

# Intentions behind metaphor use

**MSc Thesis** (*Afstudeerscriptie*)

written by

**Gianluca Michelli**

(born May 15th, 1997 in Tolmezzo, Italy)

under the supervision of **dr. Ekaterina Shutova** and **Xiaoyu Tong**, and  
submitted to the Board of Examiners in partial fulfillment of the requirements  
for the degree of

**MSc in Logic**

at the *Universiteit van Amsterdam*.

**Date of the public defense:** **Members of the Thesis Committee:**  
*August 25, 2023*

dr. Ekaterina Shutova (supervisor)

Xiaoyu Tong (supervisor)

dr. Maria Aloni (chair)

dr. Martha Lewis

dr. Sandro Pezzelle



INSTITUTE FOR LOGIC, LANGUAGE AND COMPUTATION

## Abstract

Since the rise of Conceptual Metaphor Theory (CMT) in the 1980s, metaphor theorists have investigated the numerous and diverse effects that metaphor has on cognitive processes. It has been observed that in some recurring contexts, metaphoric language tends to be preferred to literal language and that certain metaphors tend to be preferred to others. This has led some scholars (among others, Steen [2008]) to emphasize the *communicative dimension* of metaphor, a dimension in which metaphors are sometimes used deliberately to produce specific effects. In this thesis, I analyze the different intentions behind metaphor use that have been studied in the literature and organize them into a unified taxonomy. I argue that in the context of discourse analysis - as well as in NLP applications - the notion of intention is best understood as a property attributed to linguistic acts, rather than the utterer's guessed mental state. Such a view allows me to account for the observed asymmetries in production *vs* reception of metaphor and secures this approach from the most common critiques addressed to Deliberate Metaphor Theory (see *e.g.* Gibbs [2011]). *Eleven categories* of metaphor, distinguished by their primary intention, have emerged from my research: *Lexicalized metaphor, Persuasiveness, Argumentative metaphor, Vividness, Precision, Artistic metaphor, Imageability, Explanation, Heuristic reasoning, Humour, Social interaction*. A first experience with corpus annotation - based on the VU Amsterdam Metaphor Corpus (Steen [2010]) - has been carried out with the aim of preliminarily validating the taxonomy and suggesting directions for future improvements.

**Keywords**— metaphor, intention, CMT, corpus linguistics

# Acknowledgements

When I was first introduced to the topic, I could not imagine that metaphor would become a constant object of my thoughts. Despite my instant curiosity, however, writing this thesis was not all moonlight and roses.

First of all, I would like to express my gratitude to my supervisors, Katia and Xiaoyu. You gave me the opportunity to explore this stimulating field of research, you guided me through all the phases of the project and you taught me so many things that I ignored I was able to do.

I would like to thank also all the other members of the committee, Maria Aloni, Martha Lewis and Sandro Pezzelle, for taking the time to read my thesis. I imagine how the life of a researcher can be stressful; I hope at least that this was a pleasant reading. Thank you Maria for being a great academic mentor, for helping me to find my way through and after the Master of Logic.

A substantial part of what we are lies within others. I would like to say thank you:

To my friends of yesterday and today - too many to mention - you helped me to become the person I am now; I hope I could give you back as much

To my Italian high school teacher, who once told me I would not find satisfaction in mathematics - you were right!

To my family for supporting me in all circumstances

To my sisters and brothers, Nicole, Giulia and Daniele, for being my shield and refuge

To my mum, Luciana, and my dad, Sandro, who taught me that sacrifice is the only currency of true value

To Giacomo, who reminds me that everyone deserves to be loved.

As Simone Weil wrote, attention is the rarest and purest form of generosity. So thank you for reading this.

# Contents

<b>1</b>	<b>Introduction</b>	<b>4</b>
1.1	Objective & Methodology . . . . .	6
1.2	Structure of the thesis . . . . .	7
1.3	Terminology . . . . .	8
<b>2</b>	<b>Metaphor</b>	<b>10</b>
2.1	Metaphor in language . . . . .	10
2.1.1	The linguistic forms of metaphor . . . . .	10
2.1.2	A family-resemblance approach . . . . .	12
2.1.3	Metaphor identification procedures . . . . .	13
2.2	The interpretation of metaphor . . . . .	14
2.2.1	The traditional view . . . . .	14
2.2.2	Modern theories of metaphor interpretation . . . . .	15
2.3	Metaphor in thought: the cognitive turn . . . . .	17
2.3.1	Conceptual Metaphor Theory (CMT) . . . . .	18
2.3.2	Deliberate Metaphor Theory (DMT) . . . . .	19
<b>3</b>	<b>Intention</b>	<b>23</b>
3.1	Intentionality . . . . .	24
3.1.1	The phenomenological tradition . . . . .	24
3.2	Intentions in language use . . . . .	26
3.2.1	Communicative intention (CI) in pragmatics . . . . .	26
3.2.2	Putting CI into a wider picture . . . . .	27
3.2.3	Intentions in the head . . . . .	28
3.3	Perceived intentions . . . . .	29
3.3.1	De-psychologizing intentions . . . . .	29
3.3.2	Intention attribution . . . . .	30
3.3.3	Moments of understanding . . . . .	31
<b>4</b>	<b>Metaphor and intention</b>	<b>32</b>
4.1	Why do we use metaphors? . . . . .	32
4.2	Previous work . . . . .	33

<b>5</b>	<b>The taxonomy</b>	<b>38</b>
5.1	Building the taxonomy . . . . .	39
5.1.1	Defining alternatives . . . . .	39
5.1.2	Desiderata and approach to compiling the taxonomy . . .	39
5.2	The taxonomic categories . . . . .	40
5.2.1	Lexicalized metaphor . . . . .	40
5.2.2	Persuasiveness . . . . .	41
5.2.3	Argumentative metaphor . . . . .	42
5.2.4	Vividness . . . . .	43
5.2.5	Precision . . . . .	44
5.2.6	Artistic metaphor . . . . .	45
5.2.7	Imageability . . . . .	46
5.2.8	Explanation . . . . .	47
5.2.9	Heuristic reasoning . . . . .	48
5.2.10	Humour . . . . .	49
5.2.11	Social interaction . . . . .	49
<b>6</b>	<b>Corpus Annotation</b>	<b>51</b>
6.0.1	Collecting the data . . . . .	51
6.0.2	Cases of exclusion . . . . .	53
6.1	The annotation . . . . .	54
6.1.1	Annotation procedure and guidelines . . . . .	54
6.1.2	Annotation reliability . . . . .	54
6.2	The dataset . . . . .	56
6.2.1	Genre . . . . .	56
6.2.2	Novelty . . . . .	59
6.2.3	POS . . . . .	61
6.3	Qualitative analysis . . . . .	63
6.3.1	Genre . . . . .	64
6.3.2	Novelty . . . . .	65
6.3.3	POS . . . . .	66
<b>7</b>	<b>Conclusion</b>	<b>68</b>
7.1	Contributions and limitations of this study . . . . .	68
7.2	Directions for future research . . . . .	69
<b>A</b>	<b>The annotation guidelines</b>	<b>71</b>
A.1	Explanation . . . . .	71
A.1.1	Lexicalized metaphors . . . . .	71
A.1.2	Intention categories . . . . .	72
A.2	Example . . . . .	75

# Chapter 1

## Introduction

Metaphor is a complex and yet fascinating phenomenon. Beyond this general consensus, however, numerous academic disputes plague the field: does metaphoricity refer to the use of single words/expressions or can it span over (and beyond) sentence level? Is metaphor first and foremost a linguistic phenomenon, a cognitive one or both? Is metaphor use the result of mainly unconscious processes or is it triggered by willing deliberation? As it is often the case, the value of the research can be measured by the number of questions it stimulates. The Oxford English Dictionary defines metaphor as follows:

The figure of speech in which a name or descriptive term is transferred to some object different from, but analogous to, that to which it is properly applicable. (Simpson and Weiner [1998])

From this preliminary definition, a minimal characterization of metaphor can be sketched already. First of all, metaphor is *at least* a linguistic phenomenon, it is something that we find in language. Second, it is a so-called *figure of speech*, where by this umbrella expression I shall group all language uses that depart from the *literal* one. Finally, metaphoric interpretation involves a process of improper attribution or transfer of features. Thus, unless otherwise specified, when talking about *metaphor* throughout this thesis I shall mean a figurative use of language whose interpretation involves a process of meaning transfer. Here are few examples of literary metaphors to get some intuition<sup>1</sup>:

No man is an island entire of itself; every man / is a piece of the continent,  
a part of the main

Love's not Time's fool

And tonight our skins, our bones, / that have survived our fathers, /  
will meet

---

<sup>1</sup>Quotes are from "No Man in an Island" by John Donne, Sonnet 116 by William Shakespeare and "Loving The Killer" by Anne Sexton.

It should be noted that metaphors are not just poets' prerogative. As a matter of fact, we use them quite unconsciously even writing a master thesis: "Intentions behind metaphor use", "Academic disputes plague the field", "The Oxford English Dictionary defines".

Since the "cognitive turn" in the 1980s, Conceptual Metaphor Theory - henceforth, CMT - has become increasingly prominent in the field of metaphor studies. One of its main tenets is that metaphor is primarily a matter of thought (Lakoff and Johnson [1980]). Within CMT, a conceptual metaphor is defined as a mapping between two conceptual domains: the SOURCE and the TARGET. Metaphoric mappings allow to conceptualize the TARGET (often more complex or abstract) based on prior knowledge of the SOURCE (more concrete). For instance, the conceptual metaphor TIME is MONEY - where TIME is the TARGET and MONEY is the SOURCE - allows to understand the abstract domain of time in terms of the more concrete domain of money. Thus, time can be gained, spent, wasted, etc. Following the rise of CMT, metaphor theorists have begun to study the many and varied effects that metaphor has on cognitive processes. It has been observed that in some recurring contexts, metaphorical language tends to be preferred to literal language and that specific metaphors tend to be preferred to others. This has led some researchers - *e.g.* Steen [2008] - to emphasise the communicative dimension of metaphor, a dimension in which metaphors are sometimes used deliberately to produce specific effects.

However, psychology-oriented scholars have advanced serious criticisms against the theory developed by Steen and colleagues (Deliberate Metaphor Theory, DMT) - see, for instance, Gibbs [2011, 2015]. In particular, these authors maintain that we cannot rely on the notion of deliberate metaphor<sup>2</sup> since: (1) there are no specific linguistic markers of this type of metaphor and (2) we are not able to observe the speakers' actual intentions and the speakers themselves may be mistaken about their intentions. Nonetheless, the attribution of intentionality plays a crucial role in the experience of any meaningful artefact, including language (Gibbs [1999]). In this thesis, I argue that in the context of discourse analysis - as well as in NLP applications - the notion of intention is best understood as a property attributed to linguistic acts, rather than the speakers' guessed mental state. The Wittgensteinian intuition behind my approach<sup>3</sup> is that we do not need to "see" what intentions are in speakers' minds for their words to be meaningful. It might be that we attribute intentions, so to say, by default. In other words, we might *perceive* intentions behind utterances, whether or not these are actually there. This view allows me to account for the asymmetries observed in the production and reception of metaphors. Moreover, the approach is safe from the most common criticisms addressed to DMT.

---

<sup>2</sup>That is, the intentional use of metaphor *as* metaphor (Steen [2017]).

<sup>3</sup>*Cf.* the "beetle in a box" argument (Wittgenstein [1958] §293).

## 1.1 Objective & Methodology

With regard to figurative language, one broad research question that one might ask is: *why* do people use figurative language? (Roberts and Kreuz [1994]). This thesis tries to provide an answer to this question in the special case of metaphor. Incidentally, the answer responds also to one of Gibbs' main challenges to DMT, namely the supposed inscrutability of intentions. Towards certain *discourse-goals*, I argue, metaphoric language is more effective than literal language and, as a consequence, tends to be preferred to it. It is possible to track such discourse-goals attributing intentions to linguistic data. The latter are not to be interpreted as speakers' goals, somehow "present" to their minds, but rather as goals perceived by the receiver<sup>4</sup>. If it were settled that the perception of intentions plays a crucial role in actual language comprehension - and not just in interpretation<sup>5</sup> - then building a computational system able to automatically attribute intentions would be beneficial for many NLP applications. My initial step towards this long-term research objective is to analyze the different intentions behind metaphor use that have been studied in the literature and present them in a unified taxonomy. This taxonomy could then serve as a basis for *e.g.* a neural classifier.

Towards the goal, I adopt different methodologies:

- *Literature review.* In order to clarify the scope of my research, I survey traditional semantic accounts of metaphor, as well as approaches in Gricean pragmatics. I consider some influential theories stemming from cognitive linguistics - in particular CMT and DMT. I analyse the notions of intentionality and intention in the phenomenological and the analytic traditions.
- *Corpus linguistics.* I familiarise with existing corpora annotated for metaphor processing, in particular the *VU Amsterdam Metaphor Corpus* (Steen [2010]) - henceforth, VUAMC - and with psycholinguistic studies correlating real linguistic data with intentions. This allows me to build a reasonable taxonomy of intentions behind metaphor use.
- *Linguistic annotation.* I collect linguistic data from the VUAMC and annotate them according to the taxonomy. In this way, I estimate the robustness of my proposal. I also perform quantitative as well as qualitative analyses on my dataset.

---

<sup>4</sup>Note that I do not deny that, in some situations, the producer might be consciously producing language to achieve their goals. I am stressing the fact, however, that conscious planning and intentional action are two distinct notions and that the latter is tied to the observer's viewpoint. More on this in Chapter 3.

<sup>5</sup>The distinction is adopted from Gibbs [1994]. A more detailed discussion is worked out in Chapter 3.

## 1.2 Structure of the thesis

The thesis is conceptually divided in two parts. The first part is theoretical; it focuses on the notions of metaphor and intention in language use. Some questions that it aims to answer are: what counts as metaphor in language? What are the main theories of metaphor interpretation? What is an utterer's intention? Is metaphor use always intentional/deliberate/conscious? After having addressed all these points, I propose a unified taxonomy of intentions that are most commonly attributed to metaphor uses. The taxonomy is - at least in part - empirically supported. Whenever possible, I report psycholinguistic studies confirming the effectiveness of metaphoric language in cases where an intention from the taxonomy is perceived. For instance, *Persuasiveness* was included in the taxonomy because there is psychological research confirming that in contexts where the producer is supposed to have the intention of persuading the receiver, metaphorical language tends to be preferred and to be more effective. However, it must be noted that this kind of empirical grounding is not available for all the categories. Thus, also studies from a more theoretical literature are considered.

