to be taken. No matter how poetic a metaphor is, processing it will need to be based on what is provided by the author in the first place. The experienced effects, which in many cases cannot be entirely reduced into propositions or propositional attitudes, will in return guide and influence how the metaphor will be interpreted eventually. It is because of this mechanism that non-propositional effects might play a more active role than we thought.

In general, I agree that relevance theory is very helpful in explaining the pragmatic processing of those conceptual representations typically found in poetic expressions. At the same time, it is also relevant in the exploring how perceptual and affective states can also be intentionally shared. Discussions on this issue can be found in, for example, Wharton et al. (2021), Wharton and de Saussure (2023), and Wharton and Strey (2019). In the next section, I turn to affective science and recent research outcomes in relevance theory to show how emotions can be communicated.

5.3 Emotion, cognition, and communication

The communication of emotions is commonly involved in daily communicative behaviours. It is also traditionally considered as positioned at the centre of both literary creation and of accounts of literary texts interpretation (Pilkington 2000; Yeh 1984/2008). An utterance in a natural language communicates both a representation of the state of affairs and a wider scope of effects that give clues, both directly and indirectly, to the utterer's mental states or their disposition to have certain mental states. This section briefly reviews the relationship between emotion, cognition, and communication. In line with recent research within relevance theory (Wharton et al. 2021; Wharton and de Saussure 2023; Wharton and Strey 2019), I show that a pragmatic account such as that offered by relevance theory needs and is able to incorporate

[45] For example, Fish (1989) adopts an extreme conventionalist approach to literariness by arguing that it is entirely institutional and that there is no meaning imposed on the text before the reader constructs one through interpretive conventions. I will not elaborate on this approach here as it is not the focus of this section.

many effects brought about by the communication of emotions. On the matter of non-propositionality, a pragmatic account is not only possible, but can also have strong explanatory power.

5.3.1 Emotions in affective science

The exploration of the relationship between emotions and cognition is nothing new, and it often involves relevant notions such as feeling, affection, thought, reason, and so forth. Early Greek philosophers had already noticed that emotions (*pathē*) are not simply stand-alone phenomena.[46] Following Socrates, Plato considered emotions to have originated in the soul. Aristotle further distinguished emotions from other bodily sensations based on the idea that cognition, or the soul, is involved in an emotional experience. For example, anger is caused by the thought of outrage, rather than occurring together with such a thought, indicating that emotions are different from feelings because the former are, in a loose sense, 'cognitive' (Fortenbaugh 1975). However, despite the long-lasting influence these early accounts have had, they do not provide a clear map of our mental world in terms of what emotions really are.

It was during the Enlightenment, the 'Age of Reason', that philosophers such as Descartes and Spinosa started to examine the mind-body problem with the help of developments in physiology and neurology at the time. Descartes discussed emotions in terms of the movement of the 'animal spirit', claiming that human passions were the result of mental processes in terms of concerns and morals caused by what happened to the body (Solomon 2003). This is an advancement in the sense that Descartes is trying to link mental states to bodily experience, but it also pushes emotions to a secondary or even opposite place to reason. As far as we know, Enlightenment philosopher David Hume arguably provided the first comments on the important and necessary role emotions play in reasoning in the European traditions. In *A Treatise of Human Nature*, Hume begins by arguing that all our ideas are derived from experience, and that passions can be evoked by forceful sensations of pleasure and pain, as well as reflections upon ideas. More importantly, by suggesting that reason is 'the slaves of the passions' (1740/2009: 636), Hume is making a claim that passions facilitate, guide, and restrain

[46] Early Greek philosophers are not the only ones interested in this matter, albeit they have much influence on how emotions have been considered in the 'Western' traditions. Early Chinese philosophers, for instance, also discussed emotions and its role in relation to mind and thought and provided their own theories about how and to what extent emotions are integrated with cognition. Due to the limitation of this thesis, I will not elaborate on their treatments here. For a comprehensive introduction, see Virág (2017).

reasoning processes by linking it to values of mankind. This is tantamount to saying that what we consider as important – namely, relevant – can only be selected with the help of emotions.

Contemporary research in affective science research generally agrees that the elicitation of a certain emotion necessarily involves physiological responses (e.g., increased heart rate and blood pressure, quickened breathing, tension in the muscles). This consensus is largely the result of the advances in Darwin's evolutionary biology and the works by William James and Carl Lange, which root the examination of human emotions in a wider scope of how organisms react to external stimuli.[47] For clarity, a stimulus should not be confused with the object of the emotion, which is what the emotion is directed at but not necessarily the cause of emotion. An angry person may act angrily towards his colleague, but his anger may be caused by something entirely irrelevant to his colleague.

Furthermore, having or experiencing an emotion is different from displaying it. It is not uncommon across cultures (or even within cultures) to suppress the expression of a particular emotion for various reasons. Lashing out your anger in front of your boss may not be a good idea even if you are infuriated by their unreasonable demands. It also seems to be a shared view that in order for a stimulus to evoke an emotional state, the stimulus needs to be relevant to the organism experiencing such a state in some way (Wharton et al. 2021). This echoes much of the research in cognitive science indicating that organisms have to devote their limited cognitive resources to the things that matter most, from basic survival needs to more complex assessments of goals or concerns. The question then becomes: how does a person (or an organism in general) evaluate the relevance of stimuli? To what extent does cognition interplay with emotions?

To find an answer, we can perhaps start by looking into the three major theories of emotion in contemporary affective science: Basic Emotion Theory (Ekman 1977, 1992b; Ekman and Cordaro 2011), the Psychological-Constructionist view (Barrett 2006, 2011; Russell 2003; Russell and Barrett 1999), and Appraisal Theory (Arnold 1960; Frijda 1986; Lazarus 1982; Roseman and Smith 2001). The first two contrast with each other sharply on the question of whether emotions are automatically triggered by responding to external events as a result of

[47] As Frijda (1986) noted, stimulus is a conventional word for antecedent events in which an emotional experience is elicited as emotions are rarely the results of an isolated or real stimulus. It is sometimes used interchangeably with 'event' or 'situation'.

biological inheritance, or whether they are constructed anew from more basic, 'core' emotional elements. Appraisal Theory accepts that the origin of emotions is to be found in evolution, and suggests that it also closely involves psychological processing of mental states. Like other animals, we are organisms evolved to solve adaptive problems. No one would seriously doubt the involvement of physiological factors in emotion elicitation and cognition in general. Meanwhile, our cross-cultural differences are not fundamental, because we invent and define words, rather than the other way around. This is exactly what makes Appraisal Theory more compatible with pragmatics theories such as relevance theory, as both of them acknowledge the universality of our mental world and that it may be influenced by the environment (i.e., contexts). Examining the main arguments of appraisal theory in a pragmatic context may help address some of the questions not yet fully explored, such as how emotional experience may play a role in reading poetic metaphors.

The first major affective theory, Basic Emotion Theory, proposes that there a number of separate emotions – or more precisely, emotion families consisting of related states that share certain characteristics – whose features and functions are the results of evolution to perform communicative functions (Ekman 1977, 1992b; Ekman and Cordaro 2011). There is an automatic appraisal system that selects which stimuli to attend to, leading to a quick and subconscious emotional response that reflects a person's mental state. Ekman suggests that at least some emotions are not cognitive because their underlying mechanism is biologically inherited, even if the stimuli for those emotions may vary across cultural groups and individuals. People may experience the emotion fear because of different reasons, but fear as a basic emotion is determined by the evolution of human beings.

Studies following this line of thought usually take the universality of facial expressions and the accuracy in identifying these facial expressions as providing direct evidence. For instance, a wrinkled nose and pulled down eyebrows are widely considered as displaying disgust, raised lips and cheeks and tightened muscles around eyes signal joy. Once an organised emotional response is patterned and stored, it will be automatically triggered by appropriate stimuli. We cannot control our physical and mental response in a life-threatening situation. This echoes some aspects of Fodor's (1983) modularity of mind by suggesting that some emotions are encapsulated and independent from other mental processes, but it faces the same problems identified by the massive modularity view.

Within affective science, Basic Emotion Theory has been challenged on several grounds. First, there is not yet an agreement as to how many emotions can be considered as basic, since 'basic' is a relative term and needs to be specified. The number of basic emotions in the literature ranges from six to about twenty or even more due to a lack of robust criteria (Ortony 2022). Empirical studies challenge the reliability of facial expression as indicators of emotions. Contra to Ekman's proposals, recent studies show cross-cultural differences in representing basic emotions via facial expressions. East Asian participants represent the six basic emotions with less distinct sets of facial muscles movement and much larger overlap between surprise, fear, disgust, and anger than Western Caucasian participants (Jack et al. 2012). People from different cultures also have distinct facial expressions to represent pain and pleasure (Chen et al. 2018). I am by no means saying that cultural factors determine what emotions we experience, but it seems that whatever universality human emotions possess, it might not be in the way as Basic Emotion Theory claims.

The psychological-Constructionist view takes a different approach to emotions. It argues that an emotional episode is constructed on-the-fly according to a perceptual-cognitive judgment to fit specific circumstances each time, rather than being determined by biological factors nor social rules (Russell 2003). This view has gained prominence among psychologists because it rejects the essential role given by Basic Emotion Theory to affective mechanisms, and treats emotions not as natural kinds but psychological constructions (Kurth 2019). Russell and Barrett (1999) propose the term *prototypical emotional episode* to refer to what are usually considered as clear cases of emotion. It is distinguished from and necessarily includes the constituent *core affects*, the most elementary neurophysiological states accessible to consciousness that may or may not be directed at an object. Core affects can be mapped onto a point in the Cartesian space formed by degrees of pleasantness and activation.[48] At this level, the subjective core affective feelings are universal and non-cognitive, but they guide cognitive processing by directing attention to their cause and the objects corresponding to such affective qualities (Russell 2003).

The perception of affective qualities, as Russell notes, can be independent from at least some cognitive processes. One can experience unpleasant emotions toward a spider shown on the TV knowing that it will not cause any real harm, or towards fear seeing the dentist even if the

[48] Not all combinations of these two dimensions are emotions (Russell and Barrett 1999). Experiences like fatigue, sleepiness, and placidity can be characterised in terms of different degrees of pleasantness and activation, but they are not categorised as emotions.

judgment of that activity is positively relevant to one's well-being. There is a prototype for each category of emotion such as fear, and an emotional episode is labelled as 'fear' when it is close enough to be considered as fear. The experience of this emotional episode arises when there is an immediate and significant change in core affect such as feeling great displeasure accompanied by high level of activation. In this way, emotions, or at least core affects, are pre-conceptual entities that exist by themselves and can be triggered by preceding appraisals and judgements.

Proponents of this approach also subscribe to the idea that core affects are contextualised by pan-cultural emotion-related vocabulary in natural languages such as 'I feel good', despite languages differ in specific descriptions of that emotion (Russell 1991, 2003; Wierzbicka 1999). Drawing from her work in psychology, Lisa Feldman Barrett (2006, 2011) suggests that emotions are not natural kinds but highly variable mental states. Emotions are assembled from two basic psychological processes: a psychological and biological system that produces variations of 'core affects', and a conceptual system consisting of what people know or assume about emotions. In this way, she argues, concepts and language play a central role in identifying which emotion a person is experiencing; hence cross-linguistic and cross-cultural variations are allowed. This is tantamount to saying that how people understand the meaning of emotion words or concepts is the key to understanding emotions themselves. Of course, Barrett acknowledges that even a strict constructionist view has to be grounded in nature, namely, bottom-up sensory information from the world and the body. She argues that such information, when combined with top-down conceptual processing, shapes a person's psychological environment to enable recognition and fine-tuning of an instance of emotion.

But can we really say that natural language expressions *cause,* even in part, the identification of emotions? Can we not simply experience emotions *per se* without labelling felt experience with folk concepts (namely, words in natural languages such as 'happiness' and 'anger')? Some studies challenge the implication that all emotions are conscious by suggesting the existence of unconscious emotions (Berridge and Winkielman 2003; Winkielman and Berridge 2004). From a linguistic perspective, a more serious problem is in fact rooted in the idea that established labels in a language ground emotion perception. According to a review by Ruba and Repacholi (2020), there is a rich literature showing that pre-verbal infants can differentiate facial expressions based on arousal/valence by the age of five months. By the age of seven months, infants can form distinct categories of positive and negative facial expressions and

map them onto corresponding vocal expressions. However, it remains unclear whether pre-verbal infants possess any conceptual knowledge of discrete emotions, that is, whether they understand what happiness or anger is. We do not really need to know the specific category of an emotion to respond to it accordingly. We feel emotions that have yet been properly named or categorised (e.g., the widely-recognised yet undefined emotion upon perceiving cuteness, or the 'cute emotion' (Buckley 2016)). There are emotions that are named in one language but not in the other (e.g., the Chinese term '*chou*' refers to a mild sadness mixed with anxiety, nostalgia, and depression in various contexts, without a perfect English equivalent), and their denotations and extensions may also vary. Literary texts provide many such examples where emotions are communicated in the absence of prior assumptions about those emotions. Entertaining a mental imagery, reconstructing a scenario based on memory, imagination, or empathy can also evoke a proper emotional experience without attributing it to any specific folk concept of that emotion.

The third major theory in modern affective science is Appraisal Theory. According to some researchers, it may be the most compatible one with a pragmatic theory (Wharton et al. 2021). Pioneered by Magda Arnold and Richard Lazarus, Appraisal Theory treats cognition as an intrinsic determinator in emotion. Emotions are recognised as automatically triggered not simply by external events, as claimed by Basic Emotion Theory, but by meaningful appraisals of the events, accompanied by physiological changes and the appropriate actions or action tendencies (Arnold 1960; Lazarus 1982; Lazarus et al. 1980; Roseman and Smith 2001). Different appraisal patterns differentiate emotions and also account for individual and temporal differences in emotional responses. In effect, the fact people experience different emotions towards the same event says more about what they make of that event at a given moment than about the event itself.

In the case of reading an excerpt of literary text, this model also explains why, when we re-read the same text, we sometimes have a different type of emotion, or an emotion with a different intensity from the initial one. It is because we appraise the situation in a different manner. Reading about losing a family member may evoke sadness of different intensity before and after we have such life experience. We are not recalling an emotion *per se* from memory; arguably, we do not store emotional experiences as entries in our memory. Instead, we are performing a new appraisal, which leads to a new emotional experience that may or may not be the same from the one we had earlier.

The appraisal process, as Arnold (1960) noted and has been endorsed by many later researchers, is immediate, undeliberate, influenced by memory, and one that we may or may not be aware of. Similarly, Lazarus (1982, 2001) comments that appraisals do not imply awareness or thought. He considers cognition as a necessary precondition of emotion, because an individual has to comprehend how a certain situation affects them either by primitive evaluation or higher-level processing (Lazarus 1982, 1984).[49] The first step in the elicitation of an emotional state is to assess its goal relevance – whether and how the situation affects one's well-being. That is to say, experiencing an emotion must go beyond mere physiological arousal because it necessarily involves a cognitive assessment of the state of affairs in relation to achieving one's goal. Frijda (1986) suggests that emotions encompass awareness of events that appear to be relevant, urgent, meaningful in terms of action readiness to change or maintain a certain relationship with the environment. This tradition puts rational thought at the centre of emotional experience, whether that thought is the result of conscious thinking or automatic information processing. Although the amygdala plays a crucial role in affective processing, it is not the only brain structure involved.

For cognitive scientists such as Leda Cosmides and John Tooby, emotions and cognition are importantly interlinked for evolutionary purposes. They put it like this (Cosmides and Tooby 2000: 97):

> [O]ne can define the 'mind' as a set of information-processing procedures (cognitive programmes) that are physically embodied in the neural circuitry of the brain. For cognitive scientists, 'brain' and 'mind' are terms that refer to the same system, which can be described in two complementary ways – either in terms of its neural properties (the neural) or in terms of its information processing operation (the mental). The mind is what the brain does, described in computational terms.

Under this view, an emotion is a superordinate cognitive programme whose function is to coordinate other sub-programmes, such as those responsible for sensation and perception, so that the organism can respond to adaptive problems properly and efficiently. Take fear as an

[49] Within appraisal theory, there is a decade-long intensive debate on the primacy of cognition and emotion and if they are under the control of separate systems. Zajonc (1980) opposes the views that emotion is post-cognitive and inseparable from cognition, and he argues that emotional responses can occur before (or without) complex cognitive processing. Due to the limitation of this section, I will not delve deeper into the actual debate.

example. This emotion is certainly accompanied by physiological changes and the activation of behaviour tendencies as described by empirical data. But it also does much more. Fear activates or modifies sub-programmes responsible for detecting signals and shifting attention, making the individual more likely to notice a potential danger. Fear also changes how goals and motivations are weighted, so that safety prioritises over all other goals. Furthermore, the individual is prompted to search and process information in specific ways to derive more relevant inferences such as where to take shelter, while relevant previous experience of taking shelter is also activated. Communication processes also change in response to potential danger, leading to behaviours such as crying out for help or being unable to speak. The conclusion is that emotion cannot be characterised by any single effect, but is, rather, a combination of all relevant effects.

It also provides support for the massive modularity hypothesis (see also Sperber 2001, 2005), which proposes that the central processing system has access to all information available at the moment, but it will only attend to the most relevant information to maximise cognitive efficiency. In a situation in which a person is scared, he still has a wide variety of information at his disposal, but he will only attend to what is most relevant to his goal of getting out of potential danger. This selected attention is the result of the current appraisal pattern. Emotions function as regulating mechanisms in the sense that they indicate the direction of cognitive processing.

Rooted in online cognitive processing, emotional responses may be under the influence of many contextual and subtle cues. Appraisals in part can also be an outcome and an aspect of emotions. Memory, for one thing, plays an important role in appraising a situation (Arnold 1960; Lazarus 2001), other factors including personality variables, goals, and emotional response dispositions that one is inclined to have at the moment (Frijda 1986; Frijda and Zeelenberg 2001). Appraisals may also be influenced both qualitatively and quantitatively on a larger scale from systematic cultural-specific differences (Mesquita and Ellsworth 2001; Scherer 1997; Scherer and Brosch 2009). For example, in an experiment involving participants from 37 countries and regions, some emotions such as joy, anger and sadness appears to be characterised in highly similar manner, while the characterisations of emotions such as disgust and shame may vary dramatically (Scherer 1997). Appraisal theory argues that a common appraising pattern will elicit the same emotion regardless of the individual's cultural background, although it allows for exceptions (Ellsworth 1994; Scherer 1997; Scherer and

Brosch 2009). Cross-cultural variations in emotional experience of the same situation are the result of different appraisals. In other words, universality is found in the appraisal-emotion relation rather than in specific emotions or emotional antecedents as Ekman's basic emotions theory suggests. Scherer (1997) interprets his experimental data as supporting the existence of both universality and cultural specificity in emotion processes, and the observed variations can be accounted for by how clear the articulation of an appraisal is. Producing or rewarding a certain appraisal bias increases the readiness of experiencing the associated emotion (Scherer and Brosch 2009). If solitude is not considered preferable in a culture, then people from that culture are more likely to appraise being alone as negative, increasing the saliency of negative emotions. As a result, these negative emotions are more readily or frequently experienced.

Mesquita and Ellsworth (2001) comment that words for the same emotion used in different languages might not refer to the same emotional experience. If this is true, then what contributes to cultural variations is not so much the mechanism for evoking an emotional experience, but the connotation given to that experience by adopting a specific term. This is different to Barrett's (2006, 2011) theory of constructed emotion, according to which emotion concepts from one's culture are one of the two necessary psychological primitives to instantiate an emotional experience. Instead, following the appraisal processes, people experience emotions as the result of evaluating events that cause certain reactions. Linguistic and cultural differences account for the saliency of people interpreting what they feel in a certain way (e.g., loneliness is usually considered as a negative emotion), but they do not predate and are not part of the cause of that emotion. A person does not need to have prior linguistic nor cultural knowledge about loneliness to feel lonely.

Furthermore, if such subtle differences in emotion experience are systematically structured, they are likely to be reflected in expressions that are associated with that experience as well. An example would be the tradition in Classical Chinese literature of selecting from a limited range of metaphors that are 'conventional and highly codified' (Reding 2016: 132) to elicit particular types of non-propositional effects, including affective ones. Note that literature at that time was generally written for a small proportion of the population who at least had some

forms of education on cultural-specific beliefs and value systems.[50] On a global scale, for most of the time that writing systems have been around, the ability to read, let alone to understand the fine-grained meaning communicated via words, was something only a small group of people could possess. This preference in selecting metaphors and other expressions alike on the one hand specifies the set of information that is relevant or more relevant to the reader, enabling the writer to communicate their intended propositional content. On the other hand, subtle differences in previous experience, goal and other relevant factors allows for personal emotional experience to be evoked even when the general interpretation remains more or less unchallenged. As I suggest in the next chapter, mental imagery may also play a part in this process.

5.3.2 Relevance of emotion in verbal communication

Few people would doubt that the communication of emotions often happens alongside verbal communication, and the affective dimension of such communicative behaviour is difficult, if not impossible, to be paraphrased into a proposition. Consider the following examples:

(56) That *bastard* just stole all my money!
(57) That thief just stole all my money!
(58) Daddy, daddy, you *bastard*, ''m through. (Sylvia Plath, 'Daddy')
(59) Daddy, daddy, I'm through.
(60) Bastard!

The word 'bastard' in the utterances in (56) and (58) does not add any new propositional meaning to the propositions already communicated by the utterances in (57) and (59). However, it should be clear that the utterances in (56) and (58) do not communicate exactly the same thing as their counterparts for several reasons. First, <bastard> is not an equivalent to either <thief> or <daddy>. It refers to a particular individual by foregrounding some characteristics

[50] Schools for aristocratic children had existed from eleventh century B.C., if not earlier, and formal education together with the imperial examination system had created and reinforced a culturally privileged class (Lee 2000). There was no official census of literacy until Qing dynasty (1636-1912). Rawski's (1979) examination of historical data suggests that around mid- and late nineteenth century China, 30 to 45 percent of the men and 2 to 10 percent of the women in China could read and write. However, this group include both fully educated elite members and those who only knew a few hundred characters that would be sufficient for daily life. That is to say, without proper training, merely the ability to read does not guarantee a person's mastery of the fine details of a literary work.

of that individual without stating explicitly what those characteristics are. Second, 'bastard' communicates something beyond the encoded meaning of the word itself. This is even more prominent in the case of (60), where the use of a single word also communicates certain emotions or affective states along with the conceptual knowledge about BASTARD*. Utterances like these express affective states directly and explicitly. Even though it is difficult to pin down what those states are – it can be anger, despise, even hatred – a competent user of English would usually have no trouble recognising that some strong emotions are expressed. In other word, the use of <bastard> expresses emotions, rather than describing nor identifying them. It communicates descriptively ineffable contents that are irreducible to a set of propositions.

For clarity, I am using the term 'emotion' in the sense discussed by Appraisal Theory, by which emotions are the result of meaningful appraisals of the events. They are accompanied by physiological changes, and call for appropriate actions or action tendencies (Arnold 1960; Lazarus 1982; Lazarus et al. 1980; Roseman and Smith 2001). Georges Rey (1980) also remarks that emotions are distinguished from feelings and sensations because emotions have a cognitive, as well as qualitative and physiological dimensions. The experience of anger, for example, requires a cognitive processing, even though it does not imply awareness (Lazarus 1982, 2001; see, however, Zajonc 1980 for an opposing view). The body undergoes certain physiological processes that, when combined with a qualitative inner feeling of pleasure and the belief that something provocative has happened, render a proper emotional state of anger.

Cognitive science has suggested that emotions may modify our communicative behaviours and information processes in response to adaptive problems (Cosmides and Tooby 2000), and a similar pattern can be observed in daily verbal communication as well. Wharton and Strey (2019) proposed *emotional effects*, later re-named *affective effects* (Saussure and Wharton 2020, 2023), which arise from emotional states and guides the search for relevant information worth our attention. According to this proposal, emotion involves the interplay of perception and cognition, and it occurs at a pre-conceptual level. This level is associated with what Rey (1980) calls 'qualia', which is about making an emotional state salient enough to be recognised. Having a feeling of an emotion is different from identifying what that emotion is. The latter scenario involves assigning an epistemic state or a representation to the emotion, hence it can be characterised in the same way as how traditional relevance theory describes impression. The former is not about propositions and cannot be disbelieved. Nonetheless, simply having a feeling can modify our mental world affectively, guiding our search for what is relevant, except

that relevance in this sense cannot be gauged just based on cognitive effects. As Wharton and de Saussure (2023) argue, cognitive effects need to be supplemented by the type of mental processing that is best described as 'changes in patterns of activation' (Sperber and Wilson 2015: 139).

How are emotions relevant in verbal communication? One possible explanation is that they achieve relevance by directing our attention towards or away from a particular direction, constraining context construction and selection, hence playing an active role in influencing how comprehension is administrated (Piskorska 2012; Wharton and de Saussure 2023; Wharton and Strey 2019). The following example illustrates how affective states may modify the interpretive path from the hearer's perspective (modified from Piskorska (2012: 107-108)):

(61) [Inez is trying to tidy up the dining room before guests come when Greg comes in and says] I've put the white wine in the fridge.