The second part is data-driven; its aim is to check the empirical robustness of the proposed taxonomy against real linguistic data. Towards this goal, I annotated metaphors from the VUAMC<sup>6</sup>. Specifically, I collected and annotated a set of around 1200 lexical units from the corpus. I performed several analyses correlating attributed intentions and metaphor type, genre, novelty and part-of-speech.

Here below is a summary of the content of each chapter:

- *Theoretical part.* In the first two chapters of the thesis, I clarify the notions of linguistic metaphor and (speakers') intention respectively. Chapter 4 summarises previous work relating metaphor use and intentions and highlights why the present study is needed. In Chapter 5, I provide a first taxonomy of intentions behind metaphor use. Eleven categories of metaphor, distinguished by their primary intention, have emerged from my research.
- *Data-driven part.* The annotation setup, as well as the results, are summarised in Chapter 6. First, I present the data and the annotation guidelines. I also compute inter-annotator agreement (Cohen's kappa) on a subset of the data. Then, I summarise the output of my annotation with specific figures for different metaphor types and I perform some analyses on the results. Finally, I comment on my findings and draw relevant conclusions. Chapter 7 hints at some limitations of this study and suggests directions for future research.

---

<sup>6</sup>In order to assess the reliability of my annotation, a subset of the data was annotated also by another expert annotator.

### 1.3 Terminology

For the ease of exposition, it will be useful to introduce already some terminology. The terms that I shall present have become an integral part of metaphor theory jargon. Despite their specific academic origin, I will make use of the following dichotomies with no particular theoretical bearing throughout my thesis. In any sentence that contains an alleged metaphoric expression or phrase, one can generally make the following distinctions<sup>7</sup>:

- At surface linguistic level: *focus* and *frame*.

The terminology was introduced in M. Black's article *Metaphor* (Black [1955]). In order to recognize a sentence as metaphorical, there must be some term or expression that calls for a non-literal interpretation. In Black's words: "when we speak of a relatively simple metaphor, we are referring to a sentence or another expression, in which some words are used metaphorically, while the remainder are used non-metaphorically." (p.275). Thus, we can distinguish between:

- The word, phrase or expression that is being used metaphorically; to be called the *focus* of the metaphor.
- The rest of the sentence, consisting of words that are being used literally; the *frame* of the metaphor.

"The chairman ploughed through the discussion." (p.275)

In this example, the word "ploughed" calls for a metaphoric interpretation, it is used metaphorically and hence constitutes the focus of the metaphor. The rest of the sentence is the frame. Throughout the thesis, I adopt the convention of underlying the focus of each metaphor being analysed.

- At semantic level: *Tenor/Topic* and *Vehicle*.

In his *Philosophy of Rhetoric* (Richards [1936]), I. A. Richards conceives of metaphors as interactive processes, whereby two thoughts or ideas are simultaneously activated. In this interaction, we can identify an idea which is being presented with the name of another one. "I. A. Richards suggests to call *Tenor* the underlying idea and *Vehicle* the idea under whose name the first one is apprehended." (Ricoeur [1975] p.105). In Fregean terms, we can distinguish between the sense (*Sinn*) and the reference (*Bedeutung*) of any referring expression. Then, we are in a position to adopt a slightly adapted version of Goatly's definitions (Goatly [1997] p.8)<sup>8</sup>:

- The conventional referent of the focus is called the Vehicle of the metaphor<sup>9</sup>.

---

<sup>7</sup>For a comprehensive discussion of the first two dichotomies, refer to Ricoeur's third study in (Ricoeur [1975]). English quotations from Ricoeur have been translated by myself.

<sup>8</sup>Following (Leech [1969] Ch. 9), the original term *Tenor* is substituted with *Topic*.

<sup>9</sup>In order to simplify the terminology, many authors refer to the linguistic unit that refers to the Vehicle/Topic as the Vehicle/Topic-term.

– The contextual, unconventional referent is the Topic of the metaphor.

To this couple, Goatly adds also the notion of *Ground*, by which he means the set of similarities and/or analogies between Vehicle and Topic that are involved in the metaphor. Hence, in the following example:

”The past is a foreign country; they do things differently there.” (Goatly [1997] p.8)

”The concept ‘foreign country’ is the Vehicle, the concept ‘the past’ is the Topic and the similarity, the Grounds, is the fact that in both foreign countries and in the past ‘things are done differently’.” (*Ibid.*)

- At conceptual level: *SOURCE* and *TARGET*.

The influential book *Metaphors we live by* (Lakoff and Johnson [1980]) has made way for *Conceptual Metaphor Theory*, a paradigm in which metaphor is primarily a matter of thought rather than of language. From a cognitive perspective, metaphor ”is defined as understanding one conceptual domain in terms of another conceptual domain.” (Kovecses [2010] p.4), where by *conceptual domain* we shall mean ”any coherent organization of experience.” (*Ibid.*). Roughly, one could think of a conceptual domain as a set of entities, relations occurring among them and events that are typically observed in experience. Different experiences are made meaningful through the lenses of a conceptual domain, which provides a coherent organization for the diverse *stimula* that constitute the experience. In a conceptual metaphor, we always have two constituents:

- The *SOURCE* domain: ”The conceptual domain from which we draw metaphorical expressions to understand another conceptual domain.” (*Ibid.*)
- The *TARGET* domain: ”the conceptual domain that is understood this way.” (*Ibid.*)

A conceptual metaphor ought to be distinguished from its possible linguistic manifestations. I shall adopt the convention, customary within the cognitive tradition, of reserving uppercase letters for conceptual domains and lowercase letters for linguistic entities. For instance, the linguistic metaphor:

”Your claims are indefensible.” (Lakoff and Johnson [1980] p.4)

is a manifestation of a general conceptual metaphor:

ARGUMENT IS WAR

where ARGUMENT is the TARGET domain of the metaphor and WAR is the SOURCE domain.

## Chapter 2

# Metaphor

In this chapter, I first focus on metaphor identification and interpretation. Then, I introduce CMT and hint at subsequent developments within the cognitive tradition. In particular, I present DMT and address two challenges that have been advanced against it. Responding to one of the challenges will require a thorough investigation of intentionality. The next chapter is devoted to such a task.

### 2.1 Metaphor in language

#### 2.1.1 The linguistic forms of metaphor

Already at the level of its linguistic manifestations, that is, at the level of possible grammatical combinations of focus and frame, metaphor proves to be a heterogeneous phenomenon. Nonetheless, in the literature there is a certain bias - generally motivated by talks of simplicity - to focus on *copula metaphors*, *i.e.* metaphors with syntactical form "A is B", where A and B are typically noun phrases. The presence of the focus term "B" - and hence of its referential meaning, the Vehicle - triggers a metaphoric interpretation; it is because some B-features are predicated of A that the overall sentence is metaphorical. The often cited examples are taken from literary texts. Let us consider, for instance, the famous:

"it is the east, and Juliet is the Sun" (Shakespeare [1993])

This sentence is metaphorical. Many theories of metaphor would interpret the sentence as predicating of Juliet some properties customarily associated to the Sun (either by means of comparison or by transfer). The focus "Sun" evokes the associated referent (the metaphor Vehicle) in such a way as to trigger the predication of some of its contextually salient features to Juliet (the Topic).

However, taking copula metaphors as the bulk of metaphor in actual language use is misleading. As a matter of fact, metaphors where the focus is part

of a metaphorical noun phrase in general, and copula metaphors in particular, represent just a small portion of the phenomenon. Once we take into account real linguistic data, we soon realize that metaphor interests potentially all *parts of speech* (POS). Among others, *verbal metaphors* are of primary interest. These metaphoric expressions hinge on a focus consisting of a verb phrase:

I know where the time goes. (Cameron [2003] p.93)

There are several quantitative studies supporting the claim that verbal metaphors are actually the most widespread. Here below I briefly summarize the results of a manually annotated study and of two data-driven studies.

- In her thorough analysis of metaphors in the context of classroom activity, Cameron [2003] showed that verbal metaphors (single verb, verbal phrase, phrasal verb, etc.) are the most frequent ones and account alone for 47% of cases in her study, that is, 333 out of 711 instances (pp.88,89). They are followed by *prepositional metaphors* (preposition and prepositional phrase), which represent 34% of cases (244/711). Just the 15% (103/711) consists of nominal metaphors (single noun, noun phrase, etc.), and within this category just the 5% (33/711) consists of what I have called copula metaphors ("single noun" in Cameron).
- Shutova [2011] developed a computational model for automated metaphor identification and interpretation. Her focus is on single-word, verbal metaphors. The author conducted a corpus study where she identifies metaphorically used words (verbs, nouns, adjectives and adverbs) following a modified version of the MIP<sup>1</sup>. Her goal was to ensure that Cameron's findings were not biased by the discourse genre that she analyzed (educational discourse) but could instead be safely generalized. Shutova's corpus consists of 7 texts from the BNC (Consortium [2007a]) containing a total of 13.642 words. Her findings confirm the expectations: "metaphors expressed by a verb are by a large margin the most frequent type and constitute 68% of all metaphorical expressions." (Shutova [2011] p.61).
- Steen [2011] has analysed metaphors from the British National Corpus Baby (Consortium [2007b]), resulting in the VUAMC (Steen [2010]), a corpus of English texts covering four registers (Academic, News, Fiction, Conversation) and annotated for metaphoricity at word level (total of almost 190,000 lexical units). In addition to these data, a set of over 100,000 lexical units from Dutch newspaper and conversation corpora was considered. The author concludes that prepositions, determiners and verbs are the most frequent words classes to be used metaphorically<sup>2</sup>.

---

<sup>1</sup>Metaphor Identification Procedure, see Section 2.1.3 in this thesis for more details.

<sup>2</sup>"Average percentages place metaphorical use of prepositions and determiners [...] at the top, above 30%; of verbs, nouns, adjectives, and adverbs in the middle, between about 25% and 10%; and of conjunctions and all other function words at the bottom, at less than 2%.[...] For the four major content word classes, there is a clear cline in metaphorical use from verbs

### 2.1.2 A family-resemblance approach

From what we have said, we can conclude that the scope of linguistic metaphor should be wider than single words, it should comprise potentially all POS and diverse syntactic as well as semantic configurations. To stress the point once more, we should not limit ourselves to copula metaphors. Cameron proposes two necessary conditions for detection of metaphoricity (Cameron [2003] pp.58-60)<sup>3</sup>:

1. Presence in the discourse of a focus/Vehicle-term, a word or phrase that is anomalous/incongruous against the surrounding discourse.
2. The incongruity produced by the focus can be resolved by some "transfer of meaning" (interaction, conceptual mapping or blending) from the Vehicle to the Topic.

However, one soon comes to realise that these conditions are not sufficient. As a matter of fact, it might be reasonable to assume that no list of necessary and sufficient conditions can be found. On the other hand, metaphor could be better understood as a *family-resemblance* category. The notion of family-resemblance, which was most notoriously popularized by Wittgenstein, is an alternative to categorization in terms of necessary and sufficient conditions. Among the individuals belonging to a family-resemblance category "we see a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail." (Wittgenstein [1958] §66). Cameron [2003] points out three major differences between family-resemblance categories and classical, set-theoretic categories (p.61):

- members of a family-resemblance category do not necessarily share common properties, but can resemble each other in a range of different ways,
- classical categories are bounded and finite; family-resemblance categories are open, and
- family-resemblance categories often have prototypical or central members.

The last point in particular was already stressed by Lakoff and Johnson [1980] (pp.122,123) in relation to how human categorization works. The authors cite empirical work by Eleanor Rosch (Rosch [1977]), who shows that human categorization hinges on prototypes and resemblance to prototypes rather than

---

through nouns and adjectives to adverbs." (Steen, 2011 p.52). Performing a double-check on the online version of the VUAMC, it turns out that within the metaphor related words of any type, 6934 belong to the word category of prepositions, followed by verbs (6518) and nouns (4860). It is not clear if some prepositions marked as metaphorically related are part of phrasal verbs, in which case it would be reasonable to add them to a macro category of verbal metaphor as done in Cameron's study.

<sup>3</sup>Note that these are not assumptions about metaphor understanding in everyday language, but rather procedural steps in the identification of linguistic metaphor. To be clear, accounts of metaphor understanding that require previous literal interpretation and subsequent recognition of semantic anomaly (*Standard Pragmatic Model*) have proved to be not empirically supported (see *e.g.* Gibbs [1994] p.100).

fulfillment of defining conditions. Consequently, those copula metaphors that have received special attention in the philosophical literature may represent the prototypical cases, while a whole landscape of metaphoric expressions remains the object of investigation<sup>4</sup>.

### 2.1.3 Metaphor identification procedures

Once one has acknowledged the complex nature of linguistic metaphor, decisions still need to be made. In particular, in order to support any claim on metaphor in actual language use, an operationalisation is needed in order to decide which lexical units should count as metaphors. The need for a common identification procedure, to be shared among metaphor scholars, has led to the MIP, an influential approach by the Pragglejaz Group, originally composed of 10 experts in the field. The main idea behind this identification procedure is to think whether the alleged metaphoric expression has some *basic meaning* (more concrete, related to bodily action, more precise, historically older), that differs from the contextual meaning (Group [2007] p.3).

A refinement of the procedure - the MIPVU - was carried out by Steen and colleagues in (Gerard J. Steen and Pasma [2010] Chapter 2)<sup>5</sup>. The main difference between the MIP and the MIPVU is that while the former presupposes that interpretation always requires a transfer - from the basic meaning to the contextual one - the latter leaves this transfer at a level of a potentiality. In addition, the output of the procedure is not just the identification of *metaphor-related-words* (MRWs) but a more fine-grained distinction among the following metaphor types<sup>6</sup>:

- *Indirect metaphor*: the contextual meaning is not the basic one, but the indirect meaning of the word.
- *Direct metaphor*: there is no contrast between the contextual and the basic meaning of the word. In order to interpret the sentence, however, the addressee has to map the referent in the SOURCE domain to some contextually relevant TARGET domain.
- *Implicit metaphor*: a non-content word (*e.g.* a pronoun) is related to some underlying conceptual metaphor due to its lexico-grammatical functions.

Consider the following example:

Imagine your brain as a house filled with lights<sup>7</sup>.

---

<sup>4</sup>As Cameron puts it: "it may be useful to use the working assumption that 'metaphor' is not a unitary phenomenon and to adopt a family-resemblance approach. [...] Instances in the data may resemble the central type in various ways, and these different types of resemblance may lead to different subcategories of 'metaphor'." (Cameron [2003] pp.60,62).

<sup>5</sup>Note that the MIPVU was the identification procedure adopted in the creation of the VUAMC, which is the corpus my annotation is based on - ref. Chapter 6.

<sup>6</sup>Definitions adapted from (Steen [2011]).

<sup>7</sup>From *Time Magazine*, 17 July 2000.

This sentence is used in the article to talk about the Alzheimer's disease and its effects on cerebral activity. Steen argues that while the metaphor of the house is *direct*, requiring the activation of a conceptual mapping, the use of "filled" instead is *indirect*, since the conceptual domain of its basic sense is not relevant to the interpretation process.

To sum up, the common core of both identification procedures is the interpretation of metaphor (actual in the MIP and potential in the MIPVU) by a process of meaning transfer. As anticipated in the Introduction, this should be the pivoting element in the recognition of a linguistic expression as metaphorical, no matter its syntactic or semantic profile. In what follows, I hence turn the discussion to metaphor interpretation.

## 2.2 The interpretation of metaphor

### 2.2.1 The traditional view

Aristotle's conception of metaphor influenced classical rhetoric and later developments. According to him, metaphor involves a transfer by analogy or proportion, whereby an alien name is used instead of a current one<sup>8</sup>. Following Aristotle, traditional rhetoricians argue that metaphor merely decorates language without adding new information. A theory of metaphor interpretation reduces thus to a *theory of substitution*: given a metaphor, the task of the interpreter is to find the ordinary word that the metaphor stands for and signal out the *reason* for the substitution, that is, the relation between the two words that motivates the metaphorical transfer.

The Substitution Theory of metaphor faced criticism during the 20th century, coinciding with a renewed interest in metaphor studies. For instance, Ricœur contends that substitution alone is inadequate. Metaphor affects not only names but all word types and its interpretation requires the entire sentence. Metaphoric expressions are not just simple designators; they often involve qualification<sup>9</sup>. Thus, a comprehensive theory of metaphor interpretation must consider the predicative character of metaphors and look at the context of the whole sentence - and possibly beyond.

A "cognitive version" of the Substitution Theory is what Lakoff & Johnson have dubbed the Weak Homonymy View (Lakoff and Johnson [1980] p.111). This theory suggests that the various concepts that are expressed by the same word - *viz.* the metaphorical and literal meanings of the word - are related

---

<sup>8</sup>"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." (Aristotle [2008] p.23).

<sup>9</sup>As Ricœur puts it: "What is the metaphorical use of a noun? To "make a tiger of an angry man", "of a great writer a swan": is this not already something other than designating a thing by a new name? Is it not "naming" in the sense of characterizing, of qualifying?" (Ricœur [1975] p.78).

to each other by similarity. This variation on the traditional view has been criticized by Lakoff & Johnson on different grounds (pp.112,113).

## 2.2.2 Modern theories of metaphor interpretation

Here below I provide a brief overview of modern theories of metaphor interpretation. In particular, pragmatic theories are the most relevant to my approach.

- *Comparativist theories.* A comparativist theory sees metaphor as "an implicit comparison, an elliptical simile" - the expression is due to Beardsley [1962]. Thus, to interpret a metaphor, is to perform a comparison between two terms: the Tenor and the Vehicle. As Lycan [2000] points out, one can distinguish among what he calls a Naive Simile Theory and a Figurative Simile Theory. The former is historically older and has its origin in ancient rhetorics<sup>10</sup>. It takes the comparison to be literal, that is, it assumes that Tenor and Vehicle possess independent, objective features and that some of these match - thus allowing a meaningful comparison. Figurative Simile Theory can be seen as a modern improvement on the Naive Theory. Inspired by Tversky [1977]'s approach to comparison, it has been defended by several contemporary scholars<sup>11</sup>. The key point made by these authors is that, while literal similarity is symmetric, metaphors are typically unidirectional. In order to account for such asymmetry, they introduce a new criterion of figurative similarity, which is based on the notion of *salient features* of an object.

Objectivist accounts on similarity (with or without the restriction to salient features) have been criticised by proponents of the conceptual theory of metaphor (see Lakoff and Johnson [1980] p.153-155). In particular, Lakoff and Johnson highlight how metaphors don't just relate preexisting similarities but can create new similarities and such similarities are most of the time of a personal, experiential nature rather than objective.

- *Semantic theories.* These theories take the interpretative process by which metaphor works to be a kind of contextual interaction between different meanings, typically resulting in semantic innovation. A first explicit elaboration can be found in Richards [1936], who also introduced specific names for the two terms of the interaction, namely the Tenor and the Vehicle. Interaction may highlight similarities but also dissimilarities, which is why Ricœur talks more specifically of a theory of *tension* rather than mere interaction<sup>12</sup>. This tension actually occurs at three levels (Ricœur [1975] p.311):

– within the sentence, between frame/Topic and focus/Vehicle,

---

<sup>10</sup>See, for instance, the *Poetics* by Aristotle [2008] or the *Institutio Oratoria*, Book VIII, by Quintilian [1921].

<sup>11</sup>For instance, refer to the *Salience Imbalance Theory* elaborated by Ortony [1979], or the *Figurative Simile Theory* by Fogelin [1988].

<sup>12</sup>Note that already Beardsley highlights that semantic innovation is due to tension within the metaphor (see *e.g.* Beardsley [1962]).

- at sentence level, between literal and metaphoric interpretation, and
- in the function of the copula, which expresses equality and inequality<sup>13</sup>.

The truth of a metaphorical statement is thus paradoxical in nature and rests ultimately on a tension in the relational function of the copula (p.321).

Max Black, on the other hand, stresses how a metaphorical Vehicle (focus in his terminology) functions as a filter: to evoke a Vehicle makes us see the Topic from a certain perspective, "suppresses some details, emphasises others - in short, organizes our view [of it]." (Black [1955] p.288). What is being activated in the process of metaphoric interpretation are *commonplaces associated* to the Vehicle and "applied" to the Topic. This particular characteristic of metaphors is what Moran calls the *framing effect* (Moran [1989]). Metaphors make us see the Topic under a particular (and often new) light, namely the one suggested by the juxtaposition of the Vehicle. The framing effect, as we shall see, will be further investigated by cognitive linguists.

- *Causal Theories.* Advocates of causal theories highlight the *effects* of metaphor. They "maintain that in metaphor, no words go missing and neither words nor speakers are induced to mean anything out of the ordinary." (Hills [2022]). Davidson, in particular, makes this point clear in his influential paper *What Metaphors Mean*: "metaphors mean what the words, in their most literal interpretation, mean, and nothing more." (Davidson [1978] p.32). He contends that there is traditionally a fundamental confusion between the meaning of a metaphor and what a metaphor is used for, that is, its effects. Like similes and other linguistic devices, metaphors are used to direct our attention to some aspects of the world and to invite us to make comparisons<sup>14</sup>. Thus, what seems to be the meaning of a metaphor, is rather the effect it has on us, that is, what the metaphor makes us see.
- *Pragmatic Theories.* For pragmatic theories, metaphorical meaning is explained in terms of the utterer's intended meaning. In his seminal paper *Logic and Conversation* (Grice [1975]), Grice takes the meaning of a metaphor to be a conversational implicature. He mentions metaphor as an example of flouting the maxim of Quantity: since a metaphorical statement is obviously true or false, the hearer must recognize that the literal meaning is not the intended meaning and they will proceed to work

---

<sup>13</sup>Note that, in his *La métaphore vive*, Ricœur focuses on what I have dubbed copula metaphors.

<sup>14</sup>"The simile says there is a likeness and leaves it to us to pick out some common feature or features; the metaphor does not explicitly assert a likeness, but if we accept it as a metaphor, we are again led to seek common features." (p.40).

out the relevant implicatures<sup>15</sup>. A more detailed version of the pragmatic account is found in Searle [1979]. After having reconciled metaphoric interpretation with the general task of recovering the utterer's meaning<sup>16</sup>, he breaks down this process in three steps (Lycan [2000] p.219):

1. If the sentence is somehow *defective*, the hearer realises they have to look for a non-literal (*viz.* metaphoric) interpretation.
2. The hearer mobilizes a set of strategies to generate possible speaker's meanings (*e.g.* make comparisons between Vehicle and Topic).
3. The hearer employs another set of strategies to determine which one, is, most likely, the actual intended meaning (*e.g.* consider which Vehicle-features are applicable to the Topic).

## 2.3 Metaphor in thought: the cognitive turn

Between the late 1970s and early 1980s, a renewed attitude towards the study of metaphor has started to emerge. There are at least three unifying intuitions at the basis of the different approaches that were developed since:

- Metaphor is not a marginal aspect of language, relegated to the domains of poetry and literature. It is in fact part of our every-day language and pervades potentially all registers.
- The function of metaphor is not only, neither primarily, ornamental. Metaphor plays a key role in cognitive processes such as imageability, particularization, understanding, memorability, etc.
- Metaphor is not just a matter of language, but also of thought. In fact, it is because we tend to think metaphorically that our language displays such a wealth of metaphors.

The first two points are already present in the seminal paper *Why metaphors are necessary and not just nice* by Andrew Ortony (Ortony [1975]), which well exemplifies the new spirit. The link between metaphor and cognitive processes is there made explicit<sup>17</sup>. The author puts forward three theses about the role of metaphor in communication, namely:

---

<sup>15</sup>"Examples like "You are the cream in my coffee" characteristically involve categorial falsity [...] The most likely supposition is that the speaker is attributing to his audience some feature or features in respect of which the audience resembles (more or less fancifully) the mentioned substance." (Grice [1975] p.53).

<sup>16</sup>"The problem of explaining how metaphors work is a special case of the general problem of explaining how speaker's meaning and sentence or word meaning come apart." (Searle [1979] p.76).

<sup>17</sup>"Metaphor permits the transfer of abstracted, but nevertheless nondiscretized, coherent, chunks of characteristics from the vehicle to the topic. These chunks are, as it were, predicated *en masse* and they bear a special relationship to cognition and perception because they have not (themselves) been internally discretized." (p.50).

- *Compactness.* Metaphors allow to convey whole "chunks" of experience at once and in this way constrain particularisation<sup>18</sup>.
- *Inexpressibility.* "Metaphor enables the predication by transfer of characteristics which are unnameable." (p.49)
- *Vividness.* Metaphors are more vivid than their non-metaphorical equivalents because, avoiding the discretization of experience typical of literal discourse, remain closer to experience as it is phenomenologically perceived.

One of Ortony's intuitions was taken up by proponents of CMT; namely that metaphoric transfer generally works from the known to the unknown: "metaphors are necessary as communicative device because they allow the transfer of coherent chunks of characteristics - perceptual, cognitive, emotional and experiential - from a vehicle which is known to a topic which is less so." (p.53).

### 2.3.1 Conceptual Metaphor Theory (CMT)

The first complete exposition of CMT is found in the influential book *Metaphors we live by* (Lakoff and Johnson [1980]). Lakoff & Johnson's innovation was the recognition of metaphor as an essentially cognitive phenomenon. As the authors put it: "our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature." (p.3). This means not only that some concepts can be understood in terms of others, as it is the case for example when we try to explain some unfamiliar notion through a metaphor. Concepts related to complex, abstract activities *are* metaphorically structured, that is, their very constitution depends on the diverse metaphors through which we understand them. Paradigmatic cases are abstract concepts such as emotions. For instance, LOVE is constituted through a number of (culturally-dependent) metaphors, each highlighting some aspects of love: LOVE IS A PHYSICAL FORCE, A PATIENT, MADNESS, MAGIC, WAR, etc.

In general, a *conceptual metaphor* is defined as a cross-domain mapping between conceptual domains - the SOURCE and TARGET; see Section 1.3. Typically, an abstract domain is understood in terms of a more concrete one, resulting in a certain directionality or asymmetry. To a single conceptual metaphor often corresponds a variety of linguistic manifestations, which display variable degrees of conventionalization:

Conceptual metaphor	Linguistic metaphors
ARGUMENT IS WAR	Your claims are <u>indefensible</u> . I've never <u>won</u> an argument with him. He <u>shot down</u> all of my arguments. ...

<sup>18</sup>That is, the process of filling in the details from the message communicated to the formation of a complete mental image (p.47).

Typical examples of conceptual metaphors are found in every-day language. Lakoff & Johnson signal out some recurring types:

- *Structural metaphors*: one domain is metaphorically structured in terms of another (LOVE IS A PHYSICAL FORCE and ARGUMENT IS WAR examples above),
- *Oriental metaphors*: a system of concepts is organized in terms of another reference system (*e.g.* HEALTH/SICKNESS IS UP/DOWN, MORE/LESS IS UP/DOWN),
- *Ontological metaphors*: we experience a nonphysical concept in terms of discrete objects and substances (*e.g.* INFLATION IS AN ENTITY, THE MIND IS A MACHINE), etc.

Many more examples can be found in the Master Metaphor List (G. Lakoff and Schwartz. [1991]), an overview of conceptual metaphors which was manually compiled by Lakoff and colleagues. Given its human-dependence, the list should be considered cautiously as representative of most common conceptual metaphors that trigger natural language manifestations. I will leave, however, such concerns apart and turn to a brief survey of more recent developments within the cognitive tradition.

### 2.3.2 Deliberate Metaphor Theory (DMT)

Several authors have stressed the importance of communication in the analysis of metaphors<sup>19</sup>. However, the notion of *deliberate metaphor* was most strongly defended by Gerard Steen (Steen [2008, 2011, 2014, 2015, 2017]). Throughout his papers, we find several definitions of deliberate metaphor. I here quote two:

”A metaphor is used deliberately when it is expressly meant to change the addressee’s perspective on the referent or topic that is the target of the metaphor, by making the addressee look at it from a different conceptual domain or space, which functions as a conceptual source.” (Steen [2008] p.222)

”Deliberate metaphor concerns the intentional use of metaphors *as* metaphors [*i.e.* as online cross-domain mappings] between sender and addressee.” (Steen [2017] p.1)

Overall, Steen highlights three basic characteristics of deliberate metaphors:

1. A deliberate metaphor has a specific communicative function, that is, changing the addressee’s perspective on a certain topic,
2. A deliberate metaphor is an invitation for the addressee to do something, namely to change their perspective on a topic, and
3. A deliberate metaphor is intentional. Minimally, it is intended to draw distinct attention to the SOURCE and TARGET domain.

---

<sup>19</sup>See for instance Cameron [2003] and Charteris-Black [2004].