Piskorska suggests that if Inez is already angry about the terrible mess in the dining room, she is likely to pay attention to the following 'hostile' implicated premises that enhance her negative disposition towards the situation (Piskorska 2012: 108):

(a) Putting wine in the fridge is essential.
(b) Cleaning the dining room is not essential.
(c) It is important to do essential things when there is little time.
(d) There is little time.
(e) One who does unnecessary things wastes time.

Following this path, Inez would interpret Greg's utterance as blaming her for not doing the most important thing, hence drawing an implicated conclusion about the Greg's negative affective attitudes. More importantly, the speaker may communicate at the same time another set of 'friendly' implicatures which would lead to an equally plausible conclusion that he has contributed to the housework. However, since the hearer is angry, the 'hostile' premises are more prominent to her, giving rise to a favour of the negative conclusion. This means that Inez's interpretation is still consistent with the Principle of Relevance. In this example, emotions determine which context the hearer will choose in order to achieve optimal relevance.

Following this hypothesis, we can conclude that emotions are involved in regulating verbal communication as early as in the 'input' stage of pragmatic processing.

Reading literature is one way to generate positive affective effects in the readers. These effects arise not based on assumptions at our disposal, as in the case of cognitive effects, but based on existing psychological states, which are the results of previous experience and some degree of imagination (Wharton and de Saussure 2023). A piece of literature is processed not only in terms of how many implicatures can be drawn, but with regards to how affectively relevant it is to the reader's personal history. Wharton and de Saussure (2023) continue to argue, the act of imagination can further prompt more subtle emotions. The reader is 'experiencing' what he imagines, or a simulation (of the world), so that he may have direct, *in situ* emotional responses, encouraging changes in his conceptual world.[51]

I would add that some cases of creative language use, such as poetic metaphors, may involve very similar mechanism. The non-propositional effects are not simply 'triggered' by the metaphor, they also feed back into comprehension by providing basis for the selection of what may be taken as the context. The speaker is not just expressing her own affective state; she also intentionally constructs the text in a way that would facilitate the reader to focus on certain aspects of her utterance, from which specific affective states may be generated. When combined with the hearer's memories and encyclopaedic knowledge, this affective state further facilitates an overall experience that is to be taken as what the speaker intends the hearer to obtain from that utterance. I call this the *intended content*, which includes but is not limited to the intended import, 'the overtly intended cognitive effect of a communicative act' (Sperber and Wilson 2015: 122).

This means affective effects arise before or at least alongside cognitive effects, prompting further conceptual processing to better derive cognitive effects (de Saussure and Wharton 2020). Consider the following lines from the poem 'Boot Theory' by Richard Siken (2005: 21):

(62) A man takes his sadness down to the river and throws it in the river

[51] These changes may occur on previously held attitudes, beliefs and dispositions, ways of conceptualising (aspects of) the state of affairs, and mental processes that would affect how a person relate to other members of a society, in particular, empathy (including narrative empathy, which can be directed to fictional characters). There has been a rich literature on how reading literary texts influences our navigation in a society (e.g., Keen 2006; Oatley and Djikic 2018; Pozner 2022; Preston and De Waal 2002).

but then he's still left
with the river. A man takes his sadness and throws it away
but then he's still left with his hands.

A competent reader would be able to identify the writer's intention to convey the emotion sadness, and an epistemic state that sadness does not disappear or that there is always something that reminds us of sadness. This is achieved following the ostensive-inferential model. Meanwhile, the metaphorical expressions facilitate the construction of an affective experience in which the reader may exhibit emotional reactions when entertaining the scene described here. As de Saussure (2021) argues, the search for writer-intended meaning only happens at the objective-propositional level, but whatever feeling or affective response follows is reader-initiated. The reading of the line in (62) thus involves two dimensions: a propositional dimension where the reader comprehends the intended meaning (e.g., sadness will not easily go away) alongside the conceptual knowledge of the communicated affective attitudes (e.g., sadness), and a non-propositional dimension where the reader shows affective response directed at the experiential simulation and its interplay with his previous affective experience of sadness.

There is a good reason to question the characterisation of metaphor reading within the traditional linear view of literature, namely, the reader 'unpacks' what the writer offers and recovers the writer's intended imports. Instead, it is perhaps more reasonable to adopt a synchronous view where the reader is encouraged to modify their understanding of the world using what the writer provides, and to use this modified understanding to aid his comprehension of the text. He may simulate the writer's psychological states; he may also add in what he feels since this kind of simulation cannot be precise and accurate. Note that the *ad hoc* concept is not involved in this dimension, because a lexical adjustment is not necessary if the reader is simply constructing a simulated scenario of standing by the river and tossing something away. He is not entertaining a full-fledged concept of sadness but the qualia of sadness. It is this direct phenomenal/affective experience, rather than the recovered propositional attitudes, that helps select and constrain context in which optimal relevance is to be obtained.

This thesis proposes that another possible way to approach the effects achieved by the line in (62) may be to entertain a mental image. Of course, the notion itself needs to be further

explained, which will be dealt with in the next chapter. The basic idea is that, when reading this excerpt, the reader may also construct a series of images such as #river#, #throw something away#, and #something remains#. These images are not necessarily, and indeed they rarely are, concrete and detailed. However, they are connected to the reader's previous experiences involving RIVER, THROW, REMAIN. By entertaining these images, the reader also accesses the non-propositional aspects of those experiences that is not part of what the *ad hoc* concepts RIVER*, THROW*, and REMAIN* encode. This set of information enables the reader to 'transfer' and 'anchor' his existing psychological states to the reading process.

The idea is that the mental image facilitates a parallel processing route through which emotions, feelings, and various kinds of perceptual experience may contribute to comprehension by directing the hearer's attention to specific aspects of the utterance or by making some assumptions more relevant than others, thus they constrain and manipulate the processing of conceptual representations. This is not to say that comprehension *must* involve this parallel processing route, nor does it claim that a complete image is necessary for emotions, feelings, and impressions to be communicated. What it suggests is that verbal communication and comprehension, especially in more creative cases, may go well beyond the scope of ostensive-inferential model in standard relevance theory, and certainly beyond that of Fodor's (1975) Computational Theory of Mind. Research attention has been predominantly focused on meaning explained in terms of semantic and logical relations. As a result, most of the current approaches to utterance processing, including the standard relevance theory, regard propositional meaning as the bedrock for a solid pragmatic theory about communication. For reasons discussed in this and the previous chapters, many of what the speaker communicate do not seem to fit into a truth-condition-based framework. Sperber and Wilson (2015: 149) give a beautiful analogy:

> Like the proverbial drunkard in the night looking for his glasses under the lamppost not because of any strong reason to believe that they were there, but because at least he could see there, students of language have stayed close to the lampposts of semantics and logic. The drunkard's strategy need not be irrational. But after a while ... especially if there are glimmers of light around.

A pragmatic theory may be many things to many people, and there has been an ongoing discussion about the scope of pragmatics, or whether a pragmatic theory is even possible (see

Wilson (2024) for a review on this topic). Fodor (1983) famously remarks that the global processing in what he calls the 'central' system will remain mostly mysterious to scientific examination. Since pragmatic processes are usually considered global rather than local, it is simply impossible to account for everything that happens or may happen anywhere in the cognitive system. Relevance theory proposes a solution to the drunkard's problem and demonstrates that a pragmatic theory is possible. This thesis is part of an increasing group of research which advocates for the broadening of the domain of pragmatics. The non-propositional effects show that much of what is communicated cannot be reduced to propositions, and literature sometimes are more about sharing an experience, leaning towards showing and away from meaning$_{NN}$. Wilson and Carston (2019) have mentioned that the conscious mental images people report to experience may be considered in relation to the kind of 'simulations' described by grounded cognition (e.g., Barsalou 1999, 2008, 2009), but they also acknowledge that it is unclear how exactly can inference operate on simulations. This thesis sees this as a promising direction, and argues for a stronger stance.

5.4 Summary

This chapter, following the discussion in Chapter Four, foregrounded the idea that metaphor comprehension and verbal communication in general necessarily involve processing both propositional and non-propositional information. What is called the non-propositional effects – impressions, the descriptively ineffable entities, and poetic effects – may contribute to a larger extent in the search of optimal relevance than relevance theory has considered. A competent pragmatic theory can and should be able to account for this aspect. To do so, we need to examine the dynamic interactions between the conceptual and procedural dimensions. As has been illustrated with examples of expressive communication and more creative use of language such as metaphor and repetition, propositional information only account for what we *think* about an utterance, while non-propositional information accounts for how we *feel* about it.

Affective science has offered some informative insights into what emotions are and how we experience them. This provides a connecting point to pragmatic theories that also take into consideration the role emotions play in daily communication. Among the three major theories in modern affective science, Appraisal Theory seems to have the best compatibility with relevance theory, because both of them highlight the crucial role of relevance in cognition. We

feel a certain emotion, either in everyday contexts or while reading a piece of literature, because we appraise the situation in a way that is most relevant to us at that moment, and this leads to the elicitation of a certain emotion. We do not store individual kinds of emotions; instead, we appraise situations following different appraisal patterns, which lead to different emotions. This means that we feel something when reading a piece of literature because of what we make of it and how it is relevant to our personal history.

Although researchers in pragmatics generally would not reject the involvement of emotions in verbal communication, many of them see emotions as by-products or at most playing a peripheral role in communication. The standard relevance-theoretic model envisages impressions as achieved by making manifest an array of weak implicature (Sperber and Wilson 1986/1995, 2015), hence its effects is a set of propositions of various degrees of determinacy. Emotions may follow when an impression is shared. By doing so, they are trying to incorporate impression into a fully propositional framework. Similarly, in the case of mental imagery, Wilson and Carston (2019) acknowledge that although the kind of mental imagery that people often report to experience is phenomenologically salient, it is not yet clear how it is related to the sensorimotor activity prevalent in language processing. Since the empirical data they cited shows that some creative metaphors do take longer to process and they do activate areas of the brain associated with sensorimotor activation, their hypothesis is that the extra time and cognitive effort are spent on 'the conscious grasp and manipulation of mental images' (Wilson and Carston 2019: 36). Once formed, the mental image will help increase the manifestness of weakly communicated implicatures so that optimal relevance of the utterance or text is achieved.

I agree that mental imagery as defined in their work does activate a pragmatic processing, but that is only part of a broader process of communication. As cognitive science has informed us, emotions form an integral part of our mental life. It would be an understatement to say that emotions are merely the 'outputs' of cognitive processing. Recent development in relevance theory incorporates emotions into the scope of current pragmatic framework. This encourages a re-examination on mental imagery to re-evaluate its potential role in creative cases of language use. Towards the end of this chapter, I proposed that mental images may also facilitate comprehension by directing the hearer's attention to certain aspect(s) of the utterance. The premise, however, is that we need to have a better understanding of what mental imagery is and what it entails.

For those who work on the relation between perceptual experience and cognition, mental imagery is an umbrella term for the kind of quasi-perceptual experience a person may entertain in the absence of external stimuli. Literary studies also make frequent use of the term imagery to refer to language use that appeals to the reader's senses. However, despite decades of debates, there is yet no agreement on how a mental image really works. In the next chapter, I will explore this topic and elaborate on what makes a 'mental image'. I will also introduce notion of 象 *xiang* from Classical Chinese philosophy. This is perhaps the closest equivalent to 'imagery' in English. Despite its wide adoption, *xiang* itself is a very vague notion that still baffles modern philosophers, linguists and literary critics. I hope the introduction of this notion might shed some light on the parallel processing of propositional and non-propositional representations, especially in creative contexts such as poetic metaphors.

Chapter Six: Mental imagery in a 'dual-route' processing

> It has been found again!
> What? Eternity.
> It's the sea mingled
> with the sun.
>
> Rimbaud (2003: 33)

6.1 Introduction

It is widely claimed that our daily experience of metaphor is often accompanied by what is known as mental imagery. For example, in the above excerpt from the poem 'A Season in Hell' by the French poet Arthur Rimbaud, the reader may 'see in his mind's eye' a quasi-visual image of the sun merging with the sea and creating a glowing blur. He is unlikely to 'see' fine details in the image, but that does not really matter. What makes this image interesting and relevant is that it enhances the reader's overall reading experience. The reader not only understands the meaning of these lines, but 'sees' or 'feels' something inherently non-propositional, as described in Chapters Four and Five. One way to look at mental imagery is to consider it as a kind of mental representation that, under certain circumstances, leads to a quasi-perceptual experience. After all, it shares many similarities with perception but, unlike perception, it is triggered without external stimulation. Mental imagery is never presented as real pictures in our mind, nor does it even need to be consciously experienced. It can also be associated with other sensory modalities apart from visual, although visual mental imagery is the kind we usually mean when we talk about having a mental image when reading metaphors or literature in general.

The interest in mental imagery in the 'Western' traditions can be traced back to early Greek philosophers such as Aristotle.[52] The Latin term *phantasma*, derived from the Greek word φάντασμα, is usually translated as 'mental imagery', and refers to something that is not only analogous to objects or events in the world but also involved in perception, impression, and motivation (Thomas 2021). At the same time, many Ancient Chinese philosophers and literary

[52] As mentioned in Chapter One, the distinction between 'Western' and 'Eastern' traditions is very crude and remains a controversial topic. In this thesis, I am using these two words solely for the convenience to differentiate the approaches derived from Classical Greek philosophy from those rooted in Classical Chinese philosophy.

critics considered imagery to be situated somewhere between our representation of the world and other mental activities such as emotions and interpretations (Zhang 2019). For the Scottish empiricist David Hume (1740/2009), the only difference between percepts and mental images – or in his terms, between 'impressions' and 'ideas' – was the degree of strength or intensity with which they 'strike' on our minds. In modifying the Humean view, Nigel Thomas (1997, 2014) proposes a continuum along which mental imagery is positioned at one end, with ordinary perception at the other end, with aspects of imagination filling the gap in between. Critics argue that mental imagery does not inform us about the world, so much so that '[t]he "imagination-picture" does not enter the language-game in the place where one would like to surmise its presence' (Wittgenstein 1967: §636). The vivid quasi-perceptual experience brought by a mental image is only a relation which directs out attention to the object being perceived (Sartre 2010). Therefore, mental imagery does not contribute to the derivation of new information because whatever it contains is present *a priori* in the mind.

From pre-scientific theories to modern philosophy, comments and treatments on mental imagery have touched upon characteristics and functions that are of interest to modern psychology and cognitive science. However, it was not until the cognitive revolution of the 1950s that research into mental imagery obtained concrete empirical evidence. Since that time, there has been a long debate in cognitive science about the nature and mechanisms of mental imagery. The so-called 'analogous' view claims that mental imagery is quasi-perceptual, bearing the spatial properties as in proper perceptual experience but tied to abstract and propositional deep representations in long-term memory (Kosslyn 1980, 1981; Kosslyn and Pomerantz 1981). The 'propositional' view argues the opposite. According to this view, we can only process mental imagery if they are formed of structured, sentence-like descriptions stored in memory (Pylyshyn 1973, 1981). Although this debate remains unresolved, it brings into focus how a treatment of mental imagery can fit into the larger framework of computational theory of mind. As far as this thesis is concerned, it contributes to the discussion on how and to what extent mental imagery is involved in cases of verbal communication which are usually considered as novel and poetic.

Drawing from both empirical and theoretical research in modern psychology and cognitive sciences, this chapter focuses on the concept of mental imagery and how it may be involved in a dual-route processing of poetic metaphors. In Section 6.2, I start with an examination of what

I take to be the four main dimensions of mental imagery, in order to highlight a working definition that further discussion can be based on.

Section 6.3 introduces the Classical Chinese concept of 象 *xiang.* This character has several meanings, but the one relevant to our discussion is usually translated into English as 'imagery'. This has had a major influence on the composition and appreciation of Classical Chinese literature. The purpose of this presentation is to show that the Classical Chinese view of imagery exhibits some parallels with our current understandings, but at the same time this holistic approach also suffers from some major problems.

In Section 6.4, I suggest that mental imagery contributes to the procedural processing route, which may be more direct and cost less in processing terms than the parallel conceptual route. It 'points to' aspects that the speaker intends her hearer to pay attention (or more attention) to in order to achieve the expected non-propositional effects. For this reason, the effects raised by entertaining mental imagery should be treated as speaker intended, and not entirely outside the realm of pragmatics as many previous studies propose. I conclude this chapter with a summary of main arguments in Section 6.5.

6.2 Mental imagery and cognitive operations

6.2.1 What mental imagery is and what it is not

Despite its wide adoption as a concept in modern psychology, cognitive science and philosophy of mind, it is very difficult to say precisely what mental imagery is and what it is not. This problem is caused by a confusion as to the characteristics of mental imagery. There are many attempts to define mental imagery, especially in empirical sciences. The following two definitions highlight some important characteristics of mental imagery that are discussed in their experiments, and are also generally agreed upon among researchers in relevant fields of studies. One provided by Kosslyn et al. (1995: 1335) differentiates mental imagery from pure perception:

> Visual mental imagery is 'seeing' in the absence of the appropriate immediate sensory input, auditory mental imagery is 'hearing' in the absence of the immediate sensory

> input, and so on. Imagery is distinct from perception, which is the registration of physically present stimuli.

A more recent definition from Pearson et al. (2015: 590) defines mental imagery as:

> […] representations and the accompanying experience of sensory information without a direct external stimulus. Such representations are recalled from memory and lead one to re-experience a version of the original stimulus or some novel combination of stimuli'.

Definitions like these two may be good enough for the sake of their research, but perhaps the easiest way to introduce the concept of mental imagery is to ask people to close their eyes and imagine an object or a scene, say, a ball on a desk. This points to the dilemma that it is even unclear whether introducing the term 'mental imagery' would be helpful at all, because our experience of it is highly subjective (sometimes even 'absent', or at least unconscious in cases of aphantasia), and such an experience can hardly be exhausted by resorting to ordinary language (Nanay 2021c). It is perhaps more helpful to examine how the concept of mental imagery may be used to explain various phenomena observed in psychology, neuroscience and philosophy, rather than simply analysing mental imagery as a term in ordinary language. For this reason, I will not attempt to provide a comprehensive definition to solve this dilemma; instead, I will focus on analysing the four key dimensions with which we may arrive at a better understanding of the nature of mental imagery. These four dimensions are summarised from literature in empirical sciences and philosophy during the past few decades, and they are listed in Table 1 below.

1. Processing mechanism	Mental imagery involves a kind of 'perceptual' information processing similar to that involved in perception, but the result of this processing is not a picture or an exact copy.
2. Construction	Mental imagery can be constructed and recalled without direct stimulation from sensory input.

3. Experience	a. Mental imagery can be voluntarily or involuntarily constructed, and it does not necessarily involve a feeling of presence.
	b. Mental imagery can be conscious or unconscious.
4. Nature	Mental imagery is better seen as a kind of mental representation rather than a kind of experience.

Table 1: Four dimensions of the notion of 'mental imagery'

Dimension 1: Mental imagery involves a kind of 'perceptual' information processing similar to that involved in perception, but the result of this processing is not a picture or an exact copy.

The English language has a ready supply of expressions to describe mental imagery – 'to see through one's mind's eye', 'to imagine', 'to picture', 'to have a mental image in mind', etc. Other natural languages have their own idiomatic expressions. It is relatively easy to discuss the experience of such images in the visual modality, which is also what most people would have in mind when they make use of those expressions in their everyday vocabulary. However, having a visual mental imagery does not necessarily imply visualisation as an active, intentional act, let alone having a complete picture in the mind. I will come back to visualising later. For now, I want to point out that a visual mental image is fundamentally different from what Rey (1981) calls the *X-depicting image*, a particular kind of representation on which our daily experience of pictures is based. An X-depicting image inherits some visual properties of that which it depicts, and the referent is a necessary condition for its corresponding X-depicting image. Therefore, a picture of a certain cat must exhibit at least some visual properties of that cat to be consider not only as a picture cat but also a particular cat. By contrast, mental imagery does not represent in the same way as X-depicting imagery, and nor is having visual properties or perceptual properties in general a necessary condition for mental imagery. We rarely construct a mental image that contains enough details to be considered as a facsimile of a picture. When I say I have a mental image of sitting on the beach, I do not necessarily 'see' what the surrounding environment looks like. Even for the same person, the vividness – or more accurately, the determinacy – of the imagery will vary across contexts. In short, my mental image of the beach lacks the kind of details that are necessary for a picture of the beach.

The result of perceptual information processing does not need to be visual at all either. The equivalent of visual mental imagery in other sense modalities are auditory, tactile or olfactory mental imagery (Nanay 2015b). From the experience of remembering the tune of a song, to expressions like 'the wind howled' (auditory) or 'the crack of the twigs under my boots' (tactile), non-visual mental imagery is very common in everyday conversation and literature alike. For those who are familiar with Classical Chinese poetry, here is a piece that is often praised to be a masterpiece of generating various kinds of mental imagery as the poet gives a detailed description of the performance of a pipa player ('Ballad of the Pipa', by Bai Juyi, cited in Fuller 2020: 284-285):

> The large strings drummed like hard rain.
> The small strings chirruped like a private conversation.
> Drumming and chirruping mixed as she played:
> Large pearls, small pears falling onto a jade platter.
> The warbler's softly turning voice flowed smoothly under the blossoms.
> The hidden sobs of springs and rills barely moved beneath the ice.
> Icy springs congealed with cold, the string seemed to end.
> Seeming to end, unable to go on, the sound for a while ceased.
> There was a new sense of inward grief: a hidden regret took shape.
> At this time, there being no sound was better than having sound.
> A silver vase suddenly breaks; liquid pours forth.
> Iron-clad horsemen rush out; knives and spears sing.
> The tune ends; taking the plectrum, she strikes across the middle:
> Four strings, in on sound, like the ripping of silk.
> 大弦嘈嘈如急雨 小弦切切如私语
> 嘈嘈切切错杂弹 大珠小珠落玉盘
> 间关莺语花底滑 幽咽泉流冰下难
> 冰泉冷涩弦凝绝 凝绝不通声暂歇
> 别有幽愁暗恨生 此时无声胜有声
> 银瓶乍破水浆迸 铁剂突出刀枪鸣
> 曲终收拨当心画 四弦一声如裂帛

In English, mental imagery constructed in sensory modalities other than the visual modality is usually referred to as 'imagining', but it nonetheless falls within the scope of the umbrella term 'mental imagery'. An alternative term to capture this characteristic while trying to avoid misunderstanding is quasi-sensory or quasi-perceptual experience (Finke 1989/1993; Richardson 1969), although as will be discussed later, this term can also be problematic. The consideration is that mental imagery has certain characteristics of perception, but it is not perception *par excellence*. Furthermore, mental imagery is also fundamentally different from pictures in format. We do not store pictures in our mind that can be retrieved later, and science has not yet identified sensory organs in the brain responsible for constructing such pictures.

Dimension 2: Mental imagery can be constructed and recalled without direct stimulation from sensory input.

Mental imagery is not triggered by direct stimulation from corresponding sensory input, and it can be recalled or reconstructed in the absence of sensory stimuli. Having a visual mental image is not necessarily triggered by seeing the object or the event that mental image represents, neither is perception necessary for having a mental image, as in the case of dreaming. This characteristic is further supported by studies in which neuroimaging shows that early cortical perceptual processing may happen even without stimulation in the relevant sense modality. For example, for visual mental imagery, neurons sensitive to corresponding visual properties on the primary visual cortex will fire even when the retina receives no such sensory input (Viera and Nanay 2020).

The construction of mental imagery may not rely solely upon visual details, either. Congenitally blind people are able to perform relation-reasoning tasks without the aid of mental images containing visual details, and – in contrast with sighted and blindfolded sighted participants – can construct spatial representations without being distracted by irrelevant visual details (Knauff and May 2006). Another study showed that while some aspects of mental imagery indeed involved visual experience, others might be evoked by interaction between multiple modalities, even in the case of congenitally blind people (Arditi et al. 1988). They could develop and demonstrate a haptic or audio style of mental imagery (Vanlierde and Wanet-Defalque 2005).

Dimension 3a: Mental imagery can be voluntarily or involuntarily constructed, and it does not necessarily involve a feeling of presence.

Mental imagery may or may not be voluntary, nor does it necessarily involve a feeling of the presence of the object(s) in that mental image (Nanay 2021b). Closing my eyes and visualising myself sitting on the beach is an example of voluntary visual mental imagery. I decide when to have that mental image, and I can manipulate what it 'looks like': whether it is a bustling sandy beach on the sunny Mediterranean Sea or a deserted pebble-beach on the stormy Atlantic Ocean. However, I will not actually feel the sea breeze on my face when I have a mental image of myself sitting on the beach and nor, while I know I am now sitting in front of my laptop, would I try to grab some sand. This does not mean mental imagery is *prima facie* disassociated from a feeling of presence. Examples of mental imagery accompanied by such a feeling include illusions where the distorted senses 'trick' the experiencer into thinking an object is positioned in front of them, or the lucid dreams where the dreamer is aware that they are dreaming or even gain certain control over their dreams. Meanwhile, involuntary mental imagery is equally common. Unwanted past-oriented or future-oriented intrusive imagery, earworms caused by songs put on repeat, or the fever dreams that have been described by authors and poets are examples of such kind.

Dimension 3b: Mental imagery can be conscious or unconscious.