Typical cases of deliberate metaphors are *direct* metaphors. These may consist in simple copula metaphors (*A is B*) or similes (*A is like B*), but can also be extended to a different degree. Here are some examples:

Love is blindness.<sup>20</sup> (Steen [2008] p.225)

You are like a hurricane, there' s calm in your eye, and I' m getting blown away.<sup>21</sup> (*Ibid.*)

Imagine your brain as a house filled with lights. Now imagine someone turning off the lights one by one. That' s what Alzheimer' s disease does.<sup>22</sup> (Steen [2014] p.182)

In general, one tenet of DMT is that the more extended a metaphor is, the more likely it is to be deliberate<sup>23</sup>. Building on findings by Glucksberg & Keysar and Gentner & Bowdle<sup>24</sup>, Steen makes an important departure from CMT: "theoretically defining metaphor as a cross-domain mapping [in thought] does not mean that metaphor must exhibit a cross-domain mapping in all of its processes of use." (Steen [2017] p.9). In particular, non-deliberate metaphors - which constitute the vast majority of metaphors in everyday language - might not be processed as cross-domain mappings but, for instance, through lexical disambiguation (*Ibid.*). Deliberate metaphors, on the contrary, always require the activation of conceptual mappings.

It goes without saying that DMT has stimulated a lively academic debate. In particular, Raymond Gibbs advanced two main challenges to the theory (Gibbs [2011, 2015]):

1. *Lack of a procedure to identify a deliberate metaphor.* Steen [2008] takes the blatant falsehood of statements in which a metaphor appears to be a signal for its deliberateness (p.222). The idea that the recognition of "semantic anomaly" is a necessary step towards metaphor identification has long thrived within the academic tradition<sup>25</sup>. However, psycholinguistic research has shown that "people do not first recognize anomalies and only then derive appropriate metaphorical meaning." (Gibbs [2011] p.36).

---

<sup>20</sup>Title of a famous U2 song.

<sup>21</sup>A line from Neil Young' s song "Like a hurricane".

<sup>22</sup>*Time Magazine*, 17 July 2000

<sup>23</sup>Direct metaphors are deliberate by definition. The more extended or highlighted they are or the more prominent their source-domain appearance, the greater the chance that they impinge on consciousness and elicit conscious metaphorical thought." (Steen [2014] p.185).

<sup>24</sup>Glucksberg & Keysar have challenged the view that metaphor always hinges on comparison and have advanced a proposal in which (copula-)metaphors are interpreted as *class-inclusions* (Glucksberg and Keysar [1990]). Gentner & Bowdle' s *Carreer of Metaphor Theory* has put the different possible processings of metaphor (by comparison or inclusion) into a diachronic perspective - for more details see *e.g.* (Bowdle and Gentner [2005]).

<sup>25</sup>For instance, in literary criticism - see the *Controversion Theory* of metaphor and its emphasis on the notion of *logically empty attribution* in (Beardsley [1958] pp.138-147) - and in pragmatics - see the *Standard Pragmatic Model* of metaphor interpretation, as presented by Gibbs [1994] (p.83).

Gibbs [1994] cites several studies - Ortony [1978], Glucksberg [1982], Inhoff [1984], etc. - indicating that (1) metaphorical meanings can be as readily available as literal meanings and (2) metaphorical meanings can be computed even in absence of semantic anomaly (pp.100,101).

Apart from anomaly, some authors have proposed that certain linguistic markers - *metaphorically, figuratively, actually, one might say, so to speak*, etc. (Goatly [1997]) - or tuning devices - *actually, almost, imagine, just, kind of, a little, really, sort of*, etc. (Cameron and Deignan [2003]) - would facilitate the identification of deliberate metaphors. The problem is that such signals turn out to be used in language quite broadly and are hence not (deliberate) metaphor-specific (Gibbs [2011] p.34). If there are no linguistic markers that are specific to deliberate metaphor, how can we objectively identify them?

2. *Producers' conscious judgments are not reliable as proxies for mostly unconscious processes.* It has generally been recognized in psychological research that people have limited access to the causes of their behaviour. More often than not, these causes are unconscious and are hence not open to conscious scrutiny. In particular, Gibbs [2011] discusses Nisbett & Wilson's "shoes experiment" (Nisbett and Wilson [1977]) and Libet's experiment on "readiness potential" (Libet [1985]). These experiments are supposed to show that subjects are often not aware of the causes of their behaviour. Consequently, asking producers about their intentions for the use of a certain metaphor is not a reliable method for assessing its deliberateness<sup>26</sup>. If we cannot ask to speakers about their intentions, how can we then be sure of what their intentions are?

Proponents of DMT have responded to both challenges. For challenge 1, the Deliberate Metaphor Identification Procedure (DMIP) was developed in order to provide an operational definition of deliberate metaphor (Reijnierse et al. [2018]). Crucially, DMIP can only identify *potentially* deliberate metaphors. These are the ones in which the SOURCE domain plays a role in the referential meaning of the utterance (pp.134,136). To assess whether a certain potentially deliberate metaphor was deliberate *tout court*, one might be required to take into account both linguistic and extra-linguistic signs. Within the linguistic signs, the authors still count the extendedness of the metaphor: the more extended a metaphor is, the more likely it is to be deliberate and the more likely it is to be remembered. This last conclusion was criticised by Thibodeau [2017], who showed that there seems to be no relevant interaction between metaphor extendedness and recall. I leave this issue aside and move on to responses to the second challenge.

Even though no definition of deliberate metaphor explicitly mentions consciousness, Gibbs' and related worries stress an important point. As a matter

---

<sup>26</sup>"Asking people to report whether they created or chose some metaphor deliberately, compared to their use of other metaphors, is an inaccurate method for assessing the thought processes that brought that metaphor into being." (Gibbs [2011] p.43).

of fact, in his 2008 paper Steen does sometimes mix the notions of intentional and conscious use<sup>27</sup>. However, in later works he rightly highlights the distinction that can - and should - be made between intentionality and consciousness. While "one may safely assume that all language use is intentional: *i.e.*, it is goal directed, related to some knowledge" (Steen [2014] p.184), not all language use is conscious - on the contrary, it is typically unconscious (Steen [2017] p.6). A metaphor is deliberate if it is "intentionally used *as* a metaphor in communication" (*Ibid.*). This, however, does not imply that it was consciously selected and then uttered.

Charteris-Black [2012] offers another possible way to bypass the second challenge. The author recognizes a tension in Steen's proposal of adopting a 3-dimensional model of metaphor theory (comprising language, thought and communication). In this project, he argues, two autonomous disciplines are conflated, each characterised by its own objectives and methodology:

- *Discourse analysis*. The discourse analyst *interprets* language uses through considerations of authorship, audience, context of utterance, communicative purposes, etc.
- *Psycholinguistics*. The psycholinguist *explains* why people speak as they do and how their utterances are understood by receivers.

Theories of metaphor developed within one discipline are not, in general, applicable to the other. Thus, considerations on deliberateness, for instance, are relevant for discourse analysis but are not so for cognitive science. In particular, when a discourse analyst is identifying a metaphor as deliberate, they are not making claims on whether the metaphor was produced or understood as such. In other words, the classification of a metaphor as deliberate is a matter of *judging* human (linguistic) behaviour, not of explaining it. Charteris-Black develops his own proposal from a discourse analysis perspective. In particular, he suggests to adopt the notion of *purposeful* - as opposed to deliberate - metaphor. Purposefulness "is oriented to the intended outcome of a metaphor and makes no assumptions about whether it is conscious or unconscious." (p.5).

The relation between the purpose of a metaphor and the intentions of its author needs to be clarified. In the next chapter, I provide a more detailed exposition of the notions of intentionality and intention. In particular, I argue that we can meaningfully think of intentions in a way that does not rely on speakers' mental states.

---

<sup>27</sup>"Not all intentional metaphorical language use is metaphorically deliberate in the sense of consciously being selected to achieve a particular communicative, and especially rhetorical, effect." (p.224); "These must all involve the conscious, deliberately metaphorical use of the source domain for rhetorical purposes." (p.225).

## Chapter 3

# Intention

Intentionality plays a role in the understanding of metaphors as meaningful. However, what precisely and how strong this role is has not been studied in depth. In this chapter, I first present some empirical evidence suggesting the importance of authorial intentions in metaphor processing. After hinting at the problem of intentionality in phenomenology, I move to the analytic tradition and introduce the notion of intention popularized by pragmatists (Grice, Searle, etc.). I end the chapter discussing intention attribution and the role that it has in the interpretation of metaphors - as well as, possibly, in their comprehension.

In (Gibbs et al. [1991]), the authors investigate whether the presupposition of an implied author (intentional agent) affects metaphor understanding. One of the declared aims of the paper is to respond to the so-called *intentional fallacy*<sup>1</sup> denounced by formalist schools of literary criticism<sup>2</sup>. In agreement with Gricean pragmatics and Speech Act Theory, Gibbs et al. claim that "the recovery of speakers'/writers' intentions is critical to understanding the meaning of utterances." (p.14). Here below I summarize the setup and results of the three experiments that were conducted.

- In their first experiment, Gibbs et al. asked 23 subjects to rate on a scale from 1 to 7 the meaningfulness of metaphorical, literal and anomalous comparisons<sup>3</sup>. Each comparison was presented to participants in only one of two possible contexts: either it had been written by a famous 20th century poet or by a computer program - actually, no sentence had been written by a computer program but the experiment hinged on the fact that subjects believed so. Results show that metaphoric as well as

---

<sup>1</sup>That is, the claim that the interpretation of (literary) texts does not require any inference on what their authors' intentions might have been.

<sup>2</sup>Ref. to works by Brooks, Wimsatt, Beardsley, etc.

<sup>3</sup>Here some examples: "A cigarette is like a time bomb" (metaphoric comparison); "A visa is like a passport" (literal comparison); "A tyrant is like a river" (anomalous comparison). Note that, in this paper, the authors seem to be close to the Figurative Simile Theory of metaphor interpretation. For this reason, their findings should be considered with certain caution from a CMT perspective.

literal comparisons were rated as more meaningful in the poet condition than in the computer condition. The findings support the hypothesis that "the implied presence of an intentional agent (poet) facilitate[s] subjects' interpretations." (p.18).

- The second experiment is a reaction time experiment in which participants were asked to make a forced choice (meaningful *vs.* meaningless) for the same stimuli of the first experiment. The output of the experiment confirmed that the implied presence of an author facilitates understanding also along a temporal dimension (p.21).
- The third experiment focuses on the products of understanding in the two conditions, that is, on available interpretations. 16 subjects were asked to list as many possible interpretations as they could think of for each comparison (same stimuli as per previous experiments). The number of produced interpretations was recorded for each stimulus. Results show a significant effect of the context on the availability of different interpretations: subjects came up with more interpretations in the poet condition.

Overall, Gibbs et al. invite us to conclude that implied authorial intentions play a decisive role in metaphor understanding. In this chapter, my aim is to better demarcate what one might mean by "authorial intentions". Before discussing intentions, however, I devote a small section to intentionality.

## 3.1 Intentionality

### 3.1.1 The phenomenological tradition

According to the *Stanford Encyclopedia of Philosophy*, "intentionality is the power of minds and mental states to be about, to represent, or to stand for, things, properties and states of affairs"<sup>4</sup>. Actually, intentionality is not restricted to mental states. Given the etymology of the Latin word *intendere*, intentionality can be thought of as the property of *aiming in* a particular direction or *being about* something. In this sense, natural languages and symbolic systems can also be said to have intentionality. The notion of intentionality comes with a series of questions that are actually of ancient origin<sup>5</sup>. However, it is with the phenomenological tradition of Brentano, Husserl, etc. that the "problem of intentionality" became a central object of philosophical enquiry. The problem usually takes either of the two following forms:

- *Ontological*. In this sense, the problem is that of determining the exact nature of intentional objects and whether these differ in substantial ways from ordinary objects.

---

<sup>4</sup>The main sources for this section, apart from the SEP, are (Jaszczolt [1999], Ch.3) and (Aucouturier [2012]).

<sup>5</sup>Even though Aristotle does not explicitly discuss, nor has a theory of intentionality, his conception of the soul has some important bearings on this issue. Ref. in particular to the treatise *On the soul*, available here: <http://classics.mit.edu/Aristotle/soul.html>

- *Phenomenological*. The problem is to understand the nature of intentional states, that is, what is it for an intentional agent to be intentionally related to an intentional object.

Brentano thought that objects of intentional states such as belief, desire, love, fear, etc. have a special ontological status, which he called *intentional inexistence*. *Prima facie*, this means, for instance, that we can think of Pegasus without the need for it to actually exist, we can be scared of vampires even though there is no such thing, we can see an oasis in the desert while our senses are being tricked. Thus, intentional states don't always have a grip on reality. But Brentano meant more than this. He argued that intentional objects are, so to say, "in the mind"<sup>6</sup>. This claim brought him to the famous thesis that intentionality is "the mark of the mental": intentionality "is characteristic exclusively of mental phenomena. No physical phenomenon manifests anything like it." (Brentano [1995] p.68)

Husserl, the founder of phenomenology and former Brentano's disciple, moved the focus from the ontology of intentional objects to intentionality itself. In particular, he saw it as a kind of mediation whereby "the subjective psychological act, through which [we] grasp reality, can alter [our] relation to the objects in the world" (Aucouturier [2012] p.21; my translation). Intentionality is often thought of as a relation linking reality on the one side and the mind/consciousness - *i.e.* the intentional agent - on the other. For Husserl and successive philosophers, such as Searle, the intentional relation is what makes reality meaningful to us. According to Husserl, there is an objective part in our subjective conscious experiences, which he calls the *noema*. Crucially, the noematic component of experience is an intentional object, that is, it is always a content<sup>7</sup>. Thus, following a well-known slogan, one could say that consciousness is always consciousness *of* something<sup>8</sup>, it is always intentional.

To put it simply, intentionality would be the mark of the mental according to Brentano, while it would be the essence of conscious experience for Husserl. Both theses can be questioned. On the one hand, not all conscious mental states are intentional. For instance, Searle [1983] cites cases of mental states, such as anxiety, which are not clearly directed to any intentional object in particular<sup>9</sup>.

<sup>6</sup>"Every intentional act 'includes something as an object within itself'. 'Inexistence' expresses the idea that the object on which the mind is directed exists in the mental act itself." (Crane [1998] p.233).

<sup>7</sup>"Meaning is contained in the *noema*, the objective content of consciousness. The *noema* is an intentional object, the content of an act, it functions as the meaning or sense. In virtue of this content an act achieves an intentional relation to an object. In other words, an act is directed toward a [real] object through a mediator called *noema*." (Jaszczolt [1999] p.89).

<sup>8</sup>Ref. to Husserl [1913] Chapter 2; for instance §36: "Universally it belongs to the essence of every actional cogito to be consciousness *of* something."

<sup>9</sup>"Some, not all, mental states and events have Intentionality. Beliefs, fears, hopes and desires are Intentional; but there are forms of nervousness, elation and undirected anxiety that are not Intentional [...] My beliefs and desires must always be about something. But my nervousness and undirected anxiety need not in that way be about anything." (p.1).

To these we could also add moods, emotions and the like, which do not seem to be necessarily intentional. On the other hand, not all intentional mental states are conscious; see for example unconscious beliefs or desires (Jaszczolt [1999] p.91). Finally, not only (conscious) mental states are intentional. Language can also be said to have intentionality in the broad sense of being about or directed to something<sup>10</sup>.

## 3.2 Intentions in language use

In philosophy of language, "the problem of intentionality is posed in terms of the speaker's intention or 'will to say': the aim is to determine the role of the speaker's intention to signify in determining the meaning [...] of his utterance." (Aucouturier [2012] p.34). But how do we get from the notion of intentionality in phenomenology to the notion of intention in philosophy of language? The bridge is made through the notion of *action*. As Anscombe has shown - notoriously in *Intention* (Anscombe [1957]) - there is a strong parallel between the notion of action and that of intention. Despite the differentiation operated in medieval and modern times, the cognitive notion of intention in philosophy of mind - that is, intention as mental state - and the practical notion of intention in philosophy of action - intention as envisaged goal - are linked both etymologically and conceptually, as shown, among others, in (Solère [2007]). While in cases such that of perception the mind is directed to some intentional object, in action it is our will or desire that is directed to the accomplishment of some intentional goal<sup>11</sup>. Broadly speaking, we could think of communication as the action of signifying. Then, intentionality of language can be seen as the characteristic proper to our linguistic habits of being understood in terms of intentions. Intentionality is not "the mark of the mental" but the way in which we understand several kinds of human behaviour - and in particular linguistic behaviour - as meaningful<sup>12</sup>.

### 3.2.1 Communicative intention (CI) in pragmatics

The notion of speaker's communicative intention is central especially in Gricean pragmatics, but also Speech Act Theory and Relevance Theory. In his seminal paper *Meaning* (Grice [1957]), Grice first distinguishes between two senses of the word "meaning": there is, he argues, *natural* and *non-natural* meaning<sup>13</sup>. It is the non-natural meaning that plays a decisive role in our linguistic exchanges. In

---

<sup>10</sup> Cf. the referential function of language according to Jakobson.

<sup>11</sup> "Generally speaking, then, *intention* refers to the idea of "directing towards" (*intendere*), with tension and effort. And this can be understood [...] as either desire and action, or intellect." (p.72).

<sup>12</sup> "Intentionality is then a semantic feature that can be grasped from the outside, in the grammar of our language (*i.e.* in usages that explicitly or implicitly call for the notion of intention), a feature that characterises certain human activities (such as action, perception, etc.)." (Aucouturier [2012] p.76).

<sup>13</sup> Contrast, for instance, the sentences "Those spots mean (meant) measles." with "Those three rings on the bell (of the bus) mean that the 'bus is full.'" (p.377).

Grice's characterization of non-natural meaning (p.385), one can identify three sub-intentions. When they want to mean non-naturally something, the speaker intends that:

1. Their utterance produces some effect in the hearer<sup>14</sup>,
2. The hearer recognizes intention 1., and
3. Intention 1. is fulfilled - at least partly - by its recognition.

*Communicative intention* (CI) can be defined through Grice's notion of non-natural meaning. To say that an utterance is made with a communicative intention is to say that some speaker means non-naturally something by it. Recanati [1986] suggests to call *Gricean communication* any communicative behaviour that can be explained resorting to communicative intention, that is, following the scheme above. In this sense, linguistic communication becomes a special case of Gricean communication, which is thus not restricted to conventional linguistic means (p.213,214). Gibbs [1999] draws a distinction between *communicative* and *expressive* intentions (p.53). While communicative intention is satisfied by being recognized - or, minimally, its satisfaction depends on its recognition - expressive intentions are not<sup>15</sup>. For instance, a craftsman may produce a chair with the intention for its users to judge it beautiful. However, the recognition of such intention does not entail - not even partly - its fulfilment. The craftsman's intention is thus expressive and not communicative.

### 3.2.2 Putting CI into a wider picture

Austin famously showed that when we utter any sentence, we are actually performing three actions at once (Austin [1962]). First, there is the bare fact of engaging in meaningful communication (*locutionary* act). Second, in uttering a sentence the producer is doing something quite specific with their words - describing a state of affairs, but also giving a command, promising, reassuring and so on. This is the *illocutionary* act. Finally, there are the effects that the utterance has on the receiver (*perlocutionary* act). With this terminology from Speech Act Theory, we can now say that in Grice's definition of communicative intention the first sub-intention is a *perlocutionary intention*: it is the intention to directly obtain a perlocutionary effect<sup>16</sup>.

The literature distinguishes several other types of intentions - see *e.g.* (Haugh and Jaszczolt [2012], Ch.5). Searle introduced a seminal distinction between

<sup>14</sup>For example, the formation of a belief if the utterance is an assertion, an action or intention to act if it is a command, etc.

<sup>15</sup>Note, however, that this "Neo-Gricean" claim cannot be ascribed to Grice himself (Recanati [1986] pp.214,215). As we have seen, in Grice's original definition just the recognition of sub-intention 1. needs to be a condition for its fulfilment - and not for the fulfilment of the communicative intention.

<sup>16</sup>"A perlocutionary intention is thus the intention that one's communicative act produce a given perlocutionary effect." (Recanati [1986] p.216). Following Austin [1962], perlocutionary effects are defined as "the empirical effects or consequences of a communicative act" (*Ibid.*).

*Prior Intention* and *Intention in Action* (Searle [1983]). While prior intentions can be assimilated to the goals that the agents aim to accomplish before acting, intentions in action direct the agents' doings while they are taking place (Ciaramidaro et al. [2007] p.3106). Subsequent research suggests some variation even within prior intentions (Jacobs and Kinder [2017]). From a temporal dimension, there is a difference between *proximal* intentions on the one hand and *prospective* intentions on the other. As the names suggest, prospective intentions represent goals to be fulfilled in the future, while the goals of proximal intentions are closer to the time of the utterance. We can further distinguish intentions based on the kind of social interaction they require. *Private* intentions "involve the representation of a private goal", which is defined as "one involving only the actor satisfying that particular goal" (Ciaramidaro et al. [2007] p.3106). *Social* intentions, instead, involve the representation of a social goal<sup>17</sup>. There is some work at the cross-roads of cognitive science and neuroscience aimed at providing empirical support for the distinctions just sketched. Using a neuroimaging paradigm, Ciaramidaro et al. [2007] investigated the neural system underlying the *Theory of Mind*, i.e. "the human capacity to explain and predict other people's intentions" (p.3105). They found out that different areas are activated while processing different kinds of intentions. In their experiment, they contrasted private intentions, prospective social intentions and proximal social intentions - communicative intention being, according to the authors, an example of the latter category. Overall, results show a significant increase in the activation of different areas for more complex intentions<sup>18</sup>.

### 3.2.3 Intentions in the head

Within the standard pragmatic framework, intentions are conceived as pre-discursive individual mental states. One of the limitations of this approach is that it cannot account for cases where the utterer might not have all the possible meanings, neither all the possible effects of their utterance, known in advance. Interpretations and goals can be the result of discursive interaction<sup>19</sup>. For this reason, within Relevance Theory (Sperber and Wilson [1986]) a distinction is made between *implicatures* à la Grice on the one hand - already envisaged by the utterer - and *implications* on the other. Implications account for all those expansions of the intended meaning that the utterer "did not specifically have in mind when they originally framed the utterances" (Gibbs [1999] p.59). While

<sup>17</sup>"We define a social goal as the goal of an actor (A) that implies at least one other person (B), who is a necessary element for satisfying that goal." (*Ibid.*).

<sup>18</sup>In more details, the representation of private intentions required activation of only the precuneus and the right TPJ (temporo-parietal junctions), prospective social intentions recruited the right TPJ, the precuneus and the aPCC (anterior Paracingulate Cortex) and finally communicative intentions required the right TPJ, the left TPJ the precuneus and the aPCC (p.3109).

<sup>19</sup>"Intentional meanings are not fully defined complete entities before they get from the speaker's mind to her mouth. Rather, once they material[ize] into utterances they enter a process of negotiation of meaning where the interlocutor's response plays a crucial role." (Gibbs [1999] p.62; citing Dascal, [1997]).

implicatures are part of the utterer's communicative intention, who then expects the receiver to work them out, implications are worked out on the receiver's initiative.

Apart from the problem of under-determination of the utterer's intentions, pragmatics need also to face the problem of non-accessibility or *opacity* of intentions (Gibbs' second challenge from Chapter 2). The problem is to determine which intentions the producer has before their utterance is uttered. In cases of willing and conscious production, intentions are easily accessible - as long as there are no reasons to suspect the utterer's honesty. However, intentional states are not necessarily open to conscious scrutiny and sometimes people's reports about their intention for acting and speaking as they do might be wrong (p.89). As a consequence, it is often not sufficient to ask speakers about their intentions.

All these considerations motivate a change in our conception of intentions. We should leave behind a notion of intention as mental state, whereof the speakers might be aware or not. Adopting the receiver's point of view, instead, intentions can be seen as properties attributed to linguistic acts. They are hermeneutic tools for making sense of our behaviour and interpreting that of others. In the next section, I work out this idea in more detail.

## 3.3 Perceived intentions

### 3.3.1 De-psychologizing intentions

Recall Wittgenstein's famous "beetle in a box" argument from the *Philosophical Investigations*. With relation to sense words, Wittgenstein rejects the so-called picture-theory of meaning the he had previously contributed to elaborate in his *Tractatus*. Consider a word like "pain". Wittgenstein asks what its referent would be. Perhaps some mental state? If that is so, how can we identify "pains" from different people, since we don't have access to other people's mental states - nor, possibly, our own? Wittgenstein's conclusion is that the object of reference is not relevant in determining the meaning of sense words, as long as there are shared rules for their use<sup>20</sup>.

Inspired by this idea, I am inclined to think that we don't need to look into people's heads for their choices of words to be meaningful. The attribution of intentions can just be part of the grammar (*viz.* rules of use) of figurative language in general, and of metaphors in particular. A similar "grammatical approach" was defended by Anscombe, a former student of Wittgenstein's, in relation to action (Anscombe [1957]) and to sensation (Anscombe [1965]). Anscombe links intentionality to our general practice of asking and providing *reasons for acting*. An action is intentional whenever asking the question "why?" is appropriate<sup>21</sup>.

---

<sup>20</sup>As he puts it: "if we construe the grammar of the expression of sensation on the model of "object and designation" the objects drops out of consideration as irrelevant." (PI §293)

<sup>21</sup>"[Intentional actions are those] to which a certain sense of the question 'Why?' is given

In this sense, one cannot meaningfully ask why a dishwasher, say, stopped to work. The malfunctioning of a dishwasher is not intentional, though there might be material causes for it. On the contrary, one can ask their son why they did not wash the dishes and one can and in fact expects them to provide convincing reasons for this. The action of not doing the dishes is intentional.

Reasons for acting can be of different sorts, but they typically take the form of envisaged purposes: "Why are you doing A?" - "Because I want to do B later". A clear connection can be made with the notion of perlocutionary intention that I have introduced above. Indeed, to obtain a certain effect on the receiver might be a reason for acting - and speaking - so and so. Interestingly, one can fail to recognize their own actions as intentional under certain true descriptions of them<sup>22</sup>. Intentionality is thus better understood in terms of attribution; be it self-attribution or attribution by others. Crucially, the intention behind an action depends on the observer's point of view and their available descriptions of the action being performed.

### 3.3.2 Intention attribution

Following this Wittgensteinian approach, I consider intentionality not as an ontological feature of mental states, but as a matter of *attribution*<sup>23</sup>. As Gibbs highlights, the attribution of intentions is a necessary element for understanding human (linguistic) behaviour as meaningful (Gibbs [1999] p.71). Actually, this is not restricted to human behaviour but is also a condition for the experience of meaning in non-human behaviour and *artifacts* (pp.75,76). One could define the intention of an artifact as the goal that the artifact is best suited to accomplish. Importantly, the evaluation of best-suited goals oftentimes depends on the observer, without being entirely subjective either. Let me make an example. A hammer is particularly suited to be used as tool in construction, thus it is often used for that. Best-suited goals are correlated with a bias in use<sup>24</sup>. This does not mean that a hammer cannot be used for other purposes - as an ornament, for instance. However, using a vase with flowers as a welding tool is clearly not a good idea. Despite the possibility of different uses, a hammer is better suited for construction purposes - as, arguably, a vase with flowers is better suited for ornamental purposes.

Language as a whole could be seen as a *communicative* artifact (p.53). Hence, a condition for the understanding of language - and in particular of metaphorical

---

application. [...] the answer, if positive, gives a reason for acting." (Anscombe [1957] p.9).

<sup>22</sup>For instance, imagine that you took a pen from the table with the intention of writing some notes. Your action of taking the pen is intentional. It turns out that the pen you are using is Smith's pen, albeit you didn't know it. Someone sees you and asks why you are using his pen. Though this is a true description of your action, you wouldn't recognize it as your action. After all, your intention was not to use Smith's pen! (Anscombe [1965] p.56).

<sup>23</sup>"Intentionality is a social judgment, not an objective fact about the world." (Gibbs [1999] p.22; citing Malle& Knobe [1997]).

<sup>24</sup>Note that this is a hypothesis for empirical verification. For my purposes, it entails that the categories in the taxonomy show a bias in use since in those cases a metaphor is better-suited to accomplish a specific goal: the one the intention wants to fulfil.

language - would be the attribution of intentions. Drawing from Anscombe, we could say that intentions constitute *reasons for speaking* as we do.

### 3.3.3 Moments of understanding

At this point, an interesting question is whether we actually perceive intentions in our everyday linguistic activity, or the attribution of intentions is just an "artificial" hermeneutic tool. Gibbs [1994] distinguishes between process and products of linguistic understanding and between four temporal moments of linguistic understanding (pp. 115,116):

- Comprehension,
- Recognition,
- Interpretation, and
- Appreciation.

At which level does intention attribution appear? *A priori*, the safe answer would be at the level of interpretation<sup>25</sup>. However, perceived intentions might also affect already comprehension. Indeed, Gibbs seems to think that intentionality attribution is a necessary component of comprehension: intention is cited in his definition of comprehension<sup>26</sup> and some empirical evidence is gathered from the already discussed paper (Gibbs et al. [1991]). It should be noted, however, that the attribution of intentionality is restricted by Gibbs to the utterer as an intentional agent and not to the artefacts that they produce (Gibbs [1999] p.17). On the contrary, I suggest that intention attribution might be a component of the "grammar" of figurative language, as I have detailed before.

---

<sup>25</sup>That is, "the analysis of the early products of comprehension" (Gibbs [1999] p.101).