The very idea that mental images may be unconscious may raise some eyebrows, especially among philosophers who believe that in order to have a representation that can be called a mental image, the person must first be aware of having it (Richardson 1969). This, however, may not necessarily be accurate. It is generally observed and acknowledged that some people do not 'see' things with their 'mind's eye' (or 'smell' or 'hear' things in a similar manner), but what they report to have never experienced is in fact conscious mental imagery (Zeman et al. 2010). This does not eliminate the possibility that they still have some sort of perceptual processing similar to that happens during perception. There are some arguments and evidence in favour of this unconscious view.

Pearson et al.'s definition implies that mental imagery may or may not be conscious, because mental representation may or may not be conscious (Church 2008; Ehrenzweig 1962; Nanay 2021b; Sullivan-Bissett 2019). When we use this term in everyday conversation, in most cases

we are referring to conscious mental imagery, namely, one that we know to be constructed or recalled by ourselves. My mental image of me sitting on the beach is one of such kind. In the Kosslyn et al. definition, given that perception (i.e., perceptual processing with direct stimuli) may be unconscious (Baars and Gage 2010), we may hypothesise that mental imagery (i.e., perceptual processing without direct stimuli, or the 'seeing' and 'hearing') may also be unconscious. This leads to a potential broadening of more classical definitions, namely, to see mental imagery as a broad category of quasi-perceptual representation.

There are some empirical data that support this proposal. To start with, conscious mental imagery can prime behaviour patterns in studies using binocular rivalry tests (Keogh and Pearson 2011; Pearson et al. 2008; Sherwood and Pearson 2010). In these tests, different stimuli were presented to two eyes. For example, an image of red vertical lines was presented to the right eye and an image of green horizontal lines to the left eye. Visualising red vertical lines before the binocular rivalry test would make the right eye more likely to win out. In Kwok et al. (2019), the binocular rivalry patterns of participants were primed by conscious and unconscious mental images alike, and the control condition ruled out non-sensory processes such as linguistic representation of the object of mental imagery.

Unconscious mental imagery is also thought to play a role in implicit bias, which goes against reported beliefs and attitudes without full awareness (Nanay 2021a; Sullivan-Bissett 2019). In their examinations, Nanny and Sullivan-Bissett reported that neither established associations (both with imagistic imagining and with negative valence) nor propositional attitudes fully explained implicit bias. By contrast, involuntary, unconscious imagery that was 'affectively charged and action-oriented' (Nanay 2021a: 336) could produce cognitive and affective experiences that were both sensitive to the content of a biased assumption and insensitive to its logical form.

Furthermore, perception and the experience of imagery can be disassociated. Participants with aphantasia were in fact found to not be impaired on performing spatial tasks such as mental rotation, even though they were impaired on visual object imagery (Keogh and Pearson 2018;

Zeman et al. 2010).[53] This suggests that mental imagery does not need to be consciously experienced in order for it to function as a basis for other mental activities. Since mental images can vary in terms of its 'vividness' of perceptual properties, unconscious mental images (as in the case of aphantasia) may be positioned to the end where the vividness is very low, to the extent that it cannot be picked up by our consciousness.

Dimension 4: Mental imagery is better seen as a kind of mental representation rather than a kind of experience.

According to Pearson et al. (2015), mental imagery is a kind of representation, while elsewhere in the literature (Finke 1989/1993; Richardson 1969) mental imagery is considered to be a kind of experience. The experiential view argues that a mental image is a mentally invented experience that subjectively resembles our experiential states of perceiving an object or an event (Finke 1989/1993). This is also why an experientialist would insist that mental imagery must involve consciousness. The advantage of this view is that it may account for the particularity and idiosyncrasy of mental imagery because it is tied to a particular token. However, particularity and idiosyncrasy are not incompatible with the representationalist view, which takes mental imagery to be a natural kind. According to this latter view, a mental image is one of something, that is, it is real and has content. Mental imagery does not rely on introspection nor specific phenomenology, and it participates in cognitive operations to various degrees. There are several reasons to consider mental imagery as representations rather than experiences. Let me elaborate on this.

First, the experiential view implies that we cannot understand what a mental image is about unless we understand what the relevant sensory input is about. But in cases such as illusions and hallucinations, we either do not have an understanding about sensory input, as is the case with hallucinations, or the understanding we do have fails to match our understanding of the mental image, as in the case in illusions. If we interpret mental imagery as a kind of mental representation, then both illusion and hallucination can be considered as misrepresentations of sensory inputs. Since mental representation is involved in cognitive operations, mental imagery

[53] The term aphantasia refers to a phenomenon where individuals are unable either to create voluntarily or recall visual imagery in mind. It should be noted that most empirical research on aphantasia relies on self-report, and people cannot report something they do not consciously experience. What lies below the threshold of consciousness, however, can often affects how we think and respond.

would at least partly account for the reasoning and inference that follows as a result. For example, misrepresenting shadows of trees as a suspicious stranger makes one hyperalert of their surroundings, attending to other thoughts that are highly relevant: Is the stranger following me? Where is my car? Do I need to call the police?

Second, the experiential view implies that the experience is necessarily conscious because it is based on introspection. An immediate question is whether or not introspective experience is justifiable in a scientific way. This led to serious suspicion about and sometimes total rejection of mental imagery as worthy of scientific examination (Ryle 2009; Watson 1913), until the start of cognitive revolution in the 1950s. Even if we take introspection to be valid enough, as is mentioned earlier, mental imagery can be neither voluntary nor conscious. In the representationalist view, mental imagery is not tightly connected to consciousness, which means that mental imagery may influence some cognitive operations without us knowing.

For example, nouns that can easily arouse images (mostly words for concrete things such as <cat>) are memorised more easily than those that cannot (mostly words for abstract concepts such as <truth>), even when the participants do not deliberately attempt to form such images (Paivio et al. 1968). The interpretation given by Paivio and his colleagues is that human mind operates on two types of mental representations (what he calls 'codes'): verbal representations and mental images (Paivio 1971, 1986). As a result, we have both verbal memory and image memory, each containing the relevant information about the same entity. In these experiments, image memory is accessed at the same time when verbal memory is accessed, either by instruction or spontaneously. If the noun is stored in both verbal and image memory, such as in the case of <cat>, it is more likely to be retained and recalled. Paivio's later work, together with other empirical studies on the spatial property of mental imagery such as 'mental rotation' (Shepard and Metzler 1971), support the idea that mental imagery as a kind of mental representation not only exists but also participates extensively in cognitive activities.[54] In fact, most literature in cognitive science adopts the representationalist view and assumes that a discussion of the nature and function of mental imagery can be carried out without considering whether it is consciously experienced (Thomas 2009).

[54] It should be noted that while Paivio's research is mainly about how mental imagery functions in cognition, the 'mental rotation' experiment by Shepard and Metzler seeks to explain the nature and mechanism of mental imagery.

Based on the characteristics of mental imagery mentioned above, we can leave aside the experiential view of mental imagery. In this thesis, I will be using 'mental imagery', or sometimes 'imagery' in the next section with respect to existing translations of the corresponding Chinese concept, to refer to *conscious or unconscious mental representations that are not directly triggered by sensory stimuli and can lead to a quasi-perceptual experience under certain circumstances.*

6.2.2 Mental imagery in cognitive science

As mentioned in the previous section, the cognitive revolution in the 1950s and recent developments in cognitive science have brought new theories and research tools to the study of mental imagery. Cognitive scientists generally accept mental imagery as a kind of mental representation that is involved in a variety of cognitive operations. However, there is strong disagreement on the nature of mental imagery and how it is generated. This thesis seeks to also develop a modified treatment based on our current understandings of mental imagery, in order to provide support for the proposal on metaphor comprehension and interpretation. To lay the ground for such a discussion, we need to have a general picture of where cognitive science has led us.

As we have already seen, in modern literature, there has been a decades-long debate between two major views on the representational format of mental imagery. On the one hand, the analogue view, or quasi-picture view, argues that the visual mental images we experience are displayed in an analogue spatial medium, reflecting and generated from abstract deep representations in long-term memory (Kosslyn 1980, 1981; Kosslyn and Pomerantz 1981). On the other hand, the propositional view, or description view, posits that mental images are only cognitively processible as structured descriptions in memory (Pylyshyn 1973, 1981). Depending on which view we have, there will be two very different ways to represent a mental image.

Let us borrow the thought experiment from Kosslyn (1980, 1996) to briefly show the gist of these two views. Suppose we are imagining a scene where a ball is positioned on a box. If we adopt the analogue view, the image can be presented in a depictive manner. I can draw a picture of a ball on a box, or I can use a computer model, in which data about the spatial relation between BALL and BOX is fed into a computational programme, which then displays a picture

on the screen. Points on both the drawn picture and the computer-generated picture correspond to parts of the objects in an analogue way. The same scene can also be represented in propositional terms, that is, *an object BALL is in a certain spatial relation to another object BOX, and this spatial relation is indicated by the predicate ON.* In this example, both the analogue and propositional views agree that propositional information is involved in cognition. They also agree that for the picture to mean 'the ball is on the box', it needs to be interpreted in a specific way. The disagreement is about whether a mental image like this is purely propositional or whether it relies on the analogue representation.

According to the analogue view, mental images can be roughly understood as inner pictures, although, as we have seen, the 'picture' here should not be taken in the sense of an 'X-depicting image' (Rey 1981) or 'picture in the head' (see Kosslyn and Pomerantz 1981). Kosslyn (1980) and most of his works on quasi-picture theory lend much support to this view and become the dominant theory on this side of the debate. According to Kosslyn, mental images, or what he calls 'quasi-pictorial image representations' (Kosslyn 1980: 32) depict information (as described in the example of 'the ball is on the box'). In a manner that is consistent with a computational model of mind, Kosslyn and Schwartz (1977) propose that there are two types of representations underlying images: a perceptual surface representation which represents how things look like to the individual, and a conceptual deep representation whose information is associated with the content of that image. Deep representations are stored in long-term memory, and they can be activated by sensory inputs from the action of seeing (Kosslyn 1980; Kosslyn and Schwartz 1977). In contrast to the spatial properties of mental imagery, deep representation is propositional but not directly available to consciousness. It needs to be mapped onto a surface representation in order for the latter to be evaluated and transformed for mental activities such as scanning or rotation.

If we think of the mind as a computer, then visual mental imagery is the picture displayed on the screen, whereas the underlying deep representation is the raw data of the graphic file. We cannot directly read the raw data as a picture; instead, we need a 'visual buffer' (Kosslyn 1980: 139) in the form of an interface and functions as a coordinate space for the perceptual data to be 'translated' into viewable formats. The buffer works in a similar way to Fodor's (1983) input system, except that the result is of a qualitatively different type to the associated original information (Kosslyn 1976). From here, we need to understand what the image is about. Seeing or forming a mental image of a fox's ears does not entail the conceptual understanding that the

shape of the ears is pointed. In order to interpret perceptual information, the internal 'mind's eye' accesses the underlying conceptual categories (POINTEDNESS) and links it with the surface image (#fox's ear#). Therefore, the 'mind's eye' is not there to see anything nor to form any actual inner pictures, but to interpret sensory inputs so that we experience a mental image rather than a percept (Kosslyn 1980; Kosslyn and Pomerantz 1981).

The analogue view finds its empirical roots in studies on the spatial properties of visual mental images. In experiments on 'mental rotation' (Figure 3), participants were presented with pairs of line drawings portraying three-dimensional objects from different perspectives (Shepard and Metzler 1971; Vandenberg and Kuse 1978) or two-dimensional images rotated by different angles (Cooper 1975). They were asked to decide whether the drawings are of the same object, or to pick out the drawings of the same object. The results indicate a significant correlation between reaction time and rotation angle, and virtually no association with the participant's verbal ability. Following this tradition, experiments on 'mental scanning' (Figure 4) found that more time is needed to scan a visual space to reach objects further away from the point of focus or to scan more objects (Kosslyn et al. 1978; Pinker 1980; Pinker and Finke 1980). Certain areas of the brain were also activated during mental imagery processing and visual processing alike (Kosslyn et al. 1995). For defenders of the analogue view, these studies show that mental images inherit at least some of the spatial properties of what is perceived (hence quasi-perceptual), and that these properties contribute to cognition in a way fundamentally different to linguistic descriptions.

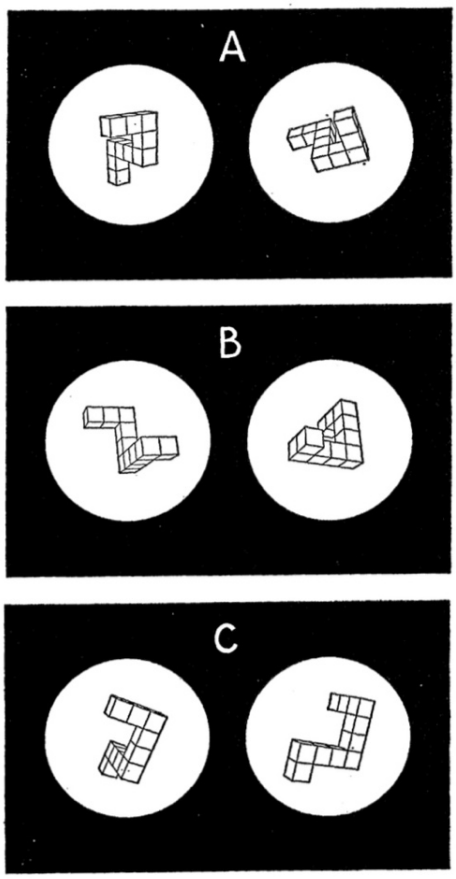

Figure 3: Examples of pairs of three-dimensional objects used for mental rotation

Source: Shepard and Metzler (1971: 702)

Figure 4: The fictional map used for mental scanning

Source: Kosslyn et al. (1978: 51)

The basic argument of the quasi-pictorial theory that mental imagery shares perceptual properties is challenged by some cognitive scientists and philosophers (Dennett 1969/2005; Ishiguro 1967; Pylyshyn 1973, 1981; Rey 1981). Ishiguro (1967: 49-50) argues from a philosophical perspective that mental images 'can be said to be "in the same grammar" as our concept of mental images. [...] [P]ropositions or thoughts, a "grammatical" investigation is especially appropriate in order to establish their nature and identity'. According to Ishiguro, mental imagery cannot exist without the intention of the person entertaining it. Mental imagery is not inner picture; in fact, it is not even real entity, although it can lead to vivid visual experience (Ishiguro 1967). However, Ishiguro's theory is against the inner-picture view. As discussed in the precious section, treating mental imagery merely as token experience can be problematic, and in regard to the development in cognitive science, there is good reason to believe that mental images as mental representations do exist.

Dennett (1969/2005) suggests that there is no room in the sub-personal level of perceptual processing for images. Having a mental image is bound by the same rule that governs perception: that it has to be from one and only one certain point of view. Mental imagery is 'depictional or descriptional, not pictorial' (p. 93). So having a mental image of a tiger does not guarantee having an exact representation about how many stripes the tiger has, only 'numerous stripes' (Dennett 1969/2005). Again, this criticism is of the picture theory, but the analogue view has already debunked the myth of mental image being facsimile of pictures. Rey makes a similar comment that the chief problem with mental imagery is that it is not at all clear whether it can have any visual properties or compositionality (Rey 1981). His concern is that for quasi-perception to be pictorial, there needs to be a pictorial perceptual experience (Rey 1981). The retinal image does not remain because it is immediately decoded and interpreted, in accordance with the computational theory of mind. Hence there is no reason for the quasi-perception experience which happens later to be pictorial. However, if we follow the evolutionary psychological view and regard things happening in the brain will inevitably lead to things happening in the mind – namely, '[t]he mind is what the brain does' (Cosmides and Tooby 2000: 97) – then we cannot ignore the empirical data quoted in the previous and this section suggesting that mental images can be constructed without direct stimuli to the sensory modalities, bearing some perceptual properties similar to those found in the original sensory experience, and providing a basis for inference.

In line with Dennett and Rey, Pylyshyn (1973) challenges the analogue view by commenting that it leads to the homunculus fallacy. According to this fallacy, if the mind's eye interprets images, then something else needs to interpret the information received by the mind's eye. We are consequently led to an infinite regression without actually offering an explanation of the mechanism. As far as defenders of the analogue view are concerned, they cannot have committed this fallacy, let alone resort to the notorious immaterial 'soul' in Descartes' writing. The fallacy only rises in the traditional 'picture in the head' account, which is not what Kosslyn and Pomerantz's (1981) new treatment of the mind's eye is about. The defenders of the analogue view argue that mental imagery shares a common format with percepts, which is not equivalent to the propositional format that characterises linguistic representations (Kosslyn and Pomerantz 1981). Mental images are formed at an early stage of perceptual processing as a depiction of the configurations of points in a functional space (Kosslyn 1980). These points alone cannot provide knowledge any more than a camera provides knowledge when it captures a picture. However, a mental image contains information based on which knowledge may be derived, much in the same way as how knowledge can be derived from perceptual representations from perception (Kosslyn and Pomerantz 1981). Although Kosslyn mainly focuses on visual mental imagery, he also mentioned the existence of other types such as auditory mental imagery (Kosslyn et al. 1995), and indeed those types seem compatible with his model.

Pylyshyn (1980) also challenges the fundamental nature of mental imagery. He created the term *cognitive penetration* when discussing whether there is a direct causal connection between cognition and perception. Perception is thought to be cognitively impenetrable. It is not overridden by thoughts or beliefs. In the Müller-Lyer illusion (Figure 5), even if we know the two lines are of the same length, we still perceive the line with two tails (fins pointing outwards) to be longer than the one with two heads (fins pointing inwards). Similarly, we see Kanizsa's triangle (Figure 6) even if we know the triangle in fact does not exist. This view is shared by Fodor (1983, 1988), who argues that the modularised input system is information encapsulated and only has access to a limited set of information relevant to performing its functions, as opposed to the unmodularised central processing system which has free access to all available information (as is discussed in Chapter Four). The perception of duck-rabbit (Figure 7) depends not on what we think we see, but on where we fixate our attention to or how we look at the object (Fodor 1988). In other words, there is no direct perception penetration but recalibration of the sensory system by itself.

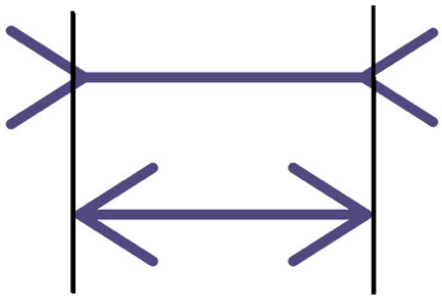

Figure 5: The Müller-Lyer illusion

Source: Donaldson and Macpherson (2017)

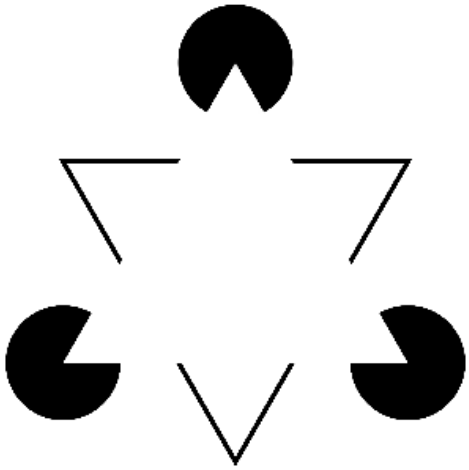

Figure 6: Kanizsa's triangle

Source: Thomson and Macpherson (2017)

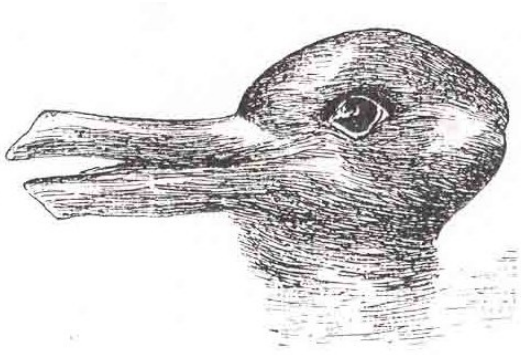

Figure 7: Duck-rabbit

Source: Donaldson (2016)

Following this line of thought, if mental imagery is the result of visual processing, it should be cognitively impenetrable as perception is. However, mental imagery can be and often is affected by thoughts and beliefs, meaning that it should be cognitively penetrable. This is a strong challenge to the analogue view, but it does not completely eliminate the possibility that mental imagery can still be quasi-perceptual and not entirely propositional. If we take it that mental imagery gives access to both perceptual and conceptual mental representations, then when I consciously manipulate a mental image, it is the conceptual representation being manipulated, rather than the image itself being cognitively penetrated. Indeed, many physiological processes operate automatically and unconsciously, but it does not mean that they are completely insensitive to consciousness. We see Kanizsa's triangle not because we believe there is a triangle, but our conceptual knowledge about triangles fills in the gaps in making sense of what we think we see. In this way, our conceptual system does have some influence on perception. Mental imagery may work via a similar route. As will be further discussed in the next chapter, propositional thoughts and non-propositional contents (e.g., feelings, emotions, quasi-perceptions) are processed in a parallel manner. The image I have in mind guides my attention to some aspects of the object or event, and my conceptual knowledge helps me understand what it means to me. The main idea is that the connection between mental imagery and conceptual thinking may be more flexible than what the modularity of mind hypothesis permits.

Pylyshyn (1981, 2002, 2003) argues that mental representation should be treated as a type of description. What we call mental imagery is the meaningful interpretation of a descriptive representational system, rather than an uninterpreted sensory pattern. In other words, mental imagery is a structural symbolic description, and it is inseparable from its propositional content, even if the latter does not always correspond to available words in natural language (see Section 4.2 on Fodor's (1975, 2008) notion of Mentalese, also Fodor and Pylyshyn (1988)). The description alone is sufficient to account for our experience of mental imagery, leaving no place for any picture-like representations. A mental imagery represents its corresponding object in a way similar to how a sentence is related to its referent: it is selective and conceptual in nature (Pylyshyn 1981). My mental image of sitting on the beach comes with a set of conceptual information in referential relation to what is presented on that image. If part of it is missing – say I recall there were people sitting next to me without recalling what they were doing – then it is the perceptual attributes of events is missing, not just the raw sensory input. Therefore,

‘image’ is the wrong term because it fails to explain the link between sensory patterns and referential relations.

This thesis is not arguing that mental imagery is only constructed via resemblance or that it is a purely propositional description. Instead, I see the construction of mental imagery as a result of both perceptual and referential relations being established between the object or event and the content of the image, the latter having the potential to give rise to the re-construction of a quasi-perceptual experience. The propositional view also leaves unanswered the question of how a description leads to non-propositional effects such as feelings, impressions, and emotions. Recalling a description of a certain emotion is different from experiencing it. The latter happens frequently when an image is called to mind, be it vivid or vague, visual or in other sensory modalities. Neither the analogue nor propositional view alone would provide a satisfactory account for the underlying mechanism.

As an influential figure in the development of the computational theory of mind, Fodor generally agrees with Pylyshyn’s stance in the analogue-propositional debate (Fodor and Pylyshyn 1988). In relation to his computational ‘language of thought’, Fodor (1975) believes that in order to understand what a mental image represents, the associated linguistic description is necessary. We cannot determine what an image means until it is pinned down to an entry in mentalese. However, Fodor does not completely reject the possibility that at least some mental images can bear pictorial properties. In fact, referring to Paivio’s dual-coding theory and Shepard’s work on ‘mental rotation’ (Shepard and Metzler 1971), Fodor (1975) argues that mental imagery should be taken as a serious matter. There are some activities which may be facilitated when the relevant information is displayed as an image, and that image may be schematic. The problem is that this kind of non-discursive representation cannot fulfil its cognitive role until its ‘meaning’ is determined by mentalese: The way an image is to be taken by the mind is determined by its perceptual properties as well as the kind of description it is associated with (Fodor 1975).

Fodor’s arguments can be further understood in terms of the *unconceptualised mental representation* (Fodor 2007) or *preconceptual representation* (Fodor 2008). This is the kind of representation that represents X without representing X as F, similar to the ‘seeing’ and ‘seeing as’ distinction in psychology. According to Fodor, there are two types of mutually exclusive representations: iconic representations which are by definition non-conceptual, and discursive

representations such as a sentence in natural language. The important distinction between these two types lies in the ways in which they achieve compositionality. For the sentence 'John loves Mary', its semantic interpretation depends only on the relation between its constituents, whose contributions to the interpretation are unequal. In contrast, an iconic representation does not have constituents and therefore its interpretation cannot be the sum of its individual parts. For example, part of the curve representing a normal distribution partially represents that normal distribution, and part of the picture of a person represents part of that person. Their contributions to the interpretation are equal, which means that an iconic representation does not have a constituent structure and hence no logical form as a sentence does. For this reason, iconic representations cannot represent any propositional properties – 'the camera doesn't lie, but nor does it tell the truth' (Fodor 2008: 176), nor can it by itself guarantee a specific interpretation (or meaning) of what that image represents.

Also, because of this indeterminacy of individuation, an iconic representation can contain information that is not readily falling under a specific category. In other words, the representation is not yet conceptualised as F but only represents X. It is the perceiver's interpretation, namely, the concepts the perceiver brings that make that representation represent X as F (Fodor 2008). However, an iconic representation is still different from pure perception (the result of which is, for example, a retinal image). An iconic representation registers certain properties from perception and sometimes stores those properties temporarily in an 'echoic buffer' where early processing is conducted (Fodor 2007: 111). Even if these properties are not always attended to, they are nonetheless available to further cognitive operations. Perhaps we can take iconic representation as one that has finished early-stage filtering of perceptual inputs, and now has the potential to be conceptualised in later mental processes.

Then how does these unconceptualised/pre-conceptual representations help with our understanding of mental imagery? If we accept that some mental images are iconic, then such images will have the same features as Fodor's iconic representations have. These mental images register properties but do not individuate them, and the properties being registered do not require immediate inference. For example, we can have a mental image of #cat# without knowing it is about the property *cat* or the concept CAT. There are three different stages in this experience: the perception of the animal (purely perceptual), the initial processing of the perceptual properties of that animal where some inferences are made, and identifying that animal as a member of the CAT category (purely conceptual). We can also register, but not yet

attend to, the properties of its colour or size without conceptualising such information. Mental images such as these do not enter higher-level processing, but they are still the products of perceptual inference, which may ground, but not cause, a perceptual judgment. Entertaining them may elicit sensorimotor responses that guide or constrain further inference (e.g., that the colour of the cat is different from another colour, say green, without conceptualising the colour either).

Evidence supporting Fodor's idea can be found in how simple and complex organisms respond to the environment. For example, Cornell and Wharton (2021) show that both simple organisms such as the sea-sponge and more sophisticated ones such as the lizard map their sensory information onto behaviours based on respective goal-oriented frameworks of different complexities. At this stage, none of the representations are conceptualised. Relatively simple as it is, processing these representations plays a role in enriching and guiding the organism's survival strategy. 'Complex systems augment, rather than replace, simple ones' (Cornell and Wharton 2021: 195). Of course, this research does not provide direct evidence to how mental imagery affects cognitive operations. However, as discussed earlier in this section (and as endorsed in this thesis) there is no qualitative difference between vision and visual mental imagery, and by extension between perception in one sensory modality and the corresponding mental imagery. If perception can influence cognition, changing how we respond in a certain situation, the same mechanism may also apply to mental representations not directly triggered by sensory stimuli. In other words, mental imagery does have quasi-perceptual properties, and it does not need to be 'translated' into propositional descriptions in order to influence cognition.

Colin McGinn provides a more recent account on mental imagery in comparison to vision. In *Mindsight* (2004), McGinn begins by criticising the Humean view that percepts and images do not differ in kind but only in terms of vividness. According to McGinn's account, both vision and mental imagery are the result of seeing, but in different senses. Our eyes only receive sensory inputs, while the organ of visual experience is the brain or part of the brain. When forming mental images, we are voluntarily generating visual representations of the corresponding objects in the world, which is just another instantiation of seeing, or in his terminology, seeing through 'the mind's eye'. However, McGinn's examination leads to a clear-cut distinction between vision and mental imagery, according to which, vision as a type of perception is passive whereas mental imagery requires an active interpretation of the world (what he calls imagination). We cannot choose what we see when an object is positioned in

front of our eyes, but we can choose what mental imagery we entertain because it is the result of such interpretation. McGinn (2004) takes this as the reason why our visualisation and imagination might be hijacked or interrupted by external stimuli to the sensory system. What accounts for both types of visual experience is not a quasi-picture nor a description. Instead, it is an array of correspondences between properties of external objects and the cognitive outputs, namely, the brain's reactions to external stimuli (McGinn 2004, 2009).

Although this thesis does not endorse a reductionist view to suggest that perception and mental imagery is the same thing, it does not fully agree with McGinn's dichotomy, either. First, as mentioned earlier, mental imagery can be involuntary or unconscious (Kwok et al. 2019; Nanay 2021ab; Sullivan-Bissett 2019). Second, humans are able to construct internal representations to mimic perception using feedback instead of feedforward information, and in this kind of situation imagining and perceiving visual stimuli activate similar brain circuits with related neural dynamics (Dijkstra et al. 2018; Pearson et al. 2015).[55] Furthermore, neuroscience has provided evidence that vision is not passive as taking pictures with a camera is regarded as passive: visual processing itself is constructive (Gilbert 2013; Goebel et al. 1998). The perception system of humans as well as other mammals is thought to consist of ventral and dorsal pathways. The ventral pathway is responsible for identifying and recognising objects, while the dorsal pathway controls motor actions. Certain visual processing is analysed in parallel between those two pathways (Gilbert 2013), and that areas in the dorsal pathway are activated by apparent motion and recalling such motion from memory (Goebel et al. 1998). This suggests that both perception and imagery involve bottom-up and top-down mechanisms.

McGinn's view further leads to the conclusion that mental imagery cannot generate new beliefs since whatever mental imagery consists of must have already been there in the mind (McGinn 2004). This is compatible with many theories, including relevance theory, which is built largely on the primacy of proposition. Mental imagery does seem to provide something upon which creative interpretation is built (McGinn 2004, 2009), contributing to the explicitness of propositional content. But at the same time, mental imagery may also guide and prompt further inference, in a similar manner as procedural meaning does. However, it should be noted that

[55] In visual cognition, new inputs can be feed into higher-level processes using the feedforward mechanism. After signals arrives at the retina, simple features will be first processed in posterior visual areas, and then more complex features will be processed in anterior areas. After that, information from anterior areas will be fed back to the posterior areas to help sharpen the visual representation until the percept is stable (Dijkstra et al. 2018).

by comparing the working of mental imagery to that of procedural meaning, I do not intend to claim that mental images encode procedures. As introduced in Section 3 of Chapter Four, the term 'procedural meaning' has been adopted by relevance theory to refer to a particular type of encoding. Some words encode not concepts but information on how the utterance should be computed (Blakemore 1987, 2011). Alternatively, they can be considered as encoding indicators of the general direction of processing by modifying the scope of comprehension or the saliency of some assumptions (Wharton 2003; Wilson and Wharton 2006). What I suggest, instead, is that mental imagery helps guiding the addressee's attention to be put or anchored onto certain aspects of their experience, which may be relevant or more relevant in the current context and may contribute to further inferential processes. It is in this sense that the workings of imagery and procedural meaning may be considered as similar. Emotion, images, and non-propositional effects in general have been shown to motivate non-demonstrative inference when a concrete proposition is not yet readily available (Ifantidou 2021ab). This allows for the possibility that mental imagery, be it vivid or vague, may play a more active role than described in McGinn's account.

6.3 Imagery in Classical Chinese account

6.3.1 Exploring imagery: the concept of xiang

Previous discussion shows that we still lack a theory convincing enough to fully account for the nature of mental imagery. In this thesis, I adopt a working definition which leans towards the analogue view of mental imagery, but I do not fully agree with their claim that the conceptual information (namely, Kosslyn's deep representations) associated with surface representations is inaccessible to consciousness and requires a 'visual buffer' for interpretation. Instead, I propose that both perceptual and conceptual information are made accessible by entertaining the type of mental representation that we call mental imagery. To support this view, I introduce a concept from Classical Chinese philosophy known as *xiang*. I am not suggesting that this ancient view can in any way replace current theories. Nor do I imply that it can solve the problems once and for all. Rather, my aim is to raise parallels and differences that can be observed in both traditions. In doing so, I hope that such a discussion may shed some lights on the nature of mental imagery and its role in cognition by and large.

The concept of *xiang* is often translated as 'image' or 'imagery'. However, this translation causes as much confusion as does the term 'mental imagery'. *Xiang* itself does not necessarily inherit visual properties from the object the image is associated with. As with mental imagery, there is the *xiang* of objects seen (visual mental imagery), the *xiang* of sound (auditory mental imagery), the *xiang* of smell (olfactory mental imagery), and so forth. Despite this similarity, there is no equivalent to the term 'mental imagery' in Classical Chinese literature. One possible explanation is that the traditions of theory of mind in Ancient China (at least in Confucianism) is in essence not expressed on a psychological basis but rooted in the study of conventionalised linguistic and moral meanings (Fingarette 1998). Modern researchers generally translate 'mental imagery' as 心理意象 *xinli yixiang* or sometimes 心象 *xinxiang* for short. *Xinli* is the term for the adjectives 'mental' and 'psychological', and the morphological root *xin* represents the physical organ of the heart. The reason for this is that *xin* in Chinese philosophy is regarded as the central faculty for human cognition that triggers reactions to stimuli from discourse. It is conceptualised as guiding both reason and affect (Yu 2007, 2008). *Xin* therefore is usually understood as 'heart-mind' in this context. The second part – *yixiang* – is literally translated as 'meaning image', alluding to the relation between meaning and imagery that will be further examined below. From this translation we can see that in the Classical Chinese view, mental imagery is inseparable from meaning and that it is linked to propositionality, the result of reason, as well as non-propositionality, the result of affect and perception.

Since *xiang* is the near equivalent to imagery, understanding the notion of *xiang* may provide some insights into imagery. To do that, we may start with how the Chinese character for *xiang* acquired its meaning.[56] According to *Shuowen Jiezi*, the first Chinese dictionary to analyse the structure of characters and the rationale behind their meanings, the character for *xiang* (象) is originally a pictogram for the animal elephant. Its functions evolved from symbolic to verbal, and then to metaphysical. Early Taoist texts, such as 'Jie Lao' by Han Fei (ca. 280-233 BC),[57] explained this concept in relation to its origin that (cited in Lewis 1999: 271):

> Men rarely see a living elephant, but they can see the bones of dead elephants. On the basis of this representation […] they think of [what it was] in life. Therefore, the means

[56] Unlike alphabetic writing systems, the Chinese language uses characters for the writing. Those characters are developed as individual logograms, each associated with an entire syllable.
[57] "Jie Lao" is a chapter from *Han Feizi*, a collection of Han Fei's works. This chapter is believed to be one of the texts containing the earliest known commentaries to the Taoist Classical text *Laozi*.

by which people are able to have an idea of or think about something are all called 'elephant/images'.

It is clear that what Han means by 'xiang' is not an exact copy, because it is almost impossible for someone who has never seen an elephant to conjure up a life-like picture of the animal simply by looking at its skeleton. Instead, Han appears to take *xiang* as the result of combining perception and conceptualisation. Seeing the skeleton provides sensory inputs containing only some of the visual properties of the object, that it has four legs and two long tusks, and is large in size. But other visual properties are missing, for example, the long trunk and two large fan-like ears. Note that during this phase none of the above properties are necessarily conceptualised. It is 'seeing' but not yet 'seeing as'. Then those sensory inputs are processed conceptually, linking with propositional thoughts in our mind to construct a conceptualised mental representation of elephant, or whatever name it can be given to the animal whose skeleton is being examined. So *xiang* is positioned between things perceived and things *per se*, containing the essential features of the property *elephant* (Zhang 2019). The perceiver will at least know or believe *something* about the elephant which may or may not be true to facts. Despite differences in individual visualisations, these 'core' features will make whatever representations people have in mind to be about the concept ELEPHANT, but not, say, RHINOCEROS. Recalling this mental representation from memory will simultaneously access both the perceptual properties and the associated conceptual information.

We may compare this approach with Rey's (1983) remarks on four main functions of concepts: stabilising, linguistic, metaphysical and epistemological functions. According to Rey, concepts first provide a stable basis for explaining cognitive processes. By providing commonalities between individual instances and generalisation, concepts link different cognitive states so that claiming that they are about the same thing can be justified. This stability makes it possible for concepts to perform their linguistic functions through semantic structures. Knowing the semantic content of a word means knowing the token-type link. The metaphysical and the epistemological functions, which usually taken as conflated with one another, are in fact distinct in Rey's (1983) account. He proposes that the process of categorisation can be seen from two different perspectives: how things are correctly classified (e.g., 'The thing with atomic number 79 is gold.'), and how people engage in the classifying (e.g., 'The precious

yellow metal mined in the Sierras is gold.').[58] For natural kind concepts, it is common to find a mismatch between these two perspectives of classification (Rey 1983). The atomic number is the feature that determines the classification of the substance, whereas the perceptual features – value, colour, place of production – are those that form the basis of our understanding of the substance. In most cases, we only need the latter to have a belief about 'gold'; the former is either unknown or unnecessary at least in the formation of such a belief. In other words, the beliefs we have about something often influence how we categorise it, but how it *is* categorised may have nothing to do with such beliefs.

Returning to *xiang*, we can see that this notion is involved in the process of a concept performing these functions. Let us use the *xiang* of elephants to illustrate. Since *xiang* starts with perception, there are some visual properties that can be registered, identified, and stored. If John has already seen an elephant, then the next time he sees an animal of a similar appearance, he may associate this token experience to a previous, more generalised one, hence recognising they are of the same kind. At this stage, the perceptual aspect of the *xiang* of an elephant is accessed, contributing to John's attribution of a token to a kind. The term for this aspect is 物象 *wuxiang*, the 'object image'. It points to what an object looks like, and more generally, what can be perceived through senses (Qu 2020). Note that it does not matter whether the animal in question really is an elephant. This recognition links the animal with a word in natural language and its semantic content, or linguistically encoded meaning. Then John needs to determine whether the 'elephant' in his mind is indeed ELEPHANT. Again, if he has learnt about elephants from documentaries, or if he has been to a safari park to see one which is scientifically identified as an elephant, he would have some conceptual knowledge about ELEPHANT which can be associated with perceptual properties. The 'core' features through which the metaphysical function of ELEPHANT can be performed include all the necessary biomarkers that distinguish ELEPHANT from RHINOCEROS, and they may or may not be readily available to John. We may call the representation constructed by these 'core' features the metaphysical *xiang* of elephants.

[58] Rey also noted that the correctness may not be fixed or even achievable. An example is the Goldbach's Conjecture, which has thus far neither been proved or disproved mathematically. He proposed an alternative term of *optimal account*, referring to the best account available when all relevant issues and possible evidence considered.

However, as Rey (1983) demonstrates, there is a real distinction between metaphysics and epistemology. There is a gap between what an elephant is and what John takes to be an elephant. Indeed, even if John knows none of the biomarkers of elephants, he can still access his memories concerning elephants, including both conceptual ones (e.g., 'The giant animal with a long trunk and two tusks is an elephant.') and perceptual ones (e.g., how an elephant looks, what he felt when he saw one) to construct a separate *xiang*. It may not be strictly accurate in terms of scientific facts, but it is good enough to support further inferential processes. Since in the Classical Chinese account this aspect is also termed as *xiang*, and the conceptual 'deep representation' from the quasi-perceptual theory is not directly accessible to consciousness, I propose a modified treatment to the term mental imagery to include mental representations of this kind.

From the above discussion we may summarise a few characteristics of *xiang* in the Classical Chinese account. It is a type of mental representation that finds its basis in perception. Resemblance to these perceptual properties obtained from the perceptual experience plays a role in categorisation and other relevant cognitive processes. Unlike the sentence-like structural description in propositional view of mental imagery (Pylyshyn 1981, 2002, 2003), *xiang* is not entirely separable from the associated perceptual properties. Rather, it involves both perception and reason (Zhou 2014), connecting the perceived form of an object to the concept we associate it with. It is the embodiment of inner feelings based on experience, memory and imagination (Pan 2007). As I will introduce below, for some philosophers, these characteristics allow *xiang* to bridge the gap between the linguistically encoded content and what is communicated.

6.3.2 Xiang *in verbal communication*

In the Classical Chinese account, the role *xiang* plays in verbal communication is understood in relation to the notions of 言 *yan* and 意 *yi*, forming a '*yan-xiang-yi*' paradigm. *Yan* is roughly the equivalent of speech, focusing mostly on the content of an utterance or explicature in relevance-theoretic terms. *Yi* is about thoughts or ideas that underlie the linguistically encoded meaning. It may include speaker's meaning in the Gricean tradition and her general intention to communicate. There is a true distinction between *yan* and *yi*, but the fact that *xiang* is positioned in the middle seems to suggest that there is a transitional phase between the linguistically encoded content and the speaker's intention in terms of thoughts. The following paragraphs aim at unpacking this paradigm to introduce the idea that *xiang* plays an

intermediatory role in connecting what is said with what is intended. I use the expression ‘what is intended’ rather than ‘what is meant’ in the Gricean tradition because *yi* may include the intentional communication of non-propositional contents such as feelings, emotions or images, which are not included in Grice’s definition of non-natural meaning.

Yan may be textualized as in the case of a written sentence or preserved as a pre-text, such as an oral epic (Ding 2008). *Yi*, by contrast, has multi-layered denotations. Typologically speaking, *yi* is related to those Chinese characters which are the abstractions of pictograms. This inherent *yi* functions as a conceptualised mental representation about the world. For example, the *yi* of the character 旦 is ‘dawn’ because this character is originally a pictogram that perceptually resembles the sun rising from the horizon. Similar evolution can be observed in the character 象 *xiang*. Figure 8 and Figure 9 show these two characters with their three historical forms: oracle bone script, bronze inscriptions, and small seal script. Considering the characteristics of *xiang* introduced above, its relation to *yan* and *yi* in this case is straightforward: it resembles objects directly.

Figure 8: Historical forms of the Chinese character 旦

Source: hanziyuan.net

Figure 9: Historical forms of the Chinese character 象

Source: hanziyuan.net

But pictograms only make up a limited number of Chinese characters. On a general level, we may compare *yan* with *signifier* and *yi* with *signified* in modern semiotics (de Saussure 2011). *Yan* is the word in the vocabulary of a natural language (e.g., <tree>), which points to *yi*, an associated concept in the mind (e.g., TREE). Then how does *xiang* fit in? Ding (2008) remarks that the concept is just a kind of symbol operating on a deeper level than the linguistic symbol, because what really matters is what that concept is about. The concept TREE can be replaced with another coded element (which is not a linguistic code but works similarly) and still refer to the same content. This content, determined fundamentally by the metaphysical function it performs, is the *xiang* (Ding 2008). In other words, *xiang* underlies the formation of a concept, which is then linked with a linguistic coded element to stabilise the connection between conceptualisation and natural language.

From a semantic perspective, some aspects of *yi* can be communicated directly by encoding, as in the case from the *xiang* of the object tree to a concept TREE then to the word <tree>. However, as I have already mentioned in Chapter Three, there are very few cases, if any, where meaning is communicated in this strictly literal sense. Understanding only the linguistically encoded meaning is far from enough to grasp speaker's meaning. There is also a gap between how many concepts or mental representations we can have and how many of them can be verbally expressed. This leads to a principle about the '*yan-xiang-yi*' paradigm, first summarised in the *Great Appendix* of *I Ching* (1882: 376-77):

> The written characters are not the full exponent of speech (*yan*), and speech is not the full expression of ideas (*yi*). […] The sages made their emblematic symbols (*xiang*) to set forth fully their ideas.

This view is endorsed by Wang Bi, a philosopher in the third century, in his elaboration of this paradigm (1994: 31):

> Images are the means to express ideas. Words [i.e., the texts] are the means to explain the images. To yield up ideas completely, there is nothing better than the images, and to yield up the meaning of the images, there is nothing better than words. […] Thus, since the words are the means to explain the images, once one gets the images, he

> forgets the words, and, since the images are the means to allow us to concentrate on the ideas, once one gets the ideas, he forgets the images.

There are several implications from the above two quotes. First, and this should be an indisputable one, words in a natural language have only a limited capacity to express thoughts. Some aspects of the thought remain ineffable because words fail to correspond to them. This is not because we do not have enough words at our disposal, but because those aspects are inherently ineffable. Second, what is ineffable can be exhausted by communicating images. The speaker constructs an image (*xiang*) based on words (*yan*), and the purpose of this image is to communicate thoughts (*yi*), including the parts that cannot be decoded directly from words. Therefore, *xiang* is a necessary tool, serving the function of fully communicating the intended meaning. Third, the hearer should not cling onto words once he has constructed a *xiang*, and he should not cling onto this *xiang* once he has understood the speaker's thought.

This argument gives primacy to the communication and comprehension of speaker's meaning. In summary, *yan* and *xiang* are necessary only in their functions to communicate meaning, which is the ultimate goal. Both *I Ching* and Wang Bi suggest that every case of communication can only reach its full potential through the use of an image. However, this is a strong claim that suffers from limitations related to the main purpose of *I Ching*, which is taken for granted and is never explicitly mentioned in both texts. Zhao (2020) points out two problems: first, there are cases in which meanings can be fully communicated without resorting to image; second, unlike what is argued by Wang Bi, image is not disposable once meaning is comprehended. These two points are particularly relevant in cases of literary texts and artworks, on which I will elaborate below.

Zhao (2020) starts by differentiating conceptual representations from perceptual representations. Perceptual representations represent the world correctly or incorrectly as a result of perception. In either case, they have content, meaning that a perceptual representation is one about something and that it reflects how we perceive the world (Nanay 2015a). If I show you a photo of a cat (without saying anything), you will know that this photo is of a cat only when there is indeed a cat shown on the photo. In this example, imagery is necessary because it is what 'tells' you the content of that photo. If you ask me whether I have a pet and I show you the same photo (again, without saying anything), imagery is also a necessity although it

works differently. By showing you a photo of a cat, I intend to answer your question, so a speaker's meaning is involved. My communicative act provides the following information:

(a) I have a pet animal.
(b) My pet is a cat.
(c) The cat in the photo is the cat I own as a pet.
(d) I want you to know that I have a pet and that my pet is the cat in the photo.

My main goal is to communicate my intended meaning, but it cannot be achieved without the image of the cat. I can also answer your question without showing anything, but that would be a case of constructing conceptual representations. Zhao (2020) remarks that the idea that *xiang* is connected to perceptual representations is probably why *I Ching* and Wang Bi put much emphasis on its importance. *I Ching* is originally a book of divination practice, the philosophical discussions of which were added later as commentaries. Wang Bi's work is to provide further theoretical support for *I Ching*. The *xiang* in *I Ching* can be considered as what is symbolised by the hexagrams, figures composed of stacked horizontal lines. The ultimate goal of *xiang* is to communicate a determinate thought (*yi*) by connecting it with speech (*yan*, in the form of hexagram). Note that there is usually more than one *xiang* associated with an individual hexagram, but they are nonetheless clear and fixed. Therefore, as Wang Bi wrote, imagery can be discarded as soon as the thought is understood.

Verbal communication, however, poses challenge for a full adoption of this treatment because thoughts can be ambiguous, vague, and indeterminate in communication. In literary context, communicating a determinate thought is sometimes not the only nor the main goal (de Saussure 2021; Zhao 2020). Language, both the internal mentalese and natural languages such as English, can convey conceptual representations emphasising two types of relations which Zhao (2020) calls word-meaning, whose main purpose is to communicate precise propositions, and word-image, whose main purpose is to construct imagery. In the former case, image is not mandatory because decoding is enough to retrieve the association between a word (linguistic symbol) and its reference, therefore Wang Bi's treatment is not applicable. It seems that Zhao (2020) bases his claim about the word-meaning relation on the code model which assumes that communication is a linear process. However, as relevance theory has shown, there is a continuum between determinate and indeterminate meaning, and cases in which the speaker is communicating a fixed meaning that is fully and precisely encoded into a linguistic expression

only make up part of our daily verbal communication (Sperber and Wilson 2015). In unambiguous explicit communication, which is when the speaker is communicating a determinate proposition and her intentions provide all the evidence for the intended import, imagery does not seem to be necessary, and Zhao's argument indeed stands.

In the word-image relation, imagery is either the main content of communication, or it helps communicate what is ineffable or non-propositional (Zhao 2020). In this case, the construction of imagery is necessary. According to Zhao, imagery as the main content of communication is very common in artworks, whose impacts mainly comes from the integration between imagery and the intended meaning. Yet the audience of a painting can still appreciate without a full comprehension of the message that the artist is trying to convey. In literature, however, imagery is more about providing supporting evidence for the readers to 'make sense' of and to 'feel' what is possibly intended by the author. In some instances, the artist or writer is not trying to communicate a precise or determinate message. Instead, she provides enough relevant evidence for the reader to reconstruct and experience the feelings, impressions, and emotions that she intends to raise in their minds (de Saussure 2021). This is also a driving force for some literary texts and artworks to be considered a form of 'self-expression' (Green 2017). For this claim, Zhao did not provide a direct example, but we can perhaps use the following quatrain from the poem 'The Red Peony' by Wang Wei to illustrate (cited in Yu (1981: 218)):

(63) Green beauty, tranquil and at leisure;
Red garments, light then dark again.
The flower's heart grieves, about to break:
From spring colours, how can the heart be known?
绿艳闲且静
红衣浅复深
花心愁欲断
春色岂知心

This quatrain, according to Yu (1981), satisfies most classical definitions of metaphor in the 'Western' literary tradition where an object in the poem refers to something other than itself, and a transposition from one to the other rests on the assumption of their essences. At first glance, it might be difficult to paraphrase what implicit message(s) the poet is trying to

communicate beyond a description of the peony and the transference of liveness to lifeless things. However, the intended imports only appear to be opaque if the reader does not see the connection between natural objects and 'the "real topic" drawn from the human world' (Yu 1981: 215). The comparison, with the 'real topic' actually only implied, gives rise to both cognitive and affective effects in the reader. Metaphorical meanings are certainly part of what the poet intends, but the poet goes beyond what is communicated by the metaphors and self-expresses his perception and interpretation about a certain issue or event, that beautiful things do not last and that one gets old before having great accomplishments. Furthermore, the poet intends the reader to experience similar mental states and to attribute such an experience to the poet's intentions.