<sup>26</sup>"[Comprehension] allows listeners/readers to figure out what an utterance means or a speaker/author intends" (Gibbs [1994] p.116). See also a more explicit formulation in (Gibbs [1999] p.99).

## Chapter 4

# Metaphor and intention

In this chapter, I review previous studies linking metaphor and intentions and suggest why these need to be improved.

### 4.1 Why do we use metaphors?

There is not a common notion of intention shared among all metaphor scholars. For my purposes, it may be assumed that intentions are generally formalized as discourse goals. Following the pragmatic tradition - and in contrast with my grammatical approach - most researchers conceive of intentions as prior intentions, that is, as representations in the utterer's mind of their own goals.

A paper by Roberts and Kreuz [1994] explicitly attempts to build a taxonomy of intentions (*viz.* discourse goals) for most common forms of figurative language (hyperbole, idiom, indirect request, irony, understatement, metaphor, rhetorical question, and simile). The 19 categories comprising the taxonomy were built as a result of the following experiment. After providing the participants with the definition and a set of positive examples for each figure of speech, the researchers asked them to write down which reasons they think people may have for using that figure. In the experiment, the participants (158 in total) were evenly assigned to individual figures of speech. This caused a limitation in the number of data collected in each condition. On average, around 64 (not necessarily distinct) discourse goals were provided for each figure<sup>1</sup> - *e.g.* for metaphor. Another drawback of this study is that Roberts & Kreuz define metaphor as an implicit comparison, partially in line with pragmatic approaches stemming from Speech Act Theory (Searle [1979]). This design choice, along with the limited selection of positive examples, might have caused a bias in the participants' judgments, as acknowledged also by the authors (p.163). Moreover, it makes it difficult to easily incorporate their findings within the framework of CMT,

---

<sup>1</sup>The number is obtained multiplying the mean number of unique goals generated per subject (3.21) by the mean number of participants assigned to each condition (20) (p.160).

which adopts, as we have seen, a notion of metaphor interpretation based on conceptual mappings.

For all these reasons, an improved, metaphor-specific taxonomy is still needed. As a matter of fact, there has been intensive works in the psycholinguistic and philosophical traditions focusing on particular intentions/communicative goals individually. These studies have been used, whenever possible, as empirical justification for some of the categories in my taxonomy. In what follows, I briefly summarize the most relevant ones.

## 4.2 Previous work

- *Lexical gaps.* In the literature, there is first of all a distinction between those metaphors that are related to specific intentions and those that are just part of ordinary, everyday communication. The latter correspond to the "semantic/lexical gap" cases discussed in (Steen [2008])<sup>2</sup> and to conventionalized metaphors in (Cameron [2003]). For this class, the adoption of a metaphoric expression cannot be dispensed with; in other words, it is "just the way to say it" (p.100). Crucially, conventionalized metaphors might be related to the way our conceptual system is structured. According to CMT, some concepts such as LOVE are *metaphorical* in nature (Lakoff and Johnson [1980] p.85). This means that the adoption of one metaphor over a literal alternative might not be an available option at all. The metaphoric mappings might be the only way of addressing a certain conceptual domain. For example, spatial metaphors are customarily used to conceptualize the more abstract domain of TIME. These metaphors in thought result in various unavoidable metaphors in language, *e.g.* "being on time".
- *Persuasion.* There is a vast literature investigating the persuasive nature of metaphors used notably in political discourse: Lakoff and Johnson [1980] (Afterwards 2003), Musolff [2004], Boeynaems et al. [2017], Brugman et al. [2017], etc. Studies typically adopt a discourse analysis paradigm, a psycholinguistic one or both. Here below I summarize the output of two meta-studies collecting evidence on the persuasive effect of metaphors:
  - (Sopory and Dillard [2002]) is a meta-analysis of 24 empirical studies<sup>3</sup> investigating the relation between metaphor and persuasion. In particular, the main hypothesis to be tested is whether metaphorical messages are more persuasive than their literal equivalents. The authors formulate 6 possible explanations of the relation between metaphor and persuasion and evaluate the extent to which each

---

<sup>2</sup>In that paper, Steen connects highly conventional metaphors - and notably so-called dead metaphors - to one of the basic functions of metaphor, namely the *naming function* (p.231).

<sup>3</sup>Actually a total of 41 studies were considered, but 17 were excluded.

of these is empirically supported. Overall, they conclude that the main hypothesis is supported with respect to attitude change by the subject towards the Topic (p.404) and that the *Superior Organization*<sup>4</sup> view is the most likely explanation of the persuasive effect of metaphors (p.410).

- (van Stee [2018]) is conceptually an updated version of Sopory and Dillard’s work, taking into account 50 studies recently conducted (2001-2015). In addition to verbal metaphors, also visual metaphors are considered and data on behavioural intention, as well as attitude change, are collected. Several theoretical explanations for the persuasive effect of metaphors - in this case, seven - are evaluated against the available empirical evidence. Van Steen concludes that metaphorical messages exhibit statistically significant greater effect on persuasion than their literal equivalents (van Stee [2018] p.553). In particular, metaphors with a Target domain already familiar to the audience tend to be more persuasive (p.560) and visual metaphors are more persuasive than written ones (p.561). These findings support explanations reliant on cognitive resources, in particular the Superior Organization view (as per Sopory and Dillard [2002]) and the *Resource Matching*<sup>5</sup> view.

- *Metaphors in argumentation.* Within argumentation theory, traditional accounts view metaphor as ornamental/presentational (Garsen) or as an argumentation schema exclusively based on analogy (Perelman & Olbrechts-Tyteca). This, however, does not account for all uses. Scholars have shown that metaphor is not just ornamental but can actively contribute to the effectiveness of different types of arguments. There is some qualitative (van Poppel [2021], Wagemans [2016]) as well as quantitative evidence (Beigman Klebanov and Flor [2013]) supporting this claim. In particular, Klebanov and Fior’s experiment with argumentative essays in English showed moderate-to-strong correlation between metaphor density and essay scores, which keep track of the argumentative quality of the discourse.
- *Affect.* It is well recognized in the literature that affect is a crucial component of many metaphors. In particular, metaphors can be used to express strong, as well as very specific emotions. In the following, I gather some evidence for both claims.

- Katz Fainsilber and Ortony [1987] highlight that frequency of metaphors and metaphor ”originality” correlate with the intensity of the expressed emotion<sup>6</sup>. They conclude that metaphors are used with pref-

---

<sup>4</sup>”The superior organization view [...] proposes that a metaphor helps to structure and organize the arguments of a message better than literal language.” (p.387).

<sup>5</sup>”The resource matching explanation [...] proposes that metaphor will be more persuasive than literal language when there is a match between the cognitive resources available to a person and the cognitive resources required to process the metaphorical message.” (p.547).

<sup>6</sup>”More intense (and presumably, therefore, more vivid) emotional states not only generated more metaphors, but also resulted in richer and more vivid metaphors.” (p.248).

erence when expressing strong emotional states. More recent empirical studies are cited by Piccirilli and Schulte Im Walde [2022], who claim that overall "metaphorical language [has] been found to carry a stronger emotional load than literal language" (p.299). There is also some data-driven evidence for the vividness of metaphors used to express emotions. For instance, Mohammad et al. [2016] tested whether (1) metaphoric uses convey more emotion than their literal paraphrases and (2) the metaphorical sense of a word - in their study, verbs - conveys more emotion than its basic sense<sup>7</sup>. The results of their experiments support both predictions and suggest, in addition, that the affective component is not just transferred from the SOURCE to the TARGET but could actually arise from the interaction of the two conceptual domains (p.24).

- Fussell and Moss [1998] investigate in more detail the relationship between emotions and metaphor. They first highlight a general limitation of previous studies, namely their reliance on producers' introspection. Fussell and Moss' concern is that if we base solely on autobiographical reports, there is no objective way to differentiate the emotion that was actually felt by the subjects and the one that is described through metaphoric language<sup>8</sup>. To address this challenge, they work on responses to movie clips, which are taken to be objective stimuli correlated to specific emotions - in particular, depression/sadness (p.12). In their experiments, participants were asked to describe the content of such video clips. From their findings, the authors conclude that metaphors help to differentiate specific, subjective nuances of sadness. Thus, metaphoric language seems to play a role not only in the expression and differentiation of intense emotional states, but also in the expression of precise, highly subjective ones.

- *Prediction*. In her influential book *Models and Analogies in Science* (Hesse [1966]), Hesse argues that a crucial function of metaphorical models is that of facilitating *prediction* through analogical transfer. After distinguishing among negative, positive and neutral analogies (p.8), she claims that new knowledge is created as neutral analogies are proved positive or negative through experiments. For instance, if we conceptualize the dynamics of gases through the billiard balls metaphor, we are thinking of gas molecules *as* billiard balls. The application of the metaphor has important consequences, that can be successively tested and lead to a general improvement in our understanding of gases. Thus, far from being the nightmare of scientific discourse, metaphorical mechanisms are central to the development

---

<sup>7</sup>For the distinction between contextual and basic sense, ref. to Chapter 2 in this thesis.

<sup>8</sup>As they put it: "several key questions with respect to a social-psycholinguistic theory of figurative language use cannot be adequately addressed without using a research paradigm in which the emotions being expressed can be measured independent of the language produced to describe them." (p.10).

of science.

Beger and Jäkel [2015] refer to the predictive potential of metaphors, as originally described in Hesse's work, as their *heuristic* function<sup>9</sup>.

- *Didactic metaphors*. Many researchers have studied the didactic potential of metaphors. The book *Metaphor in Educational Discourse* (Cameron [2003]), for instance, is a thorough investigation of metaphor use in actual classroom activity. Cameron conducted two studies: the first examined the use of metaphor in discourse from a classroom<sup>10</sup>, while the second explored children's understanding of metaphors in text. One of her general conclusions is that "different types of teaching action make differential use of metaphor." (p.120). In particular, the primary function of metaphors in Explication teaching sequences<sup>11</sup>, is *ideational* - cf. with *affective* use: "teachers used deliberate metaphor mainly to explain concepts" (p.101). Beger and Jäkel [2015] investigate what they dubbed the *didactic* function of metaphors. In addition to the heuristic function recognized by Hesse (see above), they show how metaphoric expressions are used to facilitate understanding during lectures<sup>12</sup>. Their analyses provide evidence that there is systematic exploitation of Hesse's "explanatory function" (Hesse [1966] pp.157-177) for didactic purposes (Beger and Jäkel [2015] p.107). Further empirical evidence for the didactic intention behind metaphors comes from the study by Roberts and Kreuz [1994]. In their experiment, the main function attributed by language users to metaphor is in fact "to clarify" (p.161).
- *Humour*. There is partly empirical evidence for the entertaining potential of metaphors in (Roberts and Kreuz [1994]) since the second function attributed to metaphors is "to add interest". However, in the study no subject selected the explicit function "to be humorous" for metaphor - but the results could be biased by the experimental setup. The *Resolvable Incongruity* view with regards to humor and humorous metaphors (Oring [2003]; Dynel [2009]; Attardo [2015]) provides a list of mechanisms that could trigger the humoristic effect of metaphor or at least that would make the hearer perceive the metaphor as a humoristic one<sup>13</sup>. These studies generally consist in qualitative discourse analysis and are not supported

---

<sup>9</sup>Note that in Hesse, however, the term "heuristic" is used with a quite negative connotation meaning "subjective/psychological/mnemonic aid" (Hesse [1966] p.175). This function of models is acknowledged both by the Campbellian and the Duhemist (pp.25,36). Their bone of contention is rather the alleged need of models for scientific theories and the predictive nature of such models.

<sup>10</sup>A primary school in the UK with a total of 15 children aged between 9 and 11.

<sup>11</sup>Note that, in her taxonomy, the Explanation sequence type comprises both Explication and Exemplification (p.80). Cameron focuses more on Explication because a higher density of metaphors were found there (p.130).

<sup>12</sup>In particular, the authors analyse 27 lectures filmed at a US-American college in the following subjects: biology, chemistry, psychology, and philosophy.

<sup>13</sup>Given my approach to intention as a matter of attribution, I am particularly interested in the latter case - see also (Attardo [2015] p.99).

empirically - at least to my knowledge.

In the educational setting studied by Cameron, humoristic intentions are exemplified primarily in peer talk sequences: "students used deliberate metaphors in more playful discourse, mostly between themselves" (Cameron [2003], p.101). This is linked to the sense of belonging to a group (p.111): only members of the group can get certain jokes and getting the joke strengthens the closeness between peers.

- *Intimacy*. The social dimension of metaphor has been studied to some extent in the literature. The pivotal text is Cohen's paper *Metaphor and the Cultivation of Intimacy* (Cohen [1978]). The author claims that the point of a metaphor is - among others - to achieve *intimacy*: a metaphor has the potential for bringing closer its maker and appreciator(s). In realizing that an expression is used metaphorically, and in figuring out what the metaphor means, the receiver typically relies on assumptions about the speaker, who, in turn, is aware of this. The sense of community originating from this communicative transaction results both from the awareness that the transaction was successful - that is, the metaphor was intended by the maker and correctly understood by the receiver - but also from the awareness that this might not work out with any receiver<sup>14</sup>. Thus, successful makers and receivers become "intimate pairs".

Gerrig and Gibbs [1988] link the creation of intimacy to the ability to produce and understand creative language in general, and metaphoric language in particular<sup>15</sup>. They also stress the fact, already anticipated by Cohen, that intimacy has its "dark side": it "can serve as an agent of exclusion." (p.8).

Finally, in a more recent work, Goatly identifies the *Cultivation of intimacy* as one communicative function of metaphors (Goatly [1997] p.160). The fact that shared Grounds are needed for a correct interpretation creates a sense of community among author and comprehenders<sup>16</sup>.

---

<sup>14</sup>"All literal use of language is accessible to all whose language it is. But a figurative use can be accessible to all but those who share information about one another's knowledge, beliefs, intentions, and attitudes." (p.9).

<sup>15</sup>Creative language is defined as "any utterance, phrase, or word whose meaning varies with the context in which it is produced in a way that could not be predicted from the lexicalized meanings of its component words." (p.2).

<sup>16</sup>"Because the understanding of metaphors depends on shared Grounds, metaphor can become a means of activating the assumptions shared between only two people, or a small group. [...] This creates a sense of community. It also excludes those who are unable to penetrate the speaker's mind and access relevant matching information in their own." (*Ibid.*)

## Chapter 5

# The taxonomy

This chapter is devoted to the presentation of a unified taxonomy of intentions behind metaphor use. After some preliminary remarks, I discuss each intention category in turn. I provide the definition of the category, some paradigmatic examples and relations to previous work.