In order to achieve this goal, the poet not only utilises a careful choice of words and figures, but also invites the reader to imagine the scene as is described so that he may construct a mental image which further gives access to associated mental representations or psychological states. It is in this latter quasi-perceptual stage that, as Zhao (2020) argues, imagery is necessary for the communication of what is ineffable. The 'green beauty' and 'red garments' in the first two line can be easily understood as referring to leaves and the flower of the peony by constructing *ad hoc* concepts GREEN BEAUTY* and RED GARMENTS*. Here I mainly focus on the discussion of the third line as this is where mental imagery 'points to' what is intended. There may be two types of processing happening in parallel, which can be broken down as follows:

I. Conceptual route:
   a. Explicature: The FLOWER*'s HEART* GRIEVES*, about to BREAK*.
   b. Contextual assumptions:
      i. When someone's HEART* GRIEVES* and BREAKS*, they are SAD*.
      ii. One is SAD* when something REGRETFUL* happens.
      iii. Withering is a REGRETFUL* for the FLOWER*.
   c. Contextual implications: It is REGRETFUL* that the FLOWER* is about to wither.

II. Procedural route:
   a. Mental image: #flower#, #(something) breaks#
   b. Contributions to inference:
      i. Simulations that resemble the associated perceptual experience
      ii. Access to relevant mental representations and mental states (and perhaps physiological states as well)

iii. An imaginative experience focused on certain aspects of the stimuli
iv. Attribution to speaker's intention

Intended contents:

a. Speake's meaning (through self-expression): Beautiful things do not last. I will get old before I make great achievements.
b. Non-propositional effects on the reader: mental images of blooming and withering flowers, an impression shared by the poet, an emotional state of melancholy or loss, sympathy and/or empathy for the poet, etc.

The above discussion shows that in the Classical Chinese account of verbal communication, there are certainly cases (mainly in unambiguous explicit communication) where imagery is not necessary. However, in more creative contexts such as literature and artworks, imagery is more likely to play an active role in facilitating a full experience of what the creator intends her audience to have. In metaphors such as those in (63), the reader is more likely to utilise a dual-route processing in which imagery prompts an intuitive but relevant experience possibly at lower cognitive costs, which creates connecting points to speaker's meaning. In the next section, I will discuss how this dual-route processing works and why it can contribute to obtaining the speaker's intended contents.

6.4 Dual-route processing

Verbal communication requires the hearer to spend a certain amount of cognitive effort in order for the speaker-intended import to be communicated successfully. It seems a plausible speculation that more creative dimensions of verbal communication would require a larger investment of cognitive effort and processing time, which has indeed been demonstrated by some experiments even when the metaphors are appropriately contextualised (Arzouan et al. 2007; Giora 1999; Lai et al. 2009). Communication has to involve the generation of cognitive effects as described in the relevance-theoretic framework so that the addressee can *know* anything about what is meant by the speaker. However, this does not mean that the relevance of an utterance lies only in the number of cognitive effects it may give rise to. Relevance can have multiple dimensions. Artworks and literary texts, for example, appear to be perceptually and aesthetically relevant regardless of their ostensive functions (Kolaiti 2015, 2020). 'Feeling' an emotion can also be relevant independent of the cognitive processes of epistemic states and other representational outcomes (de Saussure and Wharton 2020; Wharton et al. 2021).

Accordingly, the modifications happening in our mental world can be of perceptual or affective nature, leading to an improvement not just in conceptual knowledge but also in sensory or affective states.

In this section, I suggest that mental imagery can contribute to deriving the relevance of an utterance. It provides cues to ostension by 'pointing to' specific aspects or constituents from personal memory and experience that perceptually resemble the original sensory inputs. The speaker intends the hearer to focus on these particular aspects or constituents because they help the hearer to infer what is intended. The construction of mental imagery involves automatic activation of a range of representations of different degrees of manifestness. Not all representations are known or assumed, but they are accessible to the hearer in a certain context at a certain time. They become manifest because the speaker intentionally creates a scenario in which those representations are relevant or more relevant than others.

For example, in (63), the representation of a person being analogous to the red peony is one of those becoming manifest in this context. The poet does not need to ask whether the reader knows he is comparing himself to the flower, and whether the reader assumes that the poet has noticed that the reader knows, and so on. He assumes that the previously inactivated representation of a person being analogous to the flower will be manifest to the reader at the right time either via the reader recognising his intention of self-expression and/or the reader's imaginative experience. For the purpose of cognitive economy, not all manifest mental representations will be attended to. Those that are indeed attended to will be the ones more relevant in the current context, because they mainly require lower-level (quasi-perceptual) processing, or because the association is more frequently established (due to, for example, personal history, imagination, social and cultural factors) hence more readily accessible. In either case, attending to those representations saves cognitive resources, which increases their level of relevance.

This selected set of representations made accessible by entertaining mental imagery can be propositional, giving rise to positive cognitive effects. Or they can be non-propositional, giving rise to positive perceptual and affective effects that are beneficial for several reasons. First, as mentioned in the previous section, the speaker does not always communicate or signpost a precise and determinate speaker's meaning in literary contexts. Rather, she is more likely to share a particular mental state by intentionally bringing into the hearer's attention how a

situation is to be experienced and what feelings or affections are to be raised (Saussure 2021). By 'pointing to' an image instead of a proposition, the speaker guides the hearer's attention to what may lead to their own affective responses. Second, constructing and entertaining a mental image may also kick off an intuitive quasi-perceptual processing. The mental image functions as a rich bundle of artistic/perceptual stimuli that modifies the hearer's perceptual and even sensorimotor systems, contributing to the perceptual relevance of that image (Kolaiti 2020).[59] This modification in the hearer's perceptual environment further makes it more likely for him to notice and attend to the stimuli, forming an iterative processing loop. Third, perceptual and affective processing may be easier or more difficult, both leading to an increase in the degree of relevance. Cases where such processing is of lower cognitive cost are those essentially linked to bodily experience. What we have here is not just epistemic, higher-level processing but also sub-attentive, lower-level processing for relevant information (Wharton et al. 2021).

The perceptual and emotional impacts on the reader will direct their attention to certain aspects of this experience, which will in turn guide their search for relevance. It is likely that we do not always activate and select the same set of representations. This difference exists across individuals and across time, which explains why people feel differently or with different degree of intensity about the same text even if they interpret the intended meaning in more or less the same way. By contrast, some representations may be more cognitively difficult to process than others. They are the 'surprises' that contrast or contradict with our normal experiences, with the potential to trigger experiences of ineffable significance (Fabb 2021), as introduced in the previous chapter. Let us briefly review an earlier example (repeated below as (64)):

(64) The surface of the Earth is the shore of the cosmic ocean. (Sagan 1980: 31)

The mental image of the Earth #floating# exceeds our normal perception of both 'ocean' and 'Earth' in the sense that we usually do not see either the ocean or the Earth in this way. This

[59] According to Kolaiti (2020), artistic stimuli may give rise to positive cognitive effects as defined by relevance theory, but they may also possess some intrinsic values which make them relevant to an individual, regardless of whether or how many positive cognitive effects they lead to. In this case, the individual will find an artistic stimulus relevant due to the improvement or modifications on his perceptual or sensorimotor system. And the relevance that stimulus achieves will be of a perceptual nature. De Saussure and Wharton (2020), as well as Wharton and de Saussure (2023) further argue that a stimulus can find its relevance by activating a kind of experiential heuristic, with which an individual entertains a certain affective states. It is even possible that some stimuli may be relevant purely in an affective sense, namely, without giving rise to cognitive effects. See also Wharton et al (2021) for a discussion on relevance used in pragmatics and affective science.

means that at least some mental representations made available by the image are cognitively demanding to process. In return, the reader makes a quick guess: he metacognitively expects a large number of thoughts without necessarily entertaining any of them (Fabb 2016, 2021). This guess brings a feeling of significance, which is in essence a rough estimation of processing cost and potential modifications to one's mental environment.

The experience of mental imagery may even contribute to deliver the 'lingering' effects noted by Carston (2010b) and Wilson (2018), introduced and discussed in Section 3.4. Carston (2010b) suggests that the linguistically encoded meaning of the metaphorical expression in an extended metaphor may 'linger', allowing a slower and global processing about speaker's meaning. Wilson (2018) further remarks that it is the linguistic of form of the utterance that 'lingers', encouraging the reader to pay more attention to the choice of word in order to search for the most relevant and most accessible interpretation. According to the model proposed here, the use of <shore> and <ocean> allows the construction of *ad hoc* concepts SHORE* and OCEAN*, as well as images (or simulations in mind that pertains the perceptual properties of what is simulated) such as #shore# and #ocean#. The entertainment of images is based on a system of correspondences between the mental representation of shore and ocean on the one hand, and the kind of mental states or even sensations which we may have (easier) access to on the other. That is to say, the inferences about OCEAN* are not restricted to the linguistic form of this utterance. It can also be on the basis that having simulated representations of #shore# and #ocean# provides cues to representations associated with how we usually respond to shore and ocean, highlighting some aspects of the encyclopaedic knowledge (e.g., that the shore marks the starting point to the ocean, or that the ocean contains much more than we can see) but not others (e.g., that the shore might be a touristy area, or that there are dolphins in the ocean).

The expected results of perceptual and affective processing cannot be paraphrased into propositions, but they are not totally 'open-ended' either. They are carefully and purposefully designed, crafted, and then manipulated by the speaker, to the extent that the hearer is likely to experience these non-propositional effects in the way that the speaker intends them to. Imagery therefore provides a 'scaffolding' for generating such effects. This does not eliminate the possibility that individual readers will have their own interpretations that deviate from what is intended by the speaker, but that is almost entirely the responsibility of the hearer, hence it should not be confused with the speaker's intention. Then what is the relation between the

conceptual and procedural route of processing? How can something that is essentially non-propositional be communicated and influence cognitive activities that are assumed to operate on propositions? I have a few tentative responses to these questions.

First, the outcome of perceptual processing is not a holistic image, and there is no denying that speakers cannot directly make mutually manifest such images. What can be communicated, however, is a cue (or a set of cues) to a systematically structured set of perceptual representations which are directly associated with perceptual experience. At this point, the processing would be pre-conceptual and below consciousness. My hypothesis is that whether a person is aware of (having a visual mental image) or not aware of (as in the case of aphantasia) the outcome of such processing would be influenced by the saliency of its perceptual properties.

Second, as the 'dual-route' model of the amygdala suggests, cognitive processes can be roughly categorised as 'lower-level' or 'higher-level' (Garrido et al. 2012; LeDoux et al. 1990). Not only are these two types not necessarily independent from each other, but they both involve inference. According to the ostensive-inferential model proposed by relevance theory, both the utterance and the speaker's communicative intention activate a set of contextual assumptions which are tentatively accepted as implicit premises. The hearer then derives a contextual conclusion through inference which makes the utterance relevant as he expects and is therefore tentatively accepted as the implicit conclusion. At the same time, inference can also be performed on perceptual representations to influence how such information is to be taken. For example, when the pragmatically adjusted lexical meaning is incomplete, consciously experienced mental imagery and emotional responses may be indispensable for English language learners to generate the types of propositional effects in order to understand speaker's meaning (Ifantidou 2021a; Ifantidou and Hatzidaki 2019). The appraisal theory discussed in Chapter Five offers some good arguments on how emotions are processed as inference as well (see also Wharton et al. 2021). In fact, the framework of relevance theory has the potential to account for not just pragmatic inference but any other kind of inference, because the notion of 'relevance' is crucial and necessary regardless of the type of representation inference is operated on.

In terms of poetic metaphor, relevance theory has a neat and, in my view, very persuasive explanation about how the speaker's import (in a way, the metaphorical meaning) is recovered. But apart from that, a poetic metaphor also communicates beyond propositionality by guiding

the addressee to perceptually and/or affectively respond in a certain way. Let us use the following lines from the poem quoted at the beginning of this thesis to further illustrate (Liu 2003: 139):

(65) In a lone boat, rain cloak and a hat of reeds,
an old man's fishing the cold river snow. (Liu Zongyuan, 'River Snow', David Hinton, trans.)
孤舟蓑笠翁
独钓寒江雪

As a reader of the above excerpt, I may not have had an experience of fishing alone in a snowy river. As a result, I will not be able to make sense of this metaphor merely by drawing on direct background knowledge. My knowledge of fishing does not include the property *fishing the cold river snow* either. Following the ostensive-inferential model in standard relevance-theoretic account, I can draw a contextual conclusion from the use of <lone boat>, <old man>, and <cold river snow> together with the poet's communicative intention, and take it as an explicature that the poet depicts a serene scene on the river. However, this does not really help with understanding what the poet intends to achieve by this description. The reason is that instead of communicating a determinate meaning, the poet is perhaps more interested in communicating indeterminate feelings, impressions, and affective states that arise alongside the entertainment of an image.

Suppose after decoding the semantic content of the second line, I now have a mental image of #fishing the cold river snow#. This image is a mental representation. It also perceptually resembles the sensory input from the object it represents because the construction relies on retrieving perceptual constituents from memory. In this sense, this image is quasi-perceptual. #Fishing the cold river snow# further activates in my memory representations such as FISHING, SNOW, FISHING IN SNOW, as well as my bodily experience or memories of being in the snow. Other less relevant representations and experience are also made accessible, but they are less likely to be attended to (e.g., FISHING NET, or my dislike for tripping in snow). Those being attended to will further guide me through my search for conceptually relevant implicatures. They also direct my attention to what the poet intends me to feel, which I regard as perceptually or affectively relevant in this context. Similar processing is carried out on the #lone boat#.

Although I may hold in mind an image of a certain degree of determinacy, the fact that this image is now present permits access to a range of other mental representations or mental states, such as the representation of LONE BOAT, a feeling of loneliness, how I would respond to a quiet environment (either in general or under a specific circumstance), and so on. In this sense, the original mental image acts as a springboard to a more comprehensive aesthetic experience.

Now assume a hearer$_2$, say, a child who possess enough linguistic competence to understand the metaphorical meaning of the utterance in (65)(65), but has not yet experienced the types of affective states potentially arise from here (for example, loneliness, frustration, serenity, etc.), or what he has experienced is not as strong. This child probably would not find the metaphor as relevant, or he may find it relevant but in a different manner. Here we see an example of the relevance of a metaphor being gauged not just by how many cognitive effects it raises, but also by how it makes the hearer feel. The hearer does not need to imagine himself being the speaker/poet, nor does he need to 'duplicate' the psychological state(s) the speaker/poet is in. What he does is to construct perhaps a type of simulation with regards to his own cognitive and psychological environment, which makes the metaphor relevant *to him*.

In a slightly less poetic setting, consider (66), which contains a metaphorical statement not uncommon in everyday language:

(66) Anna is my light in the darkness.

Understanding the intended meaning of this metaphor does not *demand* the construction of an image.[60] I can follow the standard ostensive-inferential model based on *ad hoc* concepts construction, contextual assumptions and implications to infer that the speaker means that Anna is an important person who provides the speaker with comfort and guidance in times of difficulty, or something along the line. However, this metaphor does *permit* the construction of an image of #light in the darkness#, which may also be what the speaker intends to communicate. In this case, the speaker is intentionally making manifest a certain aspect of this image or showing a certain aspect of it in a non-trivial way. In Kolaiti's model, this is the producer-oriented 'aspectual representation' (2015: 27), in contrast to incidental creatorship

[60] I am using 'demand' and 'permit' here in reference to Mitchell Green's (2017) distinction between image-demanding metaphor (IDM) and image-permitting metaphor (IPM) based on whether or not the understanding mandates the construction of a mental image.

such as when a child accidentally says something 'poetic'. In Green's model, this is the 'self-expression' (2017: 38) in which the speaker designedly shows her cognitive, affective, or experiential states. What I suggest is that the speaker who makes the claim in (66) encourages the hearer to construct a mental image as a way of better communicating the perceptual dimension of her intention such as a feeling of comfort.

Indeed, there is a risk of such attribution, that is, whether the speaker does have it in mind to communicate an image along with the explicature and implicature. On the one hand, I can construct an image which prompts a certain interpretation however I see fit; on the other hand, the speaker makes the final decision in terms of what is actually intended. Therefore, we are not talking about casual attribution here. However, the communication may be more efficient, and perhaps even easier for language learners, if the conceptual content is accompanied by non-propositional elements. Consider using facial expression together with an utterance. I can simply say a few encouraging words to John who is going to have an exam, or I can say the words together with a smile. Is the smile a necessity for John to understand what I mean? No, the utterance alone would give enough clues to render positive cognitive effects. But by having John recognise and attribute that smile to my state of mind, I am simultaneously communicating non-propositional effects alongside the propositional cognitive effects. The result is an overall enhancement in John's experience of my intended contents. He is also more likely to believe that my encouragement is sincere. The key concern here is whether the smile or image positively contributes to speaker's meaning. If the hearer falsely constructs an image that creates a conflict, or if John mistook my smile as a smirk, then the communication cannot be taken as successful at all.

The standard relevance theory tends to view the accompanying experience of mental imagery as a result from linguistic processes. For example, Carston (2010b: 317) remarks that images are better seen not as communicated but as 'activated or evoked when certain lexical concepts are accessed and may be further imaginatively developed (by, for instance, shifting mental focus or perspective, zooming in on detail, or forming a connected dynamic sequence) as the conceptual content of the utterance is recovered'. It follows that in some cases, we consider a metaphor as producing impressive effects for a reason that lies outside the realm of M-intention, hence beyond the scope of pragmatics. However, Carston continues to say, 'as well as being attended to for its own sake, imagery may function as a source of thoughts about the metaphor topic that do fall within the author's overtly intended meaning and the author may intend or, at

least, expect the imagery to be so used' (ibid.: 317). That is, while she acknowledges the possibility for mental imagery to play a role in communicating speaker's meaning after all, she nonetheless suggests that the understanding of speaker's meaning can only be grounded in truth-conditional content, to which mental imagery does not belong.

This thesis shares the relevance-theoretic account's acknowledgement of the connection between the derivation of mental imagery and metaphorical reading. What it disagrees on and further advocates is a stronger stance, that the construction and entertainment of at least some images are M-intended. This belongs to an overarching argument that the boundaries of pragmatics can and should be pushed forward. Images thus serve the purpose of 'pointing to' aspects the speaker wants her hearer to attend to, which is directly related to the speaker's reflexive intention in the first place. As a result, such images would contribute to the online processing of a metaphor. Imagery can help make manifest a range of weakly communicated implicatures, it can also provide basis for inferential operations. Inference in this sense does not reply on logical derivation of a conclusion from assumptions, but it is made possible because the perceptual processing is systematically structured. If the results are strong enough to reach awareness, they can be explicitly manipulated to yield conscious mental images.

6.5 Summary

Our understandings of mental imagery have gone through several stages, from the pre-scientific views that tend to focus on the imagistic or perceptual properties, to the philosophical treatment of mental imagery as ideas, to an imagery revival in recent decades due to a large amount of empirical data from psychology and cognitive science. The analogue-propositional debates bring to attention new ideas about the nature and mechanism of mental imagery that challenge traditional accounts. Still, I do not attempt to resolve the debate by proposing an entirely new definition: I suggested a modified treatment of the concept of 'mental imagery' to integrate both conceptual and procedural processing in verbal communication.

In this chapter, I started with an overview of four major dimensions of mental imagery that could be summarised from available data and theoretical argumentation. By doing so, I adopt a working definition of the term that my discussion is based on. I then addressed the main arguments from both analogue and propositional views, suggesting that there were at least some aspects of mental imagery that could not be fully explained by the propositional view,

and that there were probably some aspects that had been underestimated by the analogue view. I also introduced the concept *xiang* ('imagery') from the Classical Chinese account and its relations to *yan* ('speech') and *yi* ('thought/intention'). As I further presented, the '*yan-xiang-yi*' paradigm also suffers some major problems, so it could not replace current frameworks provided by cognitive science and pragmatics.

I suggest that we see mental imagery as being involved in a dual-route processing. Following a faster and more direct procedural route, constructing and entertaining mental imagery guides the addressee's attention to certain aspect(s) of the utterance by making a set of mental representations more manifest than others. Following a slower but more refined conceptual route, some of these mental representations go through conceptualisation and higher-level inference of speaker's intentions. On the one hand, the non-propositional effects directly brought to mind by mental imagery are also part of what the speaker intends to communicate. On the other, the hearer is more likely to pay attention to certain aspects as a result of entertaining mental imagery, creating an iterative processing loop. Therefore, mental imagery should be taken as speaker-intended, even if she cannot dictate what specific image(s) her hearer experiences.

Dual-route processing is by no means a new or unusual thing, and it has been hypothesised to be the model for many cognitive processes such as perception, attention, memory, and reasoning. In many of the traditional models, when mental imagery is involved in these cognitive processes, it is usually considered as a by-product of other activities, something positioned towards the output end waiting to be triggered or activated. My proposal is that mental imagery plays a more active role in verbal communication, especially in cases such as poetic metaphor where achieving non-propositional effects can be as important as, if not more important than, achieving cognitive effects. It serves the purpose of 'pointing to' constituents from experience that perceptually resemble the sensory input, which allows access to a range of representations and provides basis for inference. I do not claim that mental imagery is the only way to achieve non-propositional effects. There are cases of metaphorical expressions where emotions can be communicated without resorting to mental imagery (for example, by using interjections alone). Nonetheless, mental imagery can be a useful tool in the discussion of how poetic metaphors achieve their impacts on readers. In the next chapter, I will further explore where those impacts come from. By drawing insights from grounded cognition, I suggest that we consider a poetic metaphor to be 'impactful' or 'impressive' not just because

it brings into our attention a large array of thoughts, but also because the mental imagery we entertain provides direct access to our bodily experience and the associated psychological states. In this way, a poetic metaphor is both understood and ‘felt’.

Chapter Seven: Integrating the conceptual and procedural dimensions

7.1 Introduction

We have all experienced moments when something 'awakens' an emotional memory of a certain event in the past, or perhaps 'triggers' a perceptual episode that greatly impacted on our senses. That something may be a direct stimulus, such as the familiar fragrance of a shampoo we liked back in early childhood or the voice of an old friend with whom we have not been in contact for many years. It may be vaguer and indirect, leading to chills when reading a poem about traveling far into the endless time and space. Research has provided insights into how the brain recalls and reconstructs memories involving emotions and sensations. However, according to van Campen (2014), there is a significant lack in research on the corporeal aspects of remembering of this sort. A good example comes from Marcel Proust's novel *In Search of Lost Time (À la recherche du temps perdu)*, which has been considered a biography, a collection of love stories and tragedies, a portrait of the *fin-de-siécle* Paris, and a study of human memory (van Campen 2014). In this book, Proust records a blissful experience the main character Marcel had when the taste of a madeleine cake with tea brought an unusual aesthetic experience that extended to the fond memories of his childhood. This aesthetic experience is not an exact re-enactment of what Marcel experienced before, but more a combination of memory, imagination, and sensory impression. Proust wrote that the experience could only be awakened through a mental picture, as 'in the complicated structure of our emotions, the image being the one essential element' (Proust 2013: 96).

Proust was probably using the word 'mental picture' in a rather general, underspecified way – at least not in the same way as the term mental imagery is understood by cognitive scientists. However, it does raise a question: Why call it a mental picture and not anything with logical properties? What is so special about content that can only be communicated via a 'picture'? From a linguistic point of view, what I am interested in is this: given that it is impossible to completely know or feel what is happening to another individual, can we attribute what the reader feels when reading to the design of the writer? In other words, are impressions, feelings, and emotions communicated directly by the writer as part of her intention? Previous chapters have shown that a pragmatic theory should also be able to account for the communication of non-propositional contents in many cases of verbal communication. This task, however, cannot be completed to satisfaction by resorting only to propositions. Emotions, feelings and images

do not bear truth values, yet they seem to be also included in the speaker's intention. This thesis suggests that the speaker not only intends her hearer to *know* the types of non-propositional contents she's communicating, but she also intends the hearer to *feel* or *experience* them directly. How the hearer responds directs their attention to focus on certain aspects of the text, which affects how the text is to be processed.

According to relevance theory, comprehension is made possible due to the identification of resemblance between mental representations based on shared logical properties and contextual assumptions (Sperber and Wilson 1986/1995). Instead of full-fledged concepts, most words may encode 'concept schemas, or pointers to a conceptual space' (Carston 2002: 97) in which the actual concept the hearer has is most likely a pragmatically adjusted one, an *ad hoc* concept, which is close enough to the one the speaker communicates (see Chapter Three for a relevant discussion). The dual-route processing model proposed in Chapter Six, in comparison, seeks to broaden the scope of this pragmatic theory to integrate the conceptual and procedural dimensions in metaphor comprehension. However, there is an intuitive distinction between these two dimensions. The question I will try to answer in this chapter is this: Is it possible – and if so, how – to bring the propositional and the non-propositional together in a communicative context?

The aim of this chapter is to provide further support for the dual-route processing model outlined in the previous chapter by exploring the possibility of incorporating some aspects of grounded cognition theories into the relevance-theoretic ostensive-inferential model. This will provide further support for the dual-route processing model. The two candidates from grounded cognition I will discuss in detail are Antonio Damasio's (1994) account of emotions and feelings, and Lawrence Barsalou's (1999) *perceptual symbol system*, both of which emphasise the crucial role of perceptual resemblance in higher-level mental activities. I suggest that apart from a conceptual resemblance, the hearer also accesses non-propositional elements that resemble those expressed by the speaker. The emotions and images are close enough in terms of their non-propositional effects, leading to reactions similar enough to those the speaker may have had to justify an interpretation.

I start with an overview of the grounded cognition in Section 7.2. Note that there are a variety of theories endorsing the views that human cognition is situated, grounded, and embodied, but not all of them may be incorporated into the model proposed in this thesis.

Section 7.3 introduces Barsalou's (1999) perceptual symbol system and his claim that it is capable of accounting for the entirety of human cognition. Some people may find this view too radical. Others may feel that it entails a step back to Empiricism, especially those who view information processing as essentially consisting of computing symbols according to certain rules, either logical or syntactical. It may indeed be the case that this model is proposed to explain the empirical data Barsalou collected in his own studies, but it does provide a new perspective to consider cognition in a light that is different from the Fodorian view introduced in Chapter Four.

Section 7.4 compares the grounded approach to the relevance-theoretic approach by revisiting the notions of encyclopaedic information and *ad hoc* concepts, first introduced in Chapter Three. The purpose is to argue that understanding communicated meaning may benefit from the integration of procedural processing, in the sense that the hearer is likely to process the decoded information in specific ways as is guided by its perceptual or affective relevance to what is available to him in his personal history. The result is the activation of a particular set of mental representations that are perceptually or affectively relevant in the current context.

Section 7.5 readdresses questions about our experience of literature and art. Drawing inspiration from Damasio's (1994) work on emotions and feelings, as well as the previously discussed research on mental imagery, I argue that the dual-route processing model contributes to the current pragmatic theory by acknowledging the non-propositional aspects of communication. Propositions are not the only thing involved in communication. We understand speaker's meaning, but we also feel what the speaker feels and intends us to feel in a more direct manner. I summarise the main arguments and implications of this chapter in Section 7.6.

7.2 Grounded cognition: main arguments

It is traditionally assumed that words encode concepts. In an utterance 'John's date is a block of ice', <ice> encodes the concept ICE, which is held as a mental entry that further supports the construction of the *ad hoc* concepts ICE*, ICE**, and so forth. Understanding the meanings of words is a mental operation on amodal symbols, following certain computational rules. Both Chomsky and Fodor believe that human cognitive system is equipped with certain features for us to produce and understand languages. For Chomsky, this is the premise for his proposal of

linguistic competence that users of a certain language possess, as well as to distinguish grammatical sentences from ungrammatical ones (Chomsky 1957, 1965/1985). For Fodor (1975), we all have a (partially) innate Mentalese, a language of thought. Entries in Mentalese are innate, and that one cannot learn to acquire a conceptual system more complex than the one that is already there. The enrichment of this system is fundamentally 'a function of maturation' (Fodor 1980: 149).[61]

Grounded cognition theories, on the other hand, reject the view that cognition is a computational operation on amodal symbols in a modular system independent of those supporting perception, action, and introspection (Barsalou 2008, 2012). The theories come in many forms, but the main hypothesis is that the resemblance between a mental construction and its associated perceptual input play an essential role in cognition. For example, we know the concept CAT matches with the property *cat* because there is a multimodal record of neural states underlying a two-stage experience: seeing a cat and seeing a cat as a *cat*. The first stage is quite possibly unconscious, but the characteristics of such an experience have been registered and roughly processed. These characteristics are multimodal, so by accessing another simulation of cat, we also access this multimodal information to support categorisation and inference. The main task of grounded cognition is to explain how a perceptual mechanism operating on modal simulations, body states, and situated action can underlie a conceptual structure. At which point do we see the convergence of perceptual and conceptual processing? More relevant to this thesis, how can the (quasi-)perceptual experience from the neural activities in early sensory cortices be integrated with the conceptual network for the former to play a role in verbal communication?

In the field of linguistics, there have also been attempts to challenge the amodal theories arising from the Cognitive Revolution. Cognitive Linguistics theories – most prominently those advocated by Lakoff (1987), Johnson (1987/2013), Langacker (1987), and Talmy (1988) – aim at providing support for a perceptual grounding of communication and cognition. Grounded cognition concerns the way mental representations obtain their content (why CAT is associated with *cat*). It deals with how internal representations are shaped by external, modularity-specific

[61] Fodor modified his theory over the years. He once suggested that what is innate is the mechanism for concept construction, rather than the concept itself (Fodor 2005; see also Margolis 1998). The acquisition of new concepts is done through processes such as imprinting, triggering, parameter setting, rather than through a learning process of forming and confirming hypothesis. But he ultimately returned to a more radical view that '*no* concept can be learned, primitive or complex' (Fodor 2008: 138, original emphasis).

factors that are considered to be part of the feedforward nets, or what Fodor (1983) calls the input system. The Cognitive-Linguistic approach to the relationship between metaphor and cognition has been discussed in detail in Chapter Two. As I noted, the notion of cross-domain mapping (i.e., conceptual metaphor) deals with the conceptual basis for metaphor interpretation, rather than the online processing of utterance. It is also criticised for being arbitrary due to its *ad hoc* nature, and the predominance of case study concerning image schemata makes it difficult to test out this hypothesis on a broader scale. However, we may find some insights from cognitive simulation theories, in particular, Antonio Damasio's (1994) account on emotions and feelings, Lawrence Barsalou's (1999) perceptual symbol system, and those following these two traditions.

When integrate their ideas with the current inferential model of communication, we may understand how an iterative processing loop using feedforward and feedback information can guide and constrain the participation of non-propositional contents. In a feedforward sweep, the (usually perceptually-based) imagery provides cues to access certain aspects from an individual's experience to focus on. In cognitive psychology, this bottom-up process is thought to be modulated by the individual's purpose and the environmental state around him (Basso and Olivetti Belardinelli 2006). These selected mental representations and the associated mental states will be relevant or more relevant to the individual and therefore remain active. In an alternative architecture, higher-level information also constrains and facilitates early stages of utterance processing through feedback mechanism. That is to say, the relevant mental representations and mental states guides an individual's attention to be focus on certain aspects of the utterance in a top-down manner. And this feedforward-feedback processing loop may be recurrent, until the individual satisfies his expectation of relevance. This model thus complements a purely propositional inferential model.

Based on clinical data from patients suffering from brain lesions, Damasio suggests that conceptualisation is rooted in bodily experience, including body structure and operations involving the whole body or part of it (Damasio 1994; Damasio and Damasio 1996). He believes this avoids the homunculus fallacy while also maintaining some degree of stability that is crucial for concept formation. He hypothesises a convergence zone, 'a storehouse of knowledge in the form of dispositional representations, ready to be activated' (Damasio and Damasio 1996: 21). It records the combinatorial arrangements of features of individual sensory

or motor activities, and therefore provides principles upon which different cognitive operations can be performed in the same functional cerebral regions (Damasio 1989).

Damasio's hypothesis challenges the view that cognition works on an amodal system that relies on logical derivations. In an amodal system, a conceptual representation is assigned to its referents in an arbitrary manner without resemblance to perceptual states. The property *cat* is mentally represented as CAT, which is encoded by <cat> in English and <Katze> in German. Seeing a cat activates the link between a perceptual state and a conceptual representation, but they are independent from each other and remain distinct in kind. However, Damasio (1994) argues against such a sharp discontinuity and instead suggests that our concept of the world is image-based. Images, whether they are perceptual, recalled from memories, or plans of the future, are built directly on neural representations, which occur in early sensory cortices and are schematically organised. They form the bedrock for reasoning, categorisation, knowledge retrieval and decision making (Damasio 1994; Damasio and Damasio 1994). Furthermore, the connection between a concept and the body can also be modified due to new experiences or socio-cultural factors. In this way, our mind can create a nonverbal narrative about body-world interactions, accompanied by associated sensory and motor reactions. What happens to the neural system influences how we respond and make sense of the world.

Following the same line of thought, the perceptual symbol system is proposed to reconcile perceptual and conceptual representations involved in all kinds of mental activities. It is rooted in the basic claim that cognition is inherently perceptual (Barsalou 1999). As will be introduced in more detail later, patterns of neural states registered from perceptual modules, or perceptual symbols, are at the core of constructing not just mental imagery but also our entire conceptual world (Barsalou 1999). Concept acquisition is therefore the result of our interactions with the world, and our ability to use a concept is made possible by a resemblance between the content of that concept and its associated conceptual label. The bottom-up patterns of activation in associated areas during a perceptual experience can later reactivate these areas in a top-down manner, providing basis for mental activities such as categorisation and conceptualisation (Barsalou 1999).

Regarding the stability issue of concepts, the perceptual symbol system aims at explaining it in terms of physiological factors. In Fodor's (1998) opinion, what stabilises the content of a concept is the link between that concept and what it denotes. This has nothing to do with the

kinds of beliefs or assumptions people may have about it. What Barsalou proposes and tries to justify with empirical data is that the conceptual link should be replaced with an automatic activation mechanism rooted in the same (or close enough) neural network activity (or at least one that is similar enough). In other words, perception parses and registers certain characteristics of a certain entity, and such information is partially preserved to match the entity with a conceptual label. As a result, the 'label' for the concept CAT matches with the property *cat* and the entity cat. The multimodal records of neural states that underlie perception are referred to as perceptual symbols. They can also operate on introspection – including representational states, cognitive operations, and emotional states – to focus on a specific aspect of the stimulus and store it for later use (Barsalou 1993, 1999).

Barsalou (1999) then goes as far as suggesting that we drop the term 'concept' altogether, because concept types *qua* abstract amodal symbols are not necessarily involved in processing individual tokens. This contrasts with the view held by Fodor and Pylyshyn (1988), who argue that amodal symbols are processed in sentence-like structures for conceptualisation. As far as Barsalou is concerned, the traditional concept-individual relation can be replaced by the simulator-simulation relation. The perceptual symbols derived from an experience do not exist as independent information entries. They are organised in a specific way to form simulators, which is equivalent to concepts, both concrete and abstract ones. Simulators are activated accordingly in response to contexts, which may or may not be the same as the one from which their componential symbols derive. Changes of contexts lead to the changes in activation patterns. Simulators enable the cognitive system to run different simulations of an entity or event in its absence, much in the same way that mental imagery is constructed in the absence of external stimuli. This establishes a continuum between conceptual and perceptual experiences. How an entity or event is perceived will be integrated into schematic perceptual and introspective states, which will automatically activate coherent inferences.

In relevance theory, the concept as it is defined by Barsalou is usually referred to as the lexically encoded concept. As has been introduced in earlier chapters, according to an inferential model, metaphor comprehension involves a kind of resemblance not on the object level but on the concept level. Reflecting on works on categorisation in the 1980s, including Barsalou's (1982, 1983) treatment of *ad hoc* concept, relevance theory agrees that the conceptual files accessed during verbal communication needs to be contextually adjusted to better match what is communicated. There is a resemblance of interpretation of the concept

intentionally communicated by the speaker and the one constructed by the hearer (Carston 2002). In order to derive implicatures from the metaphor 'John's date is a block of ice', the hearer accesses a wide range of assumptions about ICE activated by the utterance. Via backwards inference he selects a particular set to construct an *ad hoc* concept ICE*, which will warrant his choice of contextual conclusions. The characteristics and the indeterminacy of such characters are preserved in the *ad hoc* concept. The more creative a metaphor is, the less determined which set of assumptions is endorsed by the speaker, the weaker the implicatures are communicated. As a consequence, the hearer simultaneously constructs several *ad hoc* concepts ICE*, ICE**, ICE***, and so forth with subtle differences. He then chooses the one that is most relevant to, hence good enough, for the context.[62]

Indeed, as Barsalou (2008) noted, although psychologists and cognitive scientists have long acknowledged that simulations are widely involved in working memory, it is still considered radical to take simulations as forming the basis of conceptual representations. This thesis does not suggest we can simply replace the inferential model altogether with the most extreme arguments of grounded cognition theories. To propose a synthesis between Barsalou's model and that of relevance theory is to say that the connection between what is linguistically encoded and what is constructed on-the-fly operates on conceptual and perceptual levels. Attending to both types will give rise to roughly two types of intended effects, and there can be mutual influence between the two routes. In the following sections, I will further introduce how perceptual symbols are used to account for concept construction as is proposed by Barsalou. I will also revisit the notions of *ad hoc* concept and encyclopaedic properties mentioned in Chapter Three to examine some issues raised by relevance theorists and philosophers alike.

7.3 A grounded view on concept construction

Concepts are generally assumed by both philosophers of language and linguists to be the building blocks of thoughts that have extensions. They support mental processes such as categorisation, memory, learning, inference, and decision making. Seeing concepts as mental representations is the default view of concept in cognitive science, and this view is also

[62] See Chapter Three for a summary of the *ad hoc* concept approach to metaphor comprehension and the associated problem of emergent properties.

accepted by those linguistic theories taking a cognitive approach.[63] This view finds its starting point in the representational theory of mind (RTM), and considers concepts to be mental objects that exist in the mind. The grounded view of cognition introduced in the previous paragraphs also agrees that concepts or what it considers to be the equivalent of concepts are genuine mental representations, but rejects the claim that concepts are amodal. This section aims at unpacking the three notions crucial to Barsalou's approach – perceptual symbol, simulator, and simulation – and how we come to possess 'concepts'.

The perceptual symbol system is proposed based on the main arguments made by grounded cognition with the hope to provide a common representational system underlying both perception and conceptualisation. Within this framework, concepts as mental representations are neither universal nor decontextualised, but rather situated and local (Barsalou 1999, 2009; Barsalou et al. 1993). This is to say that a person's concept of C represents C in the particular situation where it occurs, and it only represents individuals of C in that situation.[64] This view rejects concepts as amodal symbols assigned arbitrarily to match mental representations of their referents. Instead, it attempts to explain concepts as grounded in episodic and generic situations, and suggests that situations consist of perceptual symbols exclusively. Indeed, Barsalou's discussion of concepts mainly focuses on using an inherently perceptual representational system to explain how a concept acquires its content, for which he finds support from his data. What interests linguists, namely, the relation between concept and word meaning, as well as the role a concept plays in understanding speaker's meaning, have been largely left out. My goal is to explore whether and to what extent a pragmatic theory may benefit from this grounded and situated view. My tentative suggestion is that at least some ideas may be helpful to explain the procedural aspects of verbal communication.

Perceptual symbols are records and represented patterns of activation of neuronal mechanisms in a certain functional region of the brain when specific basic operations are performed

[63] There are two other views on concepts in contemporary philosophy. One describes concepts as abilities that are particular to cognitive agents (Dummett 1993; see also Wittgenstein 2021). According to this view, to have a concept C means to possess the abilities to discriminate individuals in C from those in non-C, and to perform inferences about C. Yet another view describes concept as abstract objects at the level of the Fregean senses (Peacocke 1992). It suggests that a concept is the content of an expression that mediates between thought and its referent. A word (e.g., <unicorn>) can still have a 'meaning' even without a referent, as long as it has a sense. In this thesis, I follow relevance theorists and most cognitive scientists to take concept as mental representations.

[64] The word 'situation' (and 'event' in some other works following the same line of thought) refers to cognitive representations rather than a scenario in the world (Barsalou et al. 1993). The argument that concepts are situated does not mean that concepts are derived from a real situation but how that situation is represented in the mind, which may change over time.

(Barsalou 1999).[65] They are a type of mental representations that occur in the early stages of cognition. Instead of representing a brain state at a given time in a holistic manner, a perceptual symbol only represents a coherent aspect of that state. However, these symbols are likely to be arranged schematically because the way selective attention is focused tends to be stored in long-term memory (Barsalou 1995; Cowan 1988; Nelson et al. 1979). As a result, mental representations made accessible by selective attention are stored schematically to perform basic symbolic functions (Barsalou 1999). During a perceptual experience, for example, a visual experience of seeing a cat, there are two phases of information processing. First, there is a necessary neural representation of the physical stimulus, which operates largely on an unconscious level. The reflected lights from the cat arrive at retina, sending an electrical signal that travels to the cerebral area responsible for visual processing. This is the 'seeing' phase, in which we have not yet associated the input with what it represents. Meanwhile, there is an optional conscious experience in which we know we have seen something, and that something matches the representation we hold in our memory that is usually associated with the concept CAT. At this point we recognise what we see as a cat.

We do not become aware of everything our visual system registers, but this can nonetheless support basic operations such as inference. The 'echoic buffer' introduced in Chapter Six hypothesises an area where these unconceptualised representations are temporarily held (Fodor 2007). Our attention in seeing a cat is selective to focus on just a subset of the perceptual state, such as which neurons fire in which specific way. This subset – we may understand it as a record of the activation pattern of neural network when seeing a cat – is then stored permanently in long-term memory which can be retrieved later when we see another cat to function symbolically in reference to CAT. Perceptual symbols and the perceptual state that produces them are located in the same system, making these symbols modal and analogical in partial correspondence to the perceptual state. This claim sharply contrasts with that made by researchers such as Pylyshyn (1973, 2003), whose model argues that a perceptual state is 'translated' and stored as conceptual representations with sentence-like structure. What is later

[65] Barsalou (1999) suggests that perceptual symbols, once stored, can stand in for referents in the world and enable symbol manipulation. This is to say that they function in the same way as amodal symbols do in a traditional system, making the later redundant. With regards to terminology, it seems that the word 'symbol' is chosen to reflect this particular aspect of the function. It does not imply that perceptual symbols are a type of the symbol that is usually discussed in semiotics.

reactivated during new (quasi-)perceptual experience such as forming a mental image is this inherently different and arbitrary representation from the amodal central processing system.

Such a perceptually representational system starts with recording, but its output is a record of neural activities rather than a complete image. Perceptual symbols are componential rather than holistic, in a manner analogous to the way conscious mental imagery is formed by putting together relevant components rather than retrieving an image as a whole (Kosslyn et al. 1995; Roth and Kosslyn 1988). This is what distinguishes a perceptual symbol from a photograph, which captures all the details of what it represents without interpretation, hence independent from the conceptual system. More importantly, perceptual symbols are not restricted to sensory modalities. They can describe aspects of any perceived experience, including proprioception and introspection (Barsalou 1999). This allows perceptual symbols to not only interact with but also underlie basic operations for complex cognitive activities.

According to Barsalou (1999), perceptual symbols are ubiquitous in human cognition, but they do not exist as independent entities. Since individuals in a category tend to have statistically correlated properties, future encounters with individuals from the same category are likely to activate the same set of perceptual symbols as in previous experience.[66] These symbols are schematically distributed and arranged in specific ways, forming a *simulator,* which prompts the construction of modal re-enactments called *simulations* to stand in for an event in its absence (Barsalou 1999, 2009). Similar to a concept or a type, a simulator consisting of distributed symbols carrying information from multiple modalities can provide basis for categorising an individual as a token of a type. Once a subset of the components of a simulator is activated in response to an event, a simulation of that event is available in working memory. Since different situations reactivate different perceptual symbols (neuron patterns), the subsets being activated is also different, so that the simulations they construct can represent specific instances of a category. For example, we have a simulator of *bicycle* stored in memory as the result of corresponding perceptual symbols being organised. This simulator can run a simulation $bicycle_1$ in the context of mountain biking trip, and a simulation $bicycle_2$ in the context of a repair shop. To some extent, this mechanism functions like an exemplar in

[66] These properties vary depending on the size of the category. For example, the statistically correlated properties one can extract from the category of CAT might include *carnivore*, *retractable claws*, and *purring*; whereas those extracted from the category of HOUSE CAT might include *domesticated*, *affectionate*, and *child friendly*. 'Grandmother's late tabby cat' is an individual that belongs to both categories, but the perceptual symbols being activated depend on the context in which this individual occurs.

prototype theory (introduced in Chapter Three) which stores both idiosyncratic properties of an individual and information of the situation where it occurs. However, Barsalou (2009) comments that simulations can be more flexible than an exemplar, thus not all properties of the exemplar (if there is indeed one) are always accessed. Instead of attributing prototypical rankings to some inherent features of the concept, this approach, following Barsalou's work on *ad hoc* concepts in the eighties, suggests that the 'content' of a concept on a given occasion is constructed on-the-fly by picking out the only a subset of what is schematically stored in the memory.

As mentioned above, a simulation rarely consists of all the available components of a simulator. This means that there is a selection process that is likely to be influenced by contextual factors, making it biased and distorted. This may raise a serious challenge if the simulator is expected to be the equivalent of concept, because at least some degree of stability is necessary to ensure the concept has a 'meaning' that can be understood and communicated. Barsalou (1999) acknowledges this and argues that if different simulations represent specific instances of a concept, then the simulator they derive from can stand in as the unified term for that concept. If our conceptualisation is situated and stored in long-term memory, then it can support situated actions and predictions. Similar situations will activate the relevant situated conceptualisation from memory to produce anticipatory inferences (Barsalou et al. 2018). Common cognitive systems, common experience in the world, and conventions allow people to acquire similar but not the same simulators. This means that two people can simulate each other's conceptualisation accurately enough for the concept to be stabilised, while also maintaining a certain degree of idiosyncrasy for *ad hoc* construction.

Another challenge to this grounded view of concept construction comes from abstract concepts which do not find their cues directly from perceptual experiences. Barsalou et al. (2018) suggests that the distinction between concrete and abstract concepts might not be as useful as has been argued. Instead, we should consider how concepts both represent and integrate components of situations. During integration, an abstract concept such as TRUTH (at least certain aspects of it) may become concrete. Consider the following situation: Anna makes a claim that the Earth is a sphere. Ben, who believes in scientific research about the Earth, confirms that is the truth. According to the perceptual symbols system (Barsalou 1999; Barsalou et al. 1993; Yeh and Barsalou 2006), the concept of TRUTH, encoded by Ben's use of <truth> refers to his belief that Anna's claim is able to accurately represent the world as it is.

Ben understands TRUTH against the entire context of this conversation rather than as an isolated category. He focuses on and thus highlights certain properties of TRUTH (e.g., something being a truth means it is an accurate representation of the world). He also activates introspective states to accept this instance to be a token of TRUTH. It is due to situations like this that Ben can develop his knowledge about an abstract concept. The idea is not to deny that concepts are abstracted, but to argue against the traditional view that information about background situations is discarded once a concept is abstracted (Yeh and Barsalou 2006).

Apart from activating a subset of the components of a simulator it derived from, a simulation also extends beyond this subset to interact with additional information such as background settings, goal-directed actions, and introspective states (Barsalou 1999, 2012; Niedenthal et al. 2005). When organised together with such information, the simulation not only maps onto an instance in the world, but also makes accessible the relevant actions and mental states to produce anticipatory effects. Therefore, a simulation of 'grandmother's late tabby cat' contains information about this specific cat, the actions usually involved in relation to the said cat, as well as the associated introspective and affective states. In this way, simulations and situated conceptualisations function as sources of prediction across the spectrum of cognitive activities, including perception, action, implicit memory, working memory, conceptual processing, language, and social cognition (Barsalou 2009). We use what we hold in our memory to predict what is most likely to happen in similar situations, and to integrate relevant simulations into new situations. The simulated prediction happens in the same modality where simulations are constructed, therefore the prediction can be matched with the actual experience to assess its accuracy. The result of this assessment will also provide effective guidance for activating conceptualisation – if the prediction matches the perception, it can be trusted; if not, a new conceptualisation is required (Barsalou 2009).

According to Fabb (2021), our schematic representation rarely matches exactly what we experience in the world. This leads to variations or even a mismatch between the general (predicted representation) and the specific (perceived representation), leading to the so-called 'prediction error' (Fabb 2021). This discrepancy happens regularly, showing a normal distribution with most of our daily experience falling within the normal range of discrepancy. Under certain circumstances, the mismatch may exceed this range and becomes cognitively

difficult to process; it is likely to trigger 'experiences of ineffable significance' (Fabb 2021).[67] On a personal level, the results may be treated as an experience of the sublime, an epiphany, and the thrill – all considered as kinds of surprise explained by an ordinary psychological theory (Fabb 2022). Surprises can be caused by either radical alterations of what is considered to be a standard example, or by perfect examples and uncanny doubles. Fabb (2021) suggests that the particular types of surprise which lead to experience of ineffable significance involve an epistemic feeling. Instead of knowing how or why something is profound in an objective or general way, we make a metacognitive assessment about how much cognitive effort it is likely to cost and how many cognitive effects may arise. This quick but rough judgment is enough to justify our expectation of relevance (Fabb 2016). What are understood by relevance theory as 'poetic effects' might be in fact a variant of the feeling of significance (Fabb 2021).

Exploring the perceptual symbol system may provide theoretical and empirical support for the dual-route processing model proposed in this thesis. It highlights the importance of the procedural aspects of cognition, which are usually considered as either peripheral or a by-product of the inferential process. However, I am taking a conservative stance here. Instead of saying that human cognition is inherently perceptual, I suggest that conceptual and perceptual processing – which is one way to process procedural information – are both involved in communication. They produce effects that are propositional and non-propositional in nature. These two aspects are not independent from each other. They produce constraints by which the addressee may experience the effects that the speaker/writer intends. Mental imagery is one such example where procedural processing may influence, and also be influenced by, conceptual processing.

Mental images, both conscious and unconscious ones, can perhaps be understood as cases of simulations that are used to support inference and prediction in specific contexts.[68] Theoretically speaking, a simulation can be conscious or unconscious. In fact, Barsalou (2009) suggests that there may be more unconscious re-enactments than conscious ones throughout basic and complex cognitive activities. Indeed, conscious mental images do not always rise,

[67] See Chapter Five for an example of using this model to explain the possible non-propositional effects in metaphor reading.