### Overview of the taxonomic categories:

1. **Lexicalized metaphor**
2. **Persuasiveness**
3. **Argumentative metaphor**
4. **Vividness**
5. **Precision**
6. **Artistic metaphor**
7. **Imageability**
8. **Explanation**
9. **Heuristic reasoning**
10. **Humour**
11. **Social interaction**

## 5.1 Building the taxonomy

### 5.1.1 Defining alternatives

The general question that we want to address is: why was a particular metaphor preferred in a given context? The answer that I have advanced is roughly the following: because the metaphor is instrumental to some discourse goals, which are determined *via* intention attribution. No matter how these intentions are conceived, they always presuppose some notion of *alternative*. Intentions allow us to make sense of why one among several alternatives was chosen, consciously or not - the latter being the most common case. In order to answer the question of why a metaphor was used, one has to imagine that the metaphor could have been avoided with preservation of some important "meaning component" of the utterance. For instance, if we wanted to answer the question of why did someone say "I'm boiling!" instead of "I'm very warm!", it must be that the two sentences stand as alternatives in some important respect, but not in all respects. I propose to consider the propositional content<sup>1</sup> of the utterance as that characteristic which allows to identify, at least in most cases, proper alternatives. In general, what counts as utterance meaning in use has other components than the sentence meaning or cognitive content alone (Lycan [2000] p.181): there is the speaker's meaning, the illocutionary and perlocutionary act, the affect expressed, the propositional attitude, etc. It is within these components of meaning that we may hope to find discriminative clues for the adoption of one alternative over the others.

In relation to my own proposal, I motivate each category referring to prior intentions as they are perceived by the receiver, *i.e.* discourse goals that the metaphor is supposed to accomplish. In turn, discourse goals are restricted to those effects that are intended to be obtained on the receiver. Thus, my focus is first and foremost on the perlocutionary component of utterances.

### 5.1.2 Desiderata and approach to compiling the taxonomy

As I have highlighted at the end of the previous chapter, the literature relating metaphor and intention is rich but generally quite fragmented. With some exceptions<sup>2</sup>, scholars tend to focus only on isolated intentions. Hence, the task of systematising the existing work and incorporating it into a coherent theory of intention is worth pursuing. The novelty of my approach is twofold:

---

<sup>1</sup>That is, the proposition that is expressed by the sentence, the *thought* in Fregean terminology.

<sup>2</sup>For instance, Goatly [1997] (Chapter 5) lists 13 common functions of metaphors. Note, however, two major differences with the present proposal. First, the author refers to *functions* of metaphors, without explicitly specifying what is meant by function. It would seem to me that the notion goes in the direction of a "naturalized intention". More details, however, are needed. Second, Goatly relies on an improved version of Relevance Theory equipped with "purposes" for the interpretation of metaphors, and not on CMT. Thus, he is not primarily interested in providing cognitive evidence in support of the functions that he discusses.

1. I conceptualize intentions as perceived discourse goals. I thus "de-psychologize" intentions and adopt the receiver perspective on their analysis.
2. I systematize the diverse intentions customarily attributed to metaphors. A unified taxonomy is now available for further testing and improvement.

In order to compile my own taxonomy, I first familiarized with existing literature from psychological as well as philosophical and linguistic perspectives. After completing the literature review, I sketched a tentative proposal for the taxonomy. Then, I had an informal look at the VUAMC dataset. In this way, I had the chance to preliminarily test my taxonomy and already incorporate some initial adjustments. In particular, I checked that each category in the taxonomy was represented in the corpus and, conversely, that there was no instance in the corpus that would not fall into any category in my taxonomy. This led me to successive improvements of the taxonomy and the process eventually stabilized. The output taxonomy is hence the result of an iterative exchange with real linguistic data.

## 5.2 The taxonomic categories

I turn at last to the discussion of the taxonomy. Each subsection focuses on one intention category individually. For each intention, I point out how it is related to previous work and, in case the intention is novel, I try to motivate its introduction.

### 5.2.1 Lexicalized metaphor

Metaphors that are labelled as *Lexicalized metaphor* are associated to a plain communicative intention. The utterance is judged as having no other intention than to convey its propositional message straight. In Cameron's words, the metaphoric expression is "just the way to say it" (Cameron [2003]), that is, it is just the most conventional way of talking about the Topic. For lexicalized metaphors, the question of why was a metaphor preferred does not arise in interpretation. In other words, this category in the taxonomy does not differentiate between literal and metaphorical usages<sup>3</sup>. Here below I focus on two recurring subclasses of lexicalized metaphors.

#### The language of emotions

Emotions are complex and rather abstract concepts. Thus, speakers often rely on metaphorical language to talk about emotions in more concrete terms.

I fell in love

---

<sup>3</sup>Note that Steen [2017] hypothesises that highly conventionalized metaphors are probably understood by lexical disambiguation, just as polysemous words (p.9). In contrast, deliberate metaphors are "actively" interpreted as cross-domain mappings. See (Gibbs [2015]) for a critical reply to this claim.

### Warm feelings (Katz Fainsilber and Ortony [1987])

In the already cited paper by Katz Fainsilber and Ortony [1987], the authors observe how the language we use to talk about emotions is highly metaphorical. As a matter of fact, metaphors often constitute *the* way to talk about the Topic, since there is no conventional literal way to do so. We can explain this suggesting that emotions might be *metaphoric concepts* - that is, concepts that are understood through metaphoric mappings - in line with CMT.

### **Technical Language**

The language we use to talk about some activities has often its own jargon, common expressions, etc. This is true for academic domains such as mathematics, physics and the like, but also for non-academic domains like sports or hobbies. Consider the following examples from the VUAMC:

The vector potential is as useful as its scalar counterpart

Summer bedding is looking tired

In all these cases, there is no other intention behind the utterance than communication. Some other intentions - for instance, *Heuristic reasoning* (see below) - might have played a role in the historical development of these metaphoric expressions. However, in their current, most conventional use, they simply designate certain activity-related referents.

### **5.2.2 Persuasiveness**

Using a metaphor to refer to the Topic, the author can give it a non-neutral connotation. This connotation is often not motivated on explicit grounds. The intention is for the audience to adopt the utterer's positive or negative attitude towards the Topic.

The islamic wave<sup>4</sup>

this slender and anaemic first novel by a notable poet (Steen [2010])

As already stressed by Lakoff and Johnson [1980] (p.10) metaphors generally highlight some aspects of the Topic, while at the same time hide others. This process of highlighting and hiding causes a *framing effect* on the receiver, whereby the Topic is seen, as it were, through the lenses of the metaphor. The availability of several experiments and even of meta-studies (Sopory and Dillard [2002], van Stee [2018]) makes the Persuasiveness category the most supported empirically. One interesting aspect of Sopory and Dillard's study is their analysis of the optimal conditions for the persuasive effect (Sopory and Dillard [2002] p.413). In particular, the *position* of the metaphor in the discourse fragment

---

<sup>4</sup>The New York Times Magazine, May 31, 1992, Miller, J.

seems to influence its effectiveness. Interestingly, the position in the discourse marks a difference, for instance, in the use of metaphoric expressions with persuasive *vs* explanatory intention - the *Explanation* category is discussed below. While the framing effect is stronger if the metaphor is placed at the beginning of the discourse (Sopory and Dillard [2002] p.413), in didactic settings the metaphor more likely follows an explanation. In this way, initial misunderstandings due to a wrongly applied frame are avoided (Cameron [2003] p.118).

The study of the relationship between metaphor and persuasion offers food for thought about deliberateness, consciousness and intentionality. It is widely accepted that there is potential asymmetry in production *vs* reception of metaphors (Steen [2008] p.226; Steen [2011] p.42). Not everything that is produced as (deliberate) metaphor is understood as such. Especially with regards to persuasion, a better effect might be obtained if the persuasive intention of a metaphor is not recognized by the audience. On the other hand, that is, from the point of view of the producer, the metaphoric expression can be consciously selected - *e.g.* in the case of a political speech - or it can be the result of unconscious biases.

### 5.2.3 Argumentative metaphor

These metaphors are part of explicit arguments intended by the author to convince the audience of a certain claim. The intention is to support the argument, to make it more compelling for the addressee.

The effect is rather like an extended advertisement for Marlboro Lights (Steen [2010])

I propose that, in the context of argumentation, intentions behind metaphors can be analysed in terms of the role they play in the development of the discourse. Wagemans [2016] distinguishes two main manifestations of metaphors in argumentation: as (part of) a *standpoint* or as (part of) an *argument*. van Poppel [2021] specifies also another discourse move, namely the introduction of *starting points* for an argument. Here below I focus on two intentions, corresponding to two types of discourse move.

#### Assertive (standpoint/starting point)

The intention is to make an effective statement, either as a standpoint or as a starting point (premise) for an argument:

The organism can be compared to a keyboard (Wagemans [2016])

Following Beigman Klebanov and Flor [2013], argumentative metaphors of the Assertive type can be used with two main purposes. First, they can structure the discourse. These *organizational* metaphors are generally creative metaphors that strike the audience and organize their associated examples and ideas around

them. This type of metaphor is most likely used when a participant to an argumentative discourse advances their standpoint. On the other hand, *grounding* metaphors are conventional metaphors that have a grip on the socio-cultural basis. Adopting a grounding metaphor, a starting point open to further discussion becomes acceptable for both participants.<sup>5</sup>

### Supportive (part of an argument)

The intention is to actively contribute to the flow of an argument:

Human beings are not responsible for their actions, because human beings are machines<sup>6</sup> (Wagemans [2016])

A successful argument increases the acceptability of a standpoint (in the example, "Human beings are not responsible for their actions"), given the acceptability of the argument itself. Moving from a main premise ("Human beings are machines"), a connection premise ("Being a machine is a sign of not being responsible for your actions") justifies the transfer of acceptability to the standpoint (van Poppel [2021]). Arguments can be grounded on different kinds of relations between components of each premise: causal, analogical, symptomatic, etc. A metaphorical sentence can constitute either the connection premise (in which case we have arguments of analogy) or the main premise (different types of arguments are possible, *e.g.* arguments by sign - as in the example above).

### 5.2.4 Vividness

The intention is to express a certain feature of the Topic in an impressive way. The metaphor often constitutes a hyperbolic expression intended to strike the addressee for its intensity.

Jane was fuming with anger

There are few things worse than being bludgeoned into reading a book you hate (Steen [2010])

Metaphors sometimes strike our attention, breaking the flow of conventional discourse. This is particularly true when the affective component of an utterance is the most important for the author. In the first example above, there are several ways to express the same state of affairs, that is, the fact that Jane was angry. However, the metaphoric expression is most likely picked when the author intends to impress the receiver, to make them feel the seriousness of Jane's emotional state. Metaphorical language is in fact perceived as more

<sup>5</sup>However, note that van Poppel [2021] shows that combinations of conventional-standpoint and novel-starting point are also possible.

<sup>6</sup>Contrast also with the (more conventional) opposite claim: "Human beings are responsible for their actions, because human beings are not machines". An interesting remark is that metaphorical interpretation is not blocked by negation. This is not the place, however, for investigating further such phenomenon.

emotionally loaded (Piccirilli and Schulte Im Walde [2022]) and as a consequence it is preferred when intense emotions are at stake (Katz Fainsilber and Ortony [1987]).

### Swearing

A recurring case, worth of special attention, is that of swearing. The intention is to express a strong, negative emotional state, to offend and the like<sup>7</sup>:

She's going now and gonna leave me this old crap on the table! (Steen [2010])

This bloody footballer (Steen [2010])

Again, when someone is swearing, the most important meaning component of the utterance is the affective one. Language is used, in other words, primarily to express a strong, negative emotional state, to curse, to offend, etc. Thus, it comes with no surprise that swearing frequently resorts to metaphorical expressions, which are more emotionally engaging. These expressions can show a variable degree of conventionality.

### 5.2.5 Precision

The intention is to express a single, specific feature of the Topic. In most cases, the author is recurring to figurative language to describe a peculiar emotion or sensation that would lose its specificity if paraphrased literally.

It was like a very bright light was just shining outward (Katz Fainsilber and Ortony [1987])

he felt the momentary touch of a cheek so soft that it was  
like the fall of a petal (Steen [2010])

In some cases - though not in all cases - we feel that a metaphor cannot be paraphrased because there are no other words to express what we want to say. Nonetheless, we also feel that we know exactly what we want to say. In the second sentence above, the author wants to express not just any kind of softness. Many things can be soft and the touch, say, of a beloved person can be compared to several amongst them. However, the utterer felt the beloved's cheek softness precisely in the way in which petals are soft. In accordance with Ortony's inexpressibility hypothesis<sup>8</sup>, metaphors like this are used to describe the qualities of certain states that could not be expressed resorting to literal language alone. As he puts it: "whereof one cannot speak literally, thereof one should speak metaphorically." (Ortony [1975] p.49). The already cited paper by Fussell and Moss [1998] provides empirical evidence for the ability of metaphors to express precise, specific emotional states.

<sup>7</sup>For a typology of the main functions of swearing, see (Pinker [2007], Chapter 7).

<sup>8</sup>See (Ortony [1975]) or Chapter 2 in this thesis.

### 5.2.6 Artistic metaphor

These metaphors are used to predicate at once a whole set of features of the Topic. These features need not be all clearly determined in advance. Ultimately, the intention is to stimulate the receiver's creative interpretation.

"it is the east, and Juliet is the Sun" (Shakespeare [1993])

"Fermi's mantle in physics had fallen on his young shoulders" (Steen [2010])

Some metaphors are not easily paraphrasable because they could be paraphrased in a number of different, yet equally reasonable, ways. The ambiguity of the metaphorical meaning can be inherited to the Topic of the metaphor or it can be related to the set of features that the metaphor predicates of it. I propose that a specific intention of metaphor use - especially in literature - is the activation of several metaphorical mappings at once<sup>9</sup>. Here below I gather some evidence supporting this idea.

Rasse et al. [2020] conducted two psycholinguistic studies<sup>10</sup> in order to determine (1) the extent to which conceptual metaphors are accessed in the interpretation of poetic metaphors and (2) how the explicit reflection on conceptual metaphors guides subjects towards appropriate interpretations. In their second study, the authors observed that "people can recruit more than one conceptual metaphor when they encounter abstract topics" and that "people thought about the poem in different metaphorical ways." (p.328).

Based on a corpus of 204 literary metaphors (Katz et al. [1988]), Jacobs and Kinder [2017] conducted several computational experiments focusing in particular on metaphor comprehensibility (CMP), goodness (MGD), and number of alternative interpretations (ALT). As part of their research goals, they wanted to test a prediction of *Neurocognitive Poetics*, namely that "in poetry ambiguous metaphors produce higher aesthetic liking<sup>11</sup>" (Jacobs and Kinder [2017] p.146). Their results confirmed the expectations: "the more ambiguous a metaphor, the higher its MGD rating." (*Ibid.*)<sup>12</sup>.