[68] When mental imagery is mentioned in Barsalou's model, it usually refers to the conscious mental representations associated with sensory modalities people report to have experience. I would suggest expanding the scope of definition so that the result of unconscious perceptual processing can also be termed as mental imagery. See Chapter Six for a discussion of the possibility that some mental images may be unconscious.

and not everyone will have them. A typical example is aphantasia. It is certain that there is a percentage of population who has aphantasia, and there has been an increase of studies on this phenomenon in recent decades. However, it is important to note that aphantasia only affects conscious visual processing. It does not eliminate the possibility that there is still unconscious visual processing (and by association general perceptual processing) below the threshold of consciousness. In particular, aphantasia could be the result of having images that are too weak to reach consciousness, whereas perceptual processing is still available to support basic inference (Keogh and Pearson 2018; Zeman et al. 2010). As Barsalou (1999) comments, there is no *a priori* reason why perceptual processing must be conscious if it underlies the entire framework of human knowledge. A conscious mental image might just be the result of explicitly manipulating simulations in working memory.

One thing that is absent from the perceptual symbol system – and is not mentioned in the Classical Chinese account of imagery – is a mechanism by which our attention is distributed. In his work, Barsalou has mentioned that selective attention consistently focuses on some aspects of an experience to extract information from those components in order to establish simulators to support interpretive processing (Barsalou 1993, 1999, 2012). We usually only re-enact a small subset of all the contents of a simulator to represent a category on a given occasion. However, Barsalou (1999) does not actually explain how attention becomes selective except that it involves some kind of goal relevance. Relevance theory is a powerful candidate to answer this question: our attention is selective based on an expectation of optimal relevance, and the underlying evolutionary reason for it is cognitive economy. As will be discussed later in this chapter, Damasio (1994) also proposed several types of mental representations that are most likely to be activated during cognition. I suggest that his categories may be accounted for by the notion of relevance as well, if we accept that a stimulus can be conceptually, perceptually, and affectively relevant.

7.4 Encyclopaedic information and ad hoc concepts revisited

The grounded or situated approach to concepts is mainly concerned with how conceptual content is acquired. Linguists, on the other hand, are usually more interested in the relation between concepts and word meanings. Lexical semantics traditionally assumes that words have lexically encoded meanings, and that the meaning of an expression is explained by understanding the concept associated with that expression. If this statement is true, then the

same word can only pick out the same category every time it is used, which is not the case in verbal communication. As was discussed in Chapter Three, there is always a gap between the encoded meaning and the communicated meaning. The encoded meaning of a word is typically not the one communicated, but merely acts as the starting point for pragmatic lexical adjustment. This adjustment explains the deviation of communicated concepts from encoded concepts in terms of narrowing and broadening (including varieties of approximation, metaphor, hyperbole, and other category extensions). In a given context, a sub- or superset or a combination of sub-/supersets of the encyclopaedic information associated with the encoded concept is accessible. This context-sensitive set of information is responsible for the construction of what is known as an *ad hoc* concept.

This section revisits the notions of encyclopaedic information and *ad hoc* concepts mentioned in Chapter Three (particularly sections 3.3 and 3.4) where their roles in explaining how metaphors work are discussed. Here I will discuss the grounded approach to the phenomenon that different sets of properties are accessed depending on the communicative context. How does a hearer choose which encyclopaedic information to entertain? How do *ad hoc* concepts acquire their meanings? The purpose is to explore the possibility of going beyond the standard theory of understanding word meaning, with the attempt to integrate, at least to some extent, the more direct perceptual processing mechanism. To set the background for discussion, I start with a brief overview of Fodor's (1975) knock-down arguments against the semantic view that complex concepts are formed by combining basic concepts via logical operations.

According to Fodor (1975), concepts are atomic and unanalysable. This is fundamentally the view that the relevance-theoretic account of lexical pragmatics has taken. <Bachelor> encodes the concept BACHELOR, which is itself an atomic mental representation that cannot be further decomposed as UNMARRIED & ADULT & MALE & HUMAN as in the Classical semantic view. The meaning of <bachelor> is not a definition of this category, but simply the concept BACHELOR. This is followed by the implication that all concepts are activated or triggered by the use of words, and that empiricists are wrong to assume only basic concepts are activated and then combined to form complex ones. There is no hierarchical structure between BACHELOR and HUMAN, and the reason we know that <bachelor> refers to a particular group of humans is because we can make logical inferences from one concept to another. The word we choose to encode a concept is just a name tag we give to a mental file, so the link between BACHELOR and <bachelor> is arbitrary. The truth condition is determined by the underlying conceptual

representation, rather than the word type meaning. This radical take pushes the debate on the innateness of concept to the extremely nativist end, meaning that there are many more innate concepts than what many philosophers and cognitive scientists would like to admit.[69] Meanwhile, the main idea of this approach is adopted by Sperber and Wilson (1986/1995) and used as the basis for developing the relevance-theoretic view of lexical modulation.[70]

As an alternative to the good-old-fashioned lexical semantics and Fodor's radical nativism, prototype theories on categorisation have been trying to provide a third view to align with the developments in cognitive science. I have introduced with examples their proposal, as well as the challenges they face in Chapter Three to set the theoretical background for discussing *ad hoc* concepts. Now I will approach the issue from a more general level to show how prototype theories accept Fodor's claim that concepts are atomic, but reject that they do not possess any internal structure. To reiterate, prototype theories posit that within a certain category, there are some members which are easier to identify than others. These members, usually referred to as natural prototypes, take a central position around which other members are structured and defined (Rosch 1973). Contra Fodor (1975), this means that although concepts as categories exist as non-decomposable representations, the individual examplars falling within a specific category do not have equal membership. While empirical data quoted by prototype theorists suggests that prototypical effects are genuine, it does not say much about why words associated with concepts can communicate certain meanings as they do in verbal communication. If we acknowledge the role natural prototypes play in meaning construction, then we need to explain why the meaning of a complex concept does not follow the rule of compositionality, and why we can understand the meaning of a complex concept without having a pre-existing prototype in mind (Examples illustrating both problems are given in Chapter Three).

Through the use of a word, two distinct types of information about the encoded concept are made accessible. One type helps to establish the association between a word and its meaning,

[69] There is no argument between empiricism and nativism (rationalism) that at least some basic, unanalysable concepts are innate, because the decomposition of complex concepts has to stop somewhere. What they disagree on is how large this set of innate concepts can be.

[70] It is worth noting that research within relevance theory over the years made some shifts and modifications to this initial argument. For example, Sperber and Wilson (1998) argue that all words behave as if they encode pro-concepts whose conceptual content must be contextually worked out. Carston (2012) expresses a similar view that words may not encode concepts, but come with 'meaning-relevant components' (p. 622) that are only specified on occasion of use. Allott and Textor (2017) reject concepts as the starting point of pragmatic adjustment, and propose that such adjustment is the result of a conflict between the speaker's communicative intention and the prior usage of that word.

in terms of which necessary and sufficient conditions are required to define a concept. The other type provides categorical information on the concept, which may or may not contribute to the lexical meaning of that word. This latter type is usually understood as encyclopaedic information, including thoughts, assumptions, and beliefs about the concept. Barsalou wrote extensively about categorisation and prototypical effects in the 1980s. His main argument – which is retained in his work on the human conceptual system in the following decades – is that not only is graded structure (i.e., his term for the prototypical hierarchy) unstable and unreliable across various linguistic contexts, it is highly possible that there are no well-established category representations in memory (Barsalou 1983, 1987, 1993). When people speak of prototypical effects, they are referring to the results of a subset of properties out of a large storage of encyclopaedic information being activated in a given context.[71] In other words, concepts are better viewed not as invariant entities in long-term memory but as highly interrelated occasion-specific constructs in working memory. The deciding factor for selecting properties is how accessible, hence relevant, those properties are in terms of a particular goal (Barsalou 1983, 1987; Barsalou et al. 1993). As mentioned in the previous section, this is an issue that Barsalou has not yet articulated further, and where relevance theory may provide some insights in relation to both communication and cognition.

In relevance theory, encyclopaedic information or encyclopaedic properties of the encoded concept are selected to construct *ad hoc* concepts, which provides the basis for drawing contextual implications that satisfy the hearer's expectation for optimal relevance (Wilson and Carston 2007). Words therefore provide access to encyclopaedic information, only some of which will be relevant (or more relevant) to a given context. This set of information is most likely to become activated and constitute a new, context-sensitive concept. The *ad hoc* concept is the result of pragmatic adjustment – either narrowing, broadening, or the combination of this two – that operated on the lexically encoded concept. In short, the meaning expressed is explained by the encyclopaedic information selected to convey speaker-intended implications.

By this interpretation of *ad hoc* concepts, relevance theory offers an alternative to both the lexical semantic approach and Fodor's radical arguments. The former claims that complex

[71] Barsalou's (1983) examination focuses on lexical narrowing, in which the prototypical effects are exhibited as picking out a subset of the members as a general interpretation of the category. Later works on this topic suggest that the result of lexical adjustment can also be broadening or a combination of narrowing and broadening of the original category (Glucksberg 2001; Wilson 2003; Wilson and Carston 2007).

concepts are composed by a small set of basic ones, and as a consequence we have a much larger stock of words encoding those complex concepts. In contrast, the latter argues that the number of words is roughly the same as that of concepts, because most concepts are innate and atomic. If, however, almost all concepts are modified and adjusted in specific occasions, then in theory we could have infinite concepts which can be used to understand individual uses of words with minute differences. This requires a weaker version of Fodor's nativist view, since it seems impossible that we have that many concepts innate in our mind.

In his later work, Fodor (1998) slightly modified his earlier radical 'mad dog nativist' view, and acknowledged the view that instead of complete concepts, what was innate might be the mechanism for concept construction (see also Margolis 1998). We do not need to store a huge number of concepts as implicated by Fodor (1975). Rather, there is an innate mechanism to mediate visual perception of an individual and the semantic access to the category it belongs. In relevance theory, this mechanism is exhibited in the lexical pragmatic process that is frequently involved when a word is used (see Section 3 in Chapter Three). Furthermore, there is also a continuum of cases ranging from more 'literal' use to 'loose talk' such as metaphor and hyperbole. Content words give access to a conceptual file which is then contextually adjusted and specified for the utterance to have a truth value. Constructing concepts on an *ad hoc* basis is a very common phenomenon. In fact, concepts defined as invariant entities with their own semantic content whose truth condition is reflected by word (type) meaning may only be a myth. This is perhaps why Barsalou (1999) would suggest giving up the notion of concept as type and to replace it with the schematic composition of its constituents, underlain by relevant perceptual experience.

By definition, *ad hoc* concepts are context-sensitive, which means they are temporary and may not be used ever again. However, it is also possible that the set of encyclopaedic properties will be activated by default due to frequent use, or even be lexicalised as a proper 'concept'. Consider the following conversation:

(67) Anna: How was your date last night?
Ben: It was a roller-coaster ride.

Ben is communicating the idea that his date last night had enough ups and downs to the point that it was, overall, more unpredictable than what he expected or would like. This notion of

unpredictability is circumstantial, and it is the degree of it that gives his utterance the intended effects. However, it is unlikely, nor does it matter, that Ann has in mind the same degree of unpredictability as Ben does because a perfect match of meanings is an illusion of the classical code model. Technically speaking, this also means that Ann and Ben may derive different meanings from the same metaphor. But what is really crucial is that Ann successfully assumes that Ben's date night was more unpredictable than what he would have expected. In other words, we do not really need the 'concept' of ROLLER-COASTER RIDE*, nor is it stable enough to perform other functions a proper concept is supposed to perform. We only need certain relevant properties associated with ROLLER-COASTER RIDE* as evidence for inference. Alternatively, Ben may recognise this particular token of experience and store it in his memory when referring to other similar occasions, in which case he would categorise all the relevant information to first create an *ad hoc* concept ROLLER-COASTER RIDE*, then create a permanent, proper concept ROLLER-COASTER RIDE. Similarly, Ann may also recognise this particular experience as the one Ben had and store it as a proper concept, so that she would be able to reactivate it in her future conversation with Ben. This seems to raise the question that whether the general term concept is absolutely necessary for initiating inference.

A non-semantic approach such as the perceptual symbol system discussed earlier in this chapter seems to suggest no. Barsalou makes it clear that the notion of concept should be replaced by that of simulator, which enables the simulations that are tailored to satisfy specific goals in individual occasions (Barsalou 1999, 2009, 2012). Like relevance theory, he still endorses one of the premises of lexical adjustment that words are associated with a collection of beliefs, assumptions, stereotypes, and entries from memory. Only some of this information is activated at a given time to construct an *ad hoc* concept.[72] As a result, meaning is provided by simulations that are activated by using words. The universal meaning of a natural kind term is still possible, but it should be taken as a special case of situation-specific meaning when the situation covers the entire world. The universal meaning of <bird> is situation-specific when all members of the category of BIRD but none of non-BIRD is covered (Barsalou et al. 1993). This rarely happens in real-life communication; and as the authors further comment, an excessive concern with universal meanings is missing the point (ibid.). What the perceptual symbol system suggests is

[72] The term '*ad hoc* concept' does not appear to be frequently used in Barsalou's later works. This may be the result of his proposal that human cognition is inherently perceptual. However, simulations derived from one single simulator in response to contexts and goals can be roughly considered as playing the role of *ad hoc* concepts in inference.

that this activated subset of information includes multimodal memories of what happened in the past (even if it was just seconds ago). The simulator-simulation relation is argued to cover not only the conceptual contents of concepts to support inference based on propositions, but also perceptual contents that allows for inference that does not involve propositions. It is in this sense that the entire human cognition is grounded in situations.

Does this model entail a step back to the to the old Empiricist view of concepts? According to Barsalou (2012), the answer is no. Adopting the grounded view is not to deny a nativist contribution. On the one hand, at least some aspects of how a situation is captured and simulated need to be significantly constrained by genetic factors. Simmons and Barsalou (2003) comment that conjunctive neurons are combined to anticipate features that are of evolutionary significance in the cases of many animals. They further suggest that a similar mechanism works for human beings because we associate certain words with their encoded meanings, emotional expressions with emotions, and motor actions with visual outcomes. This does not mean that such knowledge is genetically represented, but rather that evolution plays a significant role in deciding which combination is more likely to happen. On the other hand, the activation of a simulator, which is the schematically distributed cluster of neural patterns, is a result of selective attention. We tend to focus constantly on things that matter – those that are highly relevant to achieving our goals, or those considered to be relevant according to introspective states (Barsalou 1999; Barsalou et al. 1993). It is this kind of ability to produce situated conceptualisation that supports inference and provides meaning, so atomic concepts as ready-made entities are not necessary.

This view basically argues that the underlying system for what we consider as 'higher level' conceptual activities can be found in 'lower level' procedures, and that conceptualisation is not completely independent from perception.[73] It presents a challenge for the default view that communication and cognition are about propositions as is discussed in Chapter Four. Meanwhile, this view raises some questions. From the perspective of linguistics and language philosophy, Allott and Textor (2017) point out that the simulator-simulation relation either eventually requires a concept as a general representation, or it falls back into an empiricist trap.

[73] Commenting on the experience of artwork and literature, Kolaiti (2019, 2020) makes a similar remark that the aesthetic effects are a mixture of non-propositional and partly or wholly embodied positive perceptual effects, perhaps with a minimum amount of positive cognitive effects.

The problem is choosing which relevant previous experience can be used to re-enact a current simulation. If it is a general experience, then we are back to the problem of finding a representation, or concept, that can be considered as the starting point of adjustment. If it is a particular occurrence, not only does it sound phenomenologically implausible, but it is also questionable how many previous occurrences we remember, and how reliable those memories can be across time and individuals.

Another challenge is to flesh out the definition of 'relevance', and the perceptual symbol system is yet to do so. In pragmatics, relevance is a property of the input to inference, gauged by how many positive cognitive effects it renders and how much processing effort it demands (Sperber and Wilson 1986/1995; see also Wharton et al. 2021; Wharton and de Saussure 2023). By comparison, the appraisal theory in affective science views emotions as the results of meaningful appraisals of events concerning one's objective or goal (Lazarus 1982; Scherer 1997). If simulations provide word 'meanings', and a simulation includes information about previously experienced sensorimotor and emotional states, then we need to consider if these two notions of relevance can be unified to some extent. Wharton et al. (2021) remark that the relevance in relevance theory is about achieving two specific goals, namely, the maximisation of cognitive effects and the minimisation of processing effort. Upon further examination, both notions of relevance fall within a larger realm of goal-relevance and overlap in cases of epistemic emotions. Also relevant to this topic is the notion of perceptual effect, a term proposed by Kolaiti (2019, 2020) to gauge the relevance of an artistic stimulus that does not solely rely on the generation of positive cognitive effects. I discussed in earlier chapters how mental imagery may contribute to the modification on the perceptual and sensorimotor systems, therefore increasing the perceptual relevance of the stimulus by which the mental imagery is constructed. According to the aforementioned studies, an input can be relevant enough to a person both affectively and perceptually to support inferential processes not based on propositions, yielding affective and perceptual effects that satisfy the person's expectation of relevance. Instead of assessing the effort/effect ratio, what happens during cognitive processes may be more intuitive. As Wharton and de Saussure (2023: 122) suggest, the judgement that relevance has been met is perhaps 'a feeling of completeness, or achievement, of satisfaction of expectations, and certainly raising affective effects can contribute to the emergence of this feeling of relevance'. Or perhaps we need to modify the term 'cognitive effect'. When an input is conceptualised, it is likely to yield cognitive effects as defined by relevance theory. Yet it can also be the case that a quick, intuitive assessment is enough to contribute to the emergence

of a general *feeling* that a certain expectation has been satisfied. This is also compatible with Fabb's view on surprise. Our metacognitive assessment of the effort/effect ratio can be a kind of feeling, and when that feeling of completeness is not satisfied, we feel surprised.[74]

The grounded view seems to be pointing to a promising direction, but something as schematic as a simulation may not be able to contribute directly to lexical adjustment unless it further explains why people can come to a general agreement about word meaning if what they find relevant is likely to vary. However, the causal engineering that interconnects perceptual and conceptual representations can still guide and constrain the types of response appropriate to the context in terms of a general goal-relevance. The encyclopaedic information that provides the premise for drawing contextual implications, the spontaneous perceptual/affective responses, and the non-representational disposition to mentally represent are accessible at the same time during verbal communication. Drawing inspiration from research on non-propositionality, in the next section I suggest that the hearer's experience of mental imagery is not something that occurs independently of the speaker's intention.[75] Imagery, like many other so-called non-propositional effects, can be treated as speaker-intended and not solely as the by-product activated by linguistic processing, regardless of whether or not, or to what extent of vividness, it is reported to have experienced by the hearer. The imagery meta-represents the type of perceptual experience possibly derived from the writer or speaker. Via the same mechanism explained by Kolaiti (2019), the addressee's response is directed not towards the imagery itself but towards his introspective states, distinguishing this experience from direct sensory responses. The addressee simulates what it feels like for the speaker/writer to have such a perceptual experience, and evaluates this simulation based on its relevance to himself. What happens here is more of a direct perceptual reaction accompanied by the mental activities it encourages, as opposed to simply mindreading. As outputs, we not only have new assumptions but also new feelings about the current situation.

7.5 The 'understood' and the 'felt'

[74] I am grateful for an email thread discussion on this issue with Tim Wharton and Ismaël Pozner.
[75] I first presented this view at the Relevance Researchers' Conference (Qiu 2022). I am grateful for the feedback I received prior to and after my presentation, as well as further discussions on this topic during an online seminar at the University of Brighton on 2 Nov 2022.

Artistic and literary creations are often thought to involve the communication of images, feelings, emotions, together with the propositions that might be intended by the speaker/artist/author. In some cases, the communication of non-propositional contents is even considered to be taking a dominant position when the propositions are absent or indeterminate. This can happen in several scenarios such as those shown in Table 2 below:

Issue	Example	Problem
1. Absent or incomplete propositions	The speaker does not have a specific propositional thought in mind to deliver	The thought cannot be encoded by a linguistic expression
	The speaker's thought cannot be exhausted by propositions	The thought is not paraphrasable
2. Non-propositional contents	The communicated content is too vague, it is inherently non-propositional such as an impression	What is communicated does not bear truth value
3. Speaker's intention	The speaker is interested in sharing an experience by: (1) making the hearer aware of her emotional and/or perceptual states (2) encouraging the hearer to experience those states himself (3) letting the hearer attribute this experience to the speaker's intention.	The speaker does not intend to communicate a 'meaning'

Table 2: Non-propositionality in artistic/literary creations

Issue 1 shows a problem of recovering speaker's meaning based on ostensive stimuli in literary contexts (de Saussure 2021; Wilson 2018). If the speaker does not have a clear propositional

message to convey, then it seems difficult to encode this message in linguistic expressions for the hearer to recover. It is often questionable to talk about misunderstanding in art and literature, as there is no 'correct' meaning to be misunderstood. What we can talk about, however, is why a hearer finds a piece of literary text relevant, and to what extent the speaker is responsible for making the text relevant.

A typical example of Issue 2 is when the speaker shares an impression, which, according to relevance theory, is 'a noticeable change in one's cognitive environment, a change resulting from relatively small alterations in the manifestness of many assumptions' (Sperber and Wilson 1986/1995: 59). The poetic effects that expressions such as metaphors have can be accounted for by creating common impressions rather than common assumptions. Relevance theory explains why impressions can be communicated via the same ostensive-inferential process, but it does not say much about why the hearer may also have a change in their own emotional and/or perceptual state as in Issue 3. This latter change is experienced or felt, rather than understood as in the case of implicatures. Some may argue that such a change only occurs in the hearer's personal mental life which lies beyond the scope of pragmatics, but then we would be ignoring the fact that having the hearer experiencing as such is also part of the speaker's intention. There needs to be some degree of attribution by which the hearer is confident enough to say that him feeling in a certain way is at least partly intended by the speaker. Furthermore, an impression can be much vaguer than a range of weakly manifest implicatures. Having an impression may just mean having a feeling (as in 'feeling today is going to be a good day'), without knowing what that feeling is or even consciously representing it (Wharton and de Saussure 2023).

We may use the following metaphor to illustrate these concerns:

(68) Flickers of light, that's all life is.
(68a) There are short moments in life that give one HAPPINESS* and REASSURANCE*.
(68b) An image: #flickers of light#

Poetic metaphors are good examples of expressions in verbal communication which allow people to share experience beyond propositions. For an addressee to imagine a new experience as prompted, and to consider it as relevant, the experience will have to have an anchor in his memory but also provide something new (de Saussure 2021). On a conceptual level, the

utterance in (68) can be understood as expressing a speaker-intended propositional conclusion such as that in (68a), which consists of occasion-specific concepts with logical properties. However, a competent user of English is likely to agree that there is something else communicated by the utterance in (68) but not fully rendered by the proposition in (68a). There is clearly a difference between having the *ad hoc* concepts HAPPINESS* and REASSURANCE* and feeling happy and reassured, and having those feelings is ultimately why the hearer thinks that the utterance is impactful.

Can we say that having a direct feeling of happiness and reassurance leads to a more comprehensive – or more profound, as some might comment – understanding of the utterance in (68)? In this case, no conceptual knowledge of the emotions that we call happiness and reassurance is involved. What is involved is the affective and/or perceptual effects of these two emotions as have been experienced. If the hearer has a mental image such as that in (68b), is it possible that he will mentally represent a strong perceptual or affective response that contributes to his understanding of HAPPINESS* and REASSURANCE*, and then to the understanding of what is communicated by uttering (68)? This, in fact, is to say that reading the utterance in (68) is an experience which gives access to two types of mental representations: (a) a conceptual one which allows the hearer to draw contextual conclusions about what the speaker means, and (b) a perceptual or affective one which allows him to feel what he thinks the speaker feels. They are equally important in comprehension, influencing and providing guidance for each other.

Reconsidering and highlighting the role of subjective aspects of our experience does not make it impossible to provide a reliable account for communication and cognition. On the contrary, to exclude feelings, emotions, and images from a pragmatic theory is in some ways to ignore why people communicate in the first place. As an influential proponents of grounding cognition in embodiment, Damasio (1994, 2000) suggests, human reason probably did not develop without at least some consistent guidance from the biological mechanism which can be notably expressed as feelings and emotions. Feelings are essentially the direct perception of what is going on in the body as represented in the mind, so they have cognitive contents that cannot be reduced to merely physiological responses.

According to Damasio (1994), higher-level cognitive processes are not totally independent from what we considered to be lower-level processes. Reasoning, prediction, and decision

making happen only after the representations 'in focus' and 'held active in mind' (ibid.: 84) are parsed and constrained by the processes of emotion and feeling, which are part and parcel of the neural mechanism underlying all biological regulations. As a result, the brain and the body are indissociable and integrated, rather than that the brain itself functions as an integrative site for representations from all kinds of sensory modalities. This argument finds its support from the clinical data of the brain. Patients with damage to areas in the frontal lobe (possibly the orbital, dorsal, or back regions) not only suffer from a personality change, but they are also compromised in conforming to previously learnt social rules or planning for the future (Damasio 1994). The activities of neurons depend on the nearby assemblies of neurons, and the architecture and interconnection of these assemblies ultimately contribute to the functions of the system they belong to. What happens to the body proper will inevitably have at least some impacts on what might happens in the brain. Complex organisms such as humans have complex interactions with the environment. The external interactions are represented collectively as behaviours, while the internal ones constitute mental images. This view postulates that having a mind means having neural representations that form images, and the interpretation and manipulation of images lead to concepts and categorisation, which eventually influence behaviour by providing predictions for the future.

The 'images' in Damasio's (1994) account fall into two categories: *perceptual images* and *recalled images*, neither of which is necessarily consciously experienced. As the name suggests, perceptual images are those formed by inputs from sensory organs – the sights we see, the sounds we hear, the feelings we get from touching, etc. Recalled images, by contrast, do not involve direct stimulations to senses nor any fine detail. They occur when conjuring up a memory, but they do not always need to be stored in advance. Since we use past memories to plan for the future, our images of things that have yet happened (expectation, prediction, and plan) are no different in nature from the images we hold about the past. In other words, planning for the future is to reorganise and consolidate elements from previous experience.

However, Damasio is not taking a radical Empiricist view of image construction. Whether the image is formed by bottom-up or top-down processes, it is always based on neural representations in early sensory cortices. How a representation turns out to be is constrained by biological mechanisms outside the brain and the dispositional neural patterns in the convergence zone (Damasio 1994). What happens during an image experience is not about retrieving the image *per se* from memory, but constructing one by activating the same neural

patterns. If we understand 'images' as such representations, it is likely that most of them will be below consciousness (see also Barsalou 1999). We think in terms of 'images', and the mental imagery that we consciously experience is just one of the manifestations found on the tip of the iceberg of cognition.

We may compare this view with that discussed in Chapter Six on the notion of *xiang* from the Classical Chinese philosophy. *Xiang* is usually considered as a mediator between perception and conceptualisation (Zhang 2019). The development of this notion suggests that it originates from people's experience and simulations of objects in the world. It serves the purpose of categorisation, but extends into the realm of conceptualisation and imagination, leading to a subjective understanding of the category (Zhang 2019). In this way, it is not accurate to consider *xiang* either as an equivalent to concept or mental imagery in the traditional sense, since *xiang* contains perceptual information and interpretation based on past experience. The former is not part of a concept, and the latter is not part of a mental imagery. It also appears to be different from a cluster of encyclopaedic properties, as the content of a *xiang* can be non-propositional, and it is formed in a less flexible way than how encyclopaedic information contributes to the construction of an *ad hoc* concept.

The *xiang* of an object can perhaps be seen as the prediction or expectation of what that object is to be perceived and understood, partially echoing how a recalled image works in Damasio (1994) or a simulator works in Barsalou (1999). However, while Damasio and Barsalou try to link imagery (both perceptual and recalled) and the simulator with neural activities and patterns of activation, ancient Chinese philosophers never made it clear what the underlying mechanism for a *xiang* might be, and the discussion of *xiang* in the Classical Chinese account has never been brought together with psychology or cognitive science. Nonetheless, as is shown in the previous chapter, *xiang* has been regarded as an important part in literature and art in attempt to express the ineffable. The idea is that through *xiang* the reader/audience accesses both perceptual and conceptual representations to create a simulation. The simulation puts the reader/audience in the writer's/artist's point of view to experience what they may have experienced, in order to understand what they may try to communicate. During this process, selective attention only focuses on a subset of all the representations that might be available at a given time. Classical Chinese research provides no account as to why this is the case, but this thesis holds the view that it can be explained in terms of relevance rather than purely logical inference.

Psychologists and cognitive scientists have assumed that thoughts and memories are not only reconstructive but also constructive (i.e., the *constructive episodic simulation theory*). Bartlett (1932), for example, explains his experimental results by suggesting that memories are about embellishing and filling in the gaps with relevant schematic knowledge and details from other events. Manipulating mental imagery consciously by shifting to a novel visual perspective, as well as the associated visuospatial and self-referential processes, are found to have an influence on how autobiographical memories are reshaped and emotionally reacted to (Berntsen and Rubin 2006; Grol et al. 2017; St Jacques et al. 2017). Furthermore, this shift in visual perspective recruits the cerebral regions that are typically associated with imaginative simulation, supporting the idea that remembering appears to be aligned with imagining (St Jacques et al. 2018). In order to do so, there needs to be some kind of a selective mechanism, as the representations that constitute thoughts and memories cannot be activated randomly. Some should be genetically and biologically determined – one cannot see the same colour as *green* if it was previously seen as *red*, regardless of whether the person has the concepts GREEN and RED – while others are selected because of their relevance. The question therefore becomes: how can organisms, humans and other animals alike, activate the relevant representations to either directly or indirectly ensure their survival.

The answer Damasio (1994, 2000) proposes centres on the workings of emotions and the feelings that follow. In this framework, there are two types of emotions: primary and secondary emotions. Primary emotions are the hard-wired, innate responses to stimuli or a combination of features of stimuli. Since they are responses, they only require detection and categorisation in early sensory cortices, and their reception is attributed to the amygdala. Therefore, primary emotions are very much restricted to changes in body state. This categorisation seems to resemble Ekman's basic emotions, but in fact they have different foci. As mentioned in Chapter Five, basic emotions theory suggests that the universality of human facial expressions reflects a set of underlying basic emotions, which are associated with terms such as <happiness> and <sadness> (Ekman 1977, 1992b). This reveals a potential weakness of the theory by attributing words in natural languages to the nature of emotions. Damasio's account emphasises the kinds of biological responses our bodies produce. Indeed, he does recognise five categories of changes in body states (Damasio 1994), but they are determined by biological inheritance rather than the idiosyncrasies of basic emotions.

Primary emotions by themselves can prompt us to behave in a certain way, but the process continues in cognition, enabling us to feel the emotion, or to become aware of our own emotional states. This gives feeling a cognitive content – a mental representation or image – so we can not only predict matching response to future situations, but also generate and refine a wide range of secondary emotions to better adapt to the environment (Damasio 1994, 2000). Reuniting with an old friend induces new body states (e.g., increased heartbeat, relaxed muscles, etc.). They are linked with a particular kind of happiness, which is the result of being aware of the happiness emotion, and then adjust it based on an evaluation of the situation (e.g., that the two of you have not met for a long time). This secondary emotion facilitates and guides our interactions with the environment and in the society, which contribute to a more efficient way of living.

Emotion, therefore, is 'the combination of a *mental evaluative process*, simple or complex, with *dispositional responses to that process*, mostly *toward the body proper*' (Damasio 1994: 139, original italics). Having an emotion will lead to changes not only in body states but also in mental states, and having a feeling of an emotion is the experience of these changes in association with the mental representation that leads to those changes. Feelings have cognitive contents. They bridge the gap between the body and the mind by modifying how we mentally represent the world. And if feelings can be considered as mental representations by themselves, then it is possible that they interact with other mental representations, such as the conceptual propositions involved in verbal comprehension and interpretation.

Emotions and feelings also help us monitor what is happening to ourselves, which can be used to make further inferences. According to Damasio (1994), there are two sets of representations being continuously activated in this monitoring process, leading to the notion of self. One set concerns the key events relevant to the individual in dispositional memory, which contains categorised facts, our past and recent experiences that can be used to plan for the future. The other set concerns what is happening at the moment, what body and emotional states we are in and have been in lately. Changes in these states contribute to the construction of new mental representations and the modification of existing ones. Together they shape our understanding of affairs in the world. In this sense, the past that provides the basis for having an experience in the world from a certain perspective also includes what happened just moment ago – '[t]he present is never here' (Damasio 1994: 240). It is not very clear in Damasio (1994) what standard representations of some events and states are more likely to be activated, as if we just

know something has changed. I suggest that this is because those activated are of higher degree of relevance to the individual on a given occasion, either because they contribute to more cognitive effects as described by relevance theory, or because attending to them triggers a procedure for the individual to become more aware of certain aspects of the environment that produce positive perceptual and affective effects.

Let us revisit the metaphor used earlier in this section (repeated below as (69)):

(69) Flickers of light, that's all life is.

As suggested in de Saussure (2021), literature should be treated as a case of experiential communication in which the reader's emotional reactions towards the text should count as an imaginative experience, making literature slightly different from everyday verbal communication. Sometimes we self-identify with the character (or in (69), the speaker of this statement), sometimes we simulate a situation as is described and react to it, producing an 'as if' emotion described in Damasio (1994). We do not always need to first identify the type of emotions the speaker intends to communicate by the utterance in (69) to be happiness and reassurance before feeling those emotions. Instead, we can bypass representing emotions in terms of what they are and come to psychological states similar to that of feeling the emotions. Seen in this way, the process may account for sharing impressions when both interlocutors are present, which previously has been argued to be about communicating weakly manifest propositions (Sperber and Wilson 2015). Meanwhile, the experiential outcome is under the influence of our current background emotional states. If a person is in a happy state, he may anchor 'flickers of light' in things that makes him happy, enhancing the emotion he is already feeling. This may explain why people come back to the same text at different times and report different experiential effects.

Furthermore, the hearer may form a mental image #flickers of light#, which can become a conscious one (in a narrow sense) or remain under the threshold of consciousness (in a broad sense). Either way, there is some degree of perceptual processing happening in the brain similar to that of seeing flickers of light, leading to certain changes in body states. These changes then guide the hearer's attention to certain properties such as something being *shinny* and *brief*. As a result, the hearer is more likely to include these properties in their interpretation. This process is not completely hearer initiated, or that the speaker has no control over or takes no

responsibility for. Rather, the speaker's responsibility lies in the fact that she crafts the sentence in a way that provides cues to activate representations that are of perceptual and emotional significance, even though she cannot dictate exactly what changes in body and mental states the hearer will be undergoing.

This thesis proposes that metaphors like the one in (69) are processed in two different but interlinked routes. The conceptual route works on the basis of conceptual representations, yielding cognitive effects that increases the relevance of this metaphor. The procedural route accesses previous or current body and emotional states to transform them into an abstract perceptual experience. The main difference between such kind of perceptual experience and pure perception is that in the former case there is no direct stimuli involved. Words do not affect our mind the way vision does, but in reading those words we activate the dispositional mental representations to construct a quasi-visual experience such as a conscious visual mental image, resembling the one the speaker has and intends to convey. This is not always the case, as has been mentioned earlier that people with aphantasia report not to have any form of conscious mental imagery. However, this thesis adopts a broader notion of mental imagery to include those that are not consciously experienced but involve perceptual processing nonetheless (see Chapter Six). The proposal therefore is that mental imagery, whether we are aware of it or not, can contribute to how we process what is communicated by a metaphor, which is usually taken solely to belong to the realm of propositions.

7.6 Summary

Some argue that the perceptual impacts of literature and art on the audience are probably more often sought after, and that emotions are even traditionally praised to be the driving force behind artistic and poetic creation (Pilkington 2000; Yeh 1984/2008). The problem is that we still do not have a clear idea about how inference can operate over objects that do not have truth values. Indeed, there is much that remains to be said about 'inference'. Assumptions are usually seen as crucial to understand thoughts, but an assumption can be strongly or weakly held. Those playing a causal role in making logical inference need to be activated in working memory, while others are stored in long-term memory as dispositions. However, an assumption does not need to become activated for it to influence inference; sometimes it may even play a greater role than those still in working memory (Sperber and Wilson 2015).

Based on previous discussion, there seems to be two ways non-propositional elements such as mental imagery and emotion may contribute to inference. They can do so by highlighting certain features and therefore adding to their weighting, although these elements are not directly involved in inference. Or they may contribute to the vast majority of inferences that do not require logical derivation from explicit premises to conclusions. The communication of impressions according to relevance theory is one such case where instead of making manifest a proposition, 'patterns of activation' (Sperber and Wilson 2015: 135) are changed in the addressee's cognitive environment to activate or inhibit possible conclusions. Meanwhile, grounded cognition suggests a mechanism for carrying out inference on systematically stored patterns of neural activity derived from perceptual experience.

Relevance theory has taken interest in the role emotions play in communication. In fact, Sperber and Wilson (1986/1995) comment that certain choice of style (e.g., an echoic utterance) can convey a range of attitudes and emotions, and recognising them may be crucial to interpretation because they give rise to non-propositional effects that defy paraphrasing. At the same time, the standard relevance theoretic model treats emotions (as well as images) as triggered or induced. That is to say, the non-propositional effects are part of the outputs of comprehension for which the reader is responsible.

As this chapter has shown, inference can also be based on the conscious or unconscious manipulation of non-conceptual representations. What cannot be pinned down to propositional terms has the potential to influence how an utterance is taken. Such a process, though not guided by logical rules, still produces enough evidence for recognising the speaker's intention. This offers support to the proposal that non-propositionality should and can be incorporated in a pragmatic framework. I started by laying out the main arguments of grounded cognition. There are various theories endorsing this view of human cognition, but as I argued, not all of them are compatible with the proposal in this thesis. I then reviewed the grounded approach to concept construction and how it may inform us on how we understand encyclopaedic information and the construction of *ad hoc* concepts. These two notions are considered to be central to the comprehension of metaphors. According to Carston (2010b), metaphors that heavily rely on imagery fall outside of the domain of pragmatics because imagery is not communicated but activated or triggered. This thesis does not adopt this view but argues that conception may not be entirely free of inputs from the sensory system. Imagery, for example, serves the purpose of 'pointing to' aspects the speaker wants her addressee to attend to, which

is directly related to the speaker's reflexive intention. As a result, how an image may be formed and entertained, rather than the image itself, is conveyed. Therefore, the discussion of metaphors of this kind should fall within the domain of pragmatics.

Although propositions are usually seen as the most important thing – if not the only thing that matters – in verbal communication, recent studies from various disciplines have shown that what cannot be judged by truth values may influence, or perhaps even underlie, how a propositional mental representation is formed or modified. There is good reason to consider that our mind works in two different yet interlinked dimensions, and our experience of poetic metaphors is only one example of the interaction between conception and perception. When implemented in expressions such as a poetic metaphor, this dynamic is what makes the metaphor truly 'impactful'.

Chapter Eight: Conclusion

8.1 Main claims and contributions

As a linguistic phenomenon, metaphor has long been praised for its creative use of words, creating the type of aesthetic value that can rarely be achieved by 'literal' use. It has attracted much interest from various fields of study since ancient times, and has provoked insightful discussions on the nature and potential of language. However, the reason why metaphor is sometimes considered special is not that metaphor itself is anything unique. On the contrary, this thesis endorses the relevance-theoretic view on metaphor and treats metaphor as emerging naturally in verbal communication. As a result, it requires no special comprehension mechanism. The intuition that metaphor is special comes from the generation of a wide range of so-called non-propositional effects, including mental images, feelings, impressions, emotions, or sensations. The experience of these effects sometimes even overpowers the understanding of what the speaker means, as in the case of poetry. At the same time, it appears practically impossible to paraphrase these effects into propositional terms without a significant loss of their impact.

In a more traditional pragmatic framework, such as that offered by standard relevance theory (Sperber and Wilson 1986/1995; Carston 2010b, 2018), non-propositional effects would either need to be explained in propositional terms, or they fall outside the realm of pragmatics altogether. After an examining the challenge of non-propositional effects, Wilson and Carston (2019: 38) suggest that 'imagery and affective states are automatically activated by-products of linguistic and pragmatic processes, which may nonetheless be intentionally encouraged by creative uses of language'. That is to say, while the speaker may have an intention to activate one or several mental images in the hearer's mind, the experience of which lies beyond the scope of speaker-intended.

This thesis took this comment as the starting point and contributed to pragmatics on the issue of non-propositionality. It argued that a wholly propositional inferential model could not account for all that happens during verbal communication and thus proposed a dual-route processing model for utterance in natural language. This foregrounds the role mental imagery (and quite possibly for emotions as well) may play in verbal communication and the hearer's arrival at what is intended by the speaker. In other words, instead of being a by-product, mental

imagery is more like 'a means to an end'. The disposition and capacity to exploit mental imagery is perhaps not a luxury in communication but rather a property of the mind. This does not mean, however, that mental imagery is entitled to any priority, nor does this thesis claim that imagery is *always* required to understand a metaphor. What it does suggest is that the entertainment of imagery feeds perceptually/affectively based information back into utterance processing, prompting selective attention on perceptually/affectively relevant aspects, constraining the context in which inference can be performed, and therefore aids the search for overall relevance.

Standard relevance theory explains the non-propositional, ineffable, and experiential dimensions of communication with the manipulation of mental representations. This is to recognise the speaker's communicative intention and to modify the hearer's cognitive environment by confirming or contradicting/abandoning existing assumptions. On this premise, non-propositional elements play a very limited role and do not affect higher-level epistemic processes such as reasoning, predicting, and decision making. In response to such a view, the following three research questions were asked in Chapter One:

1. How can the pragmatic mechanisms of poetic metaphor be explained?
2. Does the kind of non-propositional effects that arise in our experience of poetic metaphor fit into the current pragmatic framework? If not, how can a fully propositional model, such as the ostensive-inferential model offered by relevance theory, be modified to allow a more comprehensive view?
3. Is imagery a by-product of the inferential process, or can it interact with further inferential processes? How does mental imagery influence and contribute to what is communicated by poetic metaphor?

Chapters Two and Three set out to answer the first question. A critical review on the traditional and major contemporary views suggested good reasons to favour the relevance-theoretic approach. According to this theory, relevance is an inherent property of human cognition. Understanding any utterance is geared towards achieving optimal relevance, gauged by the required processing effort and the modifications on one's cognitive environment. Within this framework, metaphor undergoes the same inferential procedure as other language use to derive implicatures which the hearer takes to be speaker-intended (Carston 2002, 2010a; Sperber and Wilson 2008; Wilson 2011b).

However, this approach can and need to be further developed if it is to account for the non-propositional effects metaphors may have on the addressee. Chapters Four and Five addressed the second research question. These two chapters showed that it was possible, perhaps in some cases even desirable, to take a more intuitive pathway to establish a connection with the hearer's non-propositional experience, so that certain aspects of the metaphorical utterance might become more salient than others. Bringing non-propositionality back into the attention of a pragmatic theory is crucial since non-propositional contents have the potential to influence how an utterance is to be taken. As Chapter Four argued, the long-assumed 'Primacy of Propositions' in philosophy and linguistics did not include those aspects of an utterance with no truth values. Those aspects cannot be characterised in terms of propositions, but are nonetheless intended by the speaker. Chapter Five continued the discussion with a focus on poetic and other aesthetic effects. Drawing inspirations from research in affective science, I suggested that what could not be pinned down to propositions could have great influence on those cognitive activities that we usually considered to be higher-level, and they might also feed in cognition and communication as inputs.

Chapter Six discussed the phenomenon of mental imagery, which was often claimed to emerge during metaphor reading. I identified four dimensions that were important in understanding the notion of mental imagery. Parallel to this, I introduced the notion of 象 *xiang* from Classical Chinese philosophy to present a tradition that developed independently from the Greek philosophy and might offer insight to the current discussion. I showed that imagery had the potential to play a more active role, even though not everyone reports 'seeing' images while reading a poetic metaphor. What lies below the threshold of consciousness often deeply affects how we think and respond. In order to incorporate both the conceptual and procedural aspects of communication via metaphor, I proposed the dual-route processing model in Chapter Six, suggesting a stronger stance about the role of mental imagery. This stronger stance is necessary if we want to delve deeper into the workings of mind.

In Chapter Seven, I provided further theoretical and empirical support for my model using ideas from grounded cognition. I argued that mental imagery was situated in our experience and memory, and could 'point to' constituents from experience that perceptually resembled the sensory inputs, allowing access to a range of representations. Attending to these representations shifts the hearer's focus to certain aspects of the stimulus. Doing so provides a basis for

inference by using feedforward and feedback information. It also yields positive cognitive effects, perceptual and/or affective effects that allow the addressee to better gauge the overall relevance of the utterance. This mechanism guides and constrains the search for perceptual relevance at relatively lower cost, thus complementing a wholly propositional inferential model. Chapters Six and Seven answered the third research question.

8.2 Final remarks

According to the approach proposed in this thesis, mental imagery guides and constrains the search for perceptual relevance at a relatively lower cost. Imagery also contributes to making inference about what the speaker intends to communicate – not only thoughts and beliefs, but also feelings and impressions. Of course, images do not bear truth values, so whatever role they may play in inference cannot be the same as that of conceptual representations. The point is that the addressee's grasp of what a metaphor communicates is likely to be richer and more comprehensive if it finds some sort of 'anchor' in his perceptual experience.

The dual-route processing model may face two challenges, one of which concerns the nature of mental imagery, and the other, 'inference'. In Chapter Six and Seven, I reworked the definition of mental imagery. The images we consciously hold in mind during metaphor comprehension and interpretation are the result of explicitly manipulating the mental representations stored from previous experience. We know what we are imagining, and the constituents of such images are activated during the linguistic decoding of the utterance. However, mental images can also be unconsciously processed, in which case they affect where attention is placed by prompting an intuitive experience at relatively lower cost, allowing the sharing of feelings in a faster and more direct way.

I further asked whether and how 'inference', for lack of a better term, could be performed on non-propositional elements. Of course, if mental imagery contributes to inference in any way, it does not involve logical derivation of conclusions from premises as it does in the manipulation of propositions. This type of 'inference' may have its own evolutionary benefits, and it may be common in many non-human social animals. For example, chimpanzees appear to not just perceive but also 'know' and 'interpret' intentional actions to adjust their behaviours (Call et al. 2004). Dogs are also found to be able to infer some human affective states and make predictions using information of emotional expressions (Albuquerque et al. 2022). This would

probably not be possible without some complex and complicated information processing mechanism. Grounded cognition has offered some insights into the how perceptual information is retrieved from previous experience to construct imagery, feelings, and emotions that underlies cognition. What it has yet fully explained is how the same mechanism can be applied to inferencing speaker's import as described by relevance theory. This is both a challenge and an opportunity. The notion of relevance has been mentioned in relevance theory, affective science, and grounded cognition alike, even though this parallel needs to be further fleshed out. With its well-structured arguments, relevance theory may be a strong candidate to facilitate a more comprehensive framework. Future linguistic and interdisciplinary research in the following directions would be particularly helpful for a deeper understanding of communication and cognition.

Within linguistic studies, it seems natural to consider other types of 'loose use' to see if the dual-route processing may also apply there. Among those traditionally classified as figurative devices, metaphor, simile, hyperbole, metonymy, and synecdoche can all be novel and generate non-propositional effects. Much current work is largely focused on how they contribute to the understanding of speaker's meaning, while the non-propositional dimensions are relatively less explored. It is also worth discussing to what extent socio-cultural factors may play a role. This can be a tricky path because of the shadow of empiricism. As far as this thesis hypothesises, socio-cultural factors may influence how a mental image may be fine-tuned when it reaches consciousness and is manipulated explicitly. Yet in the majority of cases both the construction and the processing of mental imagery are constrained by something inherent to human cognition. More theoretical and empirical data is therefore needed to test out this hypothesis.

This line of thought will also benefit greatly from interdisciplinary work and further collaboration. This thesis sketched a model that is in line with the main arguments made by relevance theory about cognition and communication. Though speculative, it is compatible with recent research in this direction (e.g., de Saussure 2021; Fabb 2021; Golding 2016; Kolaiti 2019, 2020; Wharton et al. 2021; Wharton and de Saussure 2023; Wharton and Strey 2019). It also finds support in empirical evidence from psychology and cognitive science – for example, the use of mental imagery in perspective shifting has a significant impact on people emotional reactions to an episode from memory (Berntsen and Rubin 2006; Grol et al. 2017; St Jacques et al. 2017, 2018). I have argued that mental imagery may contribute to communication in a

more active way than has thus far been recognised, and the reason it can do so has a great deal to do with relevance.

Meanwhile, as is the case with any proposal that aims at pushing the boundaries, this thesis left a number of questions unanswered. For instance, is the current account an accurate description of the nature of mental imagery? What exactly determines a person's accessibility of his encyclopaedic memory in the construction and entertainment of mental imagery? What role(s) might variations from sociocultural environment play in finetuning the addressee's meta-representations of the speaker? Questions like these, however, are not specific to this thesis but rather to psychology and cognitive science as a whole. Since this thesis largely adopts relevance theory, which attempts to 'ground models of human communication squarely in cognitive psychology' (Sperber and Wilson 1986/1995: 170), it needs to stand up to similar challenges. As mentioned earlier, cases of aphantasia call for further work to understand the nature of perceptual processing in relation to consciousness. Studies carried out in terms of affective- and sensorimotor-related information can also provide insights into the mechanism underlying cognition in general. What relevance theory calls 'cognitive effects' may turn out to cover a wider scope than what was originally thought (Wharton and de Saussure 2023). The ultimate goal of this thesis is to highlight the possibility to expand the realm of pragmatics so that all cases and aspects of human communication may be accounted for, including those that are considered to be (almost) impossible to communicate.

Until then, we may obtain something new from the following metaphors beautifully written by the science fiction writer Arthur C. Clarke in *Childhood's End* (2010: 205):

> Imagine that every man's mind is an island, surrounded by ocean. Each seems isolated, yet in reality all are linked by the bedrock from which they spring. If the ocean were to vanish, that would be the end of the islands. They would all be part of one continent, but their individuality would have gone.

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