<sup>9</sup>This idea is reminiscent of the thesis of *metaphoric indeterminacy*, which claims that metaphors don't come with a pre-determined correct interpretation. For instance, D.E. Cooper holds that metaphors admit several interpretations, none of which can be demonstrated as the only correct one (Cooper [1986] pp.71-77).

<sup>10</sup>They included 38 students, all English native speakers.

<sup>11</sup>Which is approximated, in their study, by the MGD ratings from (Katz et al. [1988]).

<sup>12</sup>A potential limitation of this study is that it is based on a corpus that contains only copula metaphors. But these, as we have seen, do not seem to constitute the most common cases in actual language use. For instance, in the VUAMC-Fiction - where we would expect to find more Artistic metaphors - there are 890 metaphor-related nouns against 1407 verbs and 1346 prepositions.

### 5.2.7 Imageability

The intention is to help the addressee to form a mental image of the Topic, to get an idea of how it looks like<sup>13</sup>. Evoking a more concrete and common domain, the metaphoric expression boosts the audience’s capacity for imagination.

Outriggers splayed from her upperworks  
like the antennae of some outlandish insect (Steen [2010])

This time the front door was open and a swathe of sunlight lay across the  
red-tiled floor (Steen [2010])

In psycholinguistic literature, imageability is defined as the property of words to easily evoke a mental image of their meaning (Broadwell et al. [2013] p.103)<sup>14</sup>. Given the general working of metaphor as a mapping from the concrete to the abstract, it comes with no surprise that metaphors often hinge on highly imaginable Vehicles. Thus, I propose that one intention behind metaphor use might be to allow the formation of a mental image of the Topic, thanks to the high imageability of the Vehicle.

Quite recently, Broadwell et al. [2013] have developed a prototype model for automated metaphor identification partly based on imageability. In their model, peaks in imageability constitute potential metaphors, which then need to be successively analysed and sometimes discarded. A key insight that motivates their approach is the belief that ”metaphors are used to express ideas in a more concrete form.” (p.109). It should be noted that imageability and concreteness - thought positively correlated (Paivio et al. [1968]) - might be two distinct constructs, as suggested by Dellantonio et al. [2014]. Two recent data-driven studies seem to support this claim. Gargett et al. [2014] investigated the relationship between concreteness/imageability and syntactic context using the VUAMC dataset. They employed the Mate tools dependency parser (Bohnet [2010]) and incorporated concreteness/imageability ratings from the MRC Psycholinguistic Database (Wilson and Division [1997]). Their models for metaphorical *vs* literal prediction revealed that concreteness/imageability scores alone couldn’t differentiate between non-literal and literal items. However, incorporating more detailed syntactic information made a difference. Noun heads had higher concreteness scores, while preposition heads had higher imageability scores compared to their dependents. In a subsequent study, Gargett and Barnden [2015] introduced a ”weight” variable (**w**) to measure the difference between concreteness and imageability ratings. They concluded that different features played distinct roles across different POS. Nouns utilized concreteness, imageability, and **w**, whereas combinations of imageability and **w** were more prominent for verbs and prepositions.

---

<sup>13</sup>Note that, *a priori*, this is not restricted only to mental imagery (sight) but to all the five senses of perception.

<sup>14</sup>Ref. to the seminal work by Paivio et al. [1968] for the original definition.

As a final remark, I would stress the difference between the categories Imageability and Precision/Artistic metaphor. While the latter fulfill a predicative intention, *i.e.* they attribute a specific/certain properties to the Topic, the former focus primarily on mental visualisation. This can be instrumental not only for descriptive purposes, but also to express commands. For example, Cameron reports an instance of metaphor used during a physical education class. While giving instructions to their pupils on how to perform a dance, the teacher said: "you are spokes in a wheel" (Cameron [2003] p.3). In this way, bringing to the discourse a Vehicle that is familiar and easily imageable for the children, the instructions are readily understood and followed by them.

### 5.2.8 Explanation

These metaphors are used for didactic purposes. The intention is to explain a new or already familiar concept to the addressee. There is some asymmetry in the discourse from specialists to non-specialists (*e.g.* from teacher to students).

The atmosphere is the blanket of gases that surrounds the earth (Cameron [2003])

[the fight] incarnates the enveloping totalization which the historical process is (Steen [2010])

The clarifying effect of metaphor has been recognized in the already cited work by Roberts and Kreuz [1994]. Moreover, there is some empirical evidence for the usefulness of certain (deliberate) metaphors in undergraduate lectures (Beger and Jäkel [2015]). In general, I propose to distinguish two possible cases:

- *Explanation of a new concept unfamiliar to the audience.* Following CMT, the explanation of the unknown from the known generally takes the form of a grounding of the abstract in the concrete - see (Lakoff and Johnson [1980] pp.58,61; Cameron [2003] p.131). Given the directionality of metaphor, knowledge of the SOURCE domain is essential to successful explanation.
- *Explanation of a concept already familiar to the audience.* The aim in this case is to improve the understanding of a concept which the addressee has already been exposed to - to perform a move from *spontaneous* to *scientific* concepts in Vygotskian terms (Cameron [2003] p.32). For optimal interpretation, knowledge of the TARGET as well as the SOURCE domain seems needed (p.195).

An interesting aspect of explanatory metaphors is that sometimes they might cause more harm than good. Adopting metaphoric language comes with several risks of blocking further understanding, as highlighted for instance in (Spero et al. [1989])<sup>15</sup>. Cameron lists several possible issues that may prevent the cognitive role of metaphor (p.236). In particular, she insists that not only Vehicle

<sup>15</sup>For further references see (Cameron [2003] p.39; Low [2008] p.216).

but also Topic knowledge is required for apt interpretation (p.234).

As a side-note, I would like to highlight that there could be also non-linguistic mediums for explanatory metaphors: diagrams (*e.g.* in mathematical practice), gestures (Gibbs [1994] pp.164-167), etc. All these can be accounted for within the framework of CMT. If metaphors are primarily a matter of thought, they can be observed in diverse human products, linguistic or otherwise.

### 5.2.9 Heuristic reasoning

The intention is to provide an interpretative model for a scientific theory, a work of art, etc. The metaphoric expression is used to organize the addressee's conceptualization of the Topic, based on their prior knowledge about another domain. The discourse generally remains among specialists.

A gas is like a collection of billiard balls in random motion<sup>16</sup>

It is her body as the canvas, her appearance as art (Steen [2010])

It is generally said that metaphor is a matter of seeing something *as* something else, that is, of interpreting things from a given perspective. In cognitive terms, we map the SOURCE domain to get a hold on the TARGET. Thus, a primary intention of metaphor, especially within academic contexts, is to provide an interpretation for the products of science, as illustrated by Hesse [1966] in her seminal book.

As a matter of fact, metaphorical models are not restricted to the domain of scientific enquiry. They are actually used as heuristic tools in various disciplines such as philosophy and art. If, as Hesse contends, the primary function of explanation is the metaphoric re-description of reality<sup>17</sup>, then metaphors play a crucial role in any discipline intentionally connected - in the phenomenological sense - to reality. Drawing from Goodman and Black, Ricœur talks of metaphors as *heuristic fictions*. With regards to literary metaphors, he writes: "a metaphor is to poetic language what a model is to scientific language in terms of its relation to reality. In scientific language, the model is essentially a heuristic instrument which aims, by means of fiction, to break down an inadequate interpretation and to pave the way for a new, more adequate interpretation." (Ricœur [1975] p.302).

---

<sup>16</sup>Adapted from (Hesse [1966], p.8): "take a collection of billiard balls in random motion as a model for a gas".

<sup>17</sup>"The deductive model of explanation should be modified and supplemented by a view of theoretical explanation as metaphoric re-description of the domain of the explanandum." (Hesse [1966] p.171).

### 5.2.10 Humour

The intention is to entertain the addressee, to be funny<sup>18</sup>. Metaphoric language is exploited for its divertive effects, which would go missing in literal paraphrases.

I'm a doormat in the world of boots (Dyner [2009] p.34)

When you walked into the well what I would call a cupboard but they classed it as the bathroom (Steen [2010])

Language is not only used to communicate. Among the many and varied uses of language, there is also the one of entertaining our addressees - and being entertained in return. In (Steen [2008]), Steen cites a typical case of divertive metaphors - which in general he assumes to be deliberate metaphors: the sports newspapers headers, with their characteristic word-plays and other rhetorical devices (p.223). Further examples of humorous metaphors can be found in jokes (Steen [2014] p.183) and riddles. Actually, the expression "humorous metaphor" could stand for an umbrella concept grouping different phenomena, as suggested by Attardo [2015]: funny metaphors, metaphors with an inherently funny Vehicle and failed metaphors<sup>19</sup> - among, possibly, many others. In all such cases, however, the intention of the metaphor is the same, namely to entertain the participants in the discourse. Metaphors can achieve this goal in various ways - see the *Resolvable Incongruity* view in the previous chapter.

### 5.2.11 Social interaction

These metaphors focus on interpersonal relations, group or cultural conventions and the like. The intention is to create or strengthen some bond between producer and receiver. Here below I distinguish two typical cases:

#### Intimacy (social bond)

The intention is to stimulate intimacy between utterer and addressee hinging on the sense of belonging to a group.

Sleepy Joe, Crooked Hillary<sup>20</sup>

---

<sup>18</sup>Following Dyner [2009], humor can be defined as potential for funniness. The category in my taxonomy should be considered quite broadly as incorporating various forms of entertainment. For instance, riddles can be entertaining without being necessarily humorous. They would nonetheless be included in this category.

<sup>19</sup>For instance, Goatly [1997] reports various cases of asymmetric interpretations (p.125-128), whereby an expression which was intended as a metaphor is not understood as such or vice versa. The asymmetry often causes humoristic effects, which may or may not be deliberately exploited by the producer.

<sup>20</sup>These are nicknames used by Donald Trump to refer to Joe Biden and Hillary Clinton, respectively. Source: [https://en.wikipedia.org/wiki/List\\_of\\_nicknames\\_used\\_by\\_Donald\\_Trump](https://en.wikipedia.org/wiki/List_of_nicknames_used_by_Donald_Trump)

These expressions from political jargon can be used - among other things - to signal the fact of belonging to the same group. Trump's supporters share the common Grounds that allow for a correct interpretation. They can readily work out the relevant referents and thus understand the metaphoric expressions; as suggested by Cohen [1978] and Goatly [1997].

### **Empathy (emotional bond)**

The intention is to stimulate empathy between utterer and addressee hinging on emotive effects.

You are on the right track (Cameron [2003])

She passed away

As detailed in the last chapter, there is empirical evidence showing that metaphorical language is more emotionally engaging (Piccirilli and Schulte Im Walde [2022] p.299). In particular in educational settings, stimulating an emotional bond between teacher and students might be highly important. As Cameron [2003] shows metaphors are used, often in combination with humor, to mitigate negative feedback (p.135). This kind of metaphors seems to exploit the "hiding" effect of metaphors studied in CMT. For instance, one might say "She passed away" *vs* "She died" in order to be polite. The adoption of a metaphoric expression - an euphemism in this case - avoids stressing the dramatic nature of the described event. Other instances of metaphorical hiding used for social purposes might be taboo talks, where certain Topics that can not be explicitly mentioned are referred to through acceptable Vehicles (*e.g.* "they slept together last night").

## Chapter 6

# Corpus Annotation

This chapter provides a data-driven complement to the theoretical part of the thesis. I first introduce the VUAMC, I describe how I built my dataset from it and how the dataset was annotated with intentions. I preliminarily assess the reliability of my annotation computing inter-annotator agreement on a subset of the data. Then, I summarise the output of my annotation. Finally, I draw interesting conclusions from my findings correlating attributed intentions with metaphor type, genre, novelty score and POS.

### 6.0.1 Collecting the data

In order to collect data for the annotation, I considered a small sub-part of the *Vrije Universiteit Amsterdam Metaphor Corpus* (Steen [2010]). This corpus was chosen since it focuses on metaphor, it covers different registers, it contains metaphors in different grammatical configurations and it has been extended in subsequent work with important information (*e.g.* novelty scores for metaphor-related words). Here below I summarise some of the key features of the corpus:

- Metaphoric expressions are identified following the MIPVU identification procedure (Gerard J. Steen and Pasma [2010]). The basic idea behind the procedure is the distinction between *contextual* and *basic* meaning of words. For more details, refer back to Section 2.1.3 in this thesis.
- Fragments are collected from the *British National Corpus Baby*, which is a reduced version of the BNC covering 4 registers. In particular, the BNC Baby consists of four parts:
  - Academic: 49,561 lexical units, 16 fragments
  - News: 45,116 lexical units, 63 fragments
  - Fiction: 44,892 lexical units, 12 fragments
  - Conversation: 48,001 lexical units, 24 fragments
- The VUAMC encodes the following information at word level:
  - Relation to metaphor (not related, related or borderline)

- Metaphor type (direct, indirect, implicit)
- Signal (metaphor markers when present)
- Conceptual mappings (personification when present)

Recall the distinction among different metaphor types<sup>1</sup>:

- *Direct*: There is no contrast between the contextual and basic meaning. The contextual meaning is also the basic meaning.  
Example: "He's like a ferret."
- *Indirect*: There is a contrast as well as comparison between the contextual and a more basic meaning.  
Example: "Professional religious education teachers like Marjorie B Clark (Points of View, today) are doing valuable work in many secondary schools."
- *Implicit*: Due to an underlying cohesive grammatical and/or semantic link in the discourse which points to recoverable metaphorical material.  
Example: "Naturally, to embark on such a step is not necessarily to succeed in realizing it."

Overall, my corpus consists of a total of 1214 metaphor-related words (MRW)<sup>2</sup>. Throughout the chapter, I will sometimes talk about metaphors *tout court*, and I shall be taken to mean MRW. These can be seen as "proxies" for more complex metaphorical phrases, whose analysis is left for future work. More specifically, I annotated:

- *All direct metaphors*. Total of 301 MRW. Note: all direct metaphors should be cases of deliberate metaphor use according to Steen [2014].
- *A subset of indirect metaphors*. For indirect metaphors, I have exploited information on *novelty score*, as provided by Do Dinh et al. [2018]'s study. In particular, I have downloaded all indirect metaphors from the VUAMC annotated with novelty scores<sup>3</sup> and divided them into 5 clusters: MRW with novelty score in [1,0.6], (0.6,0.2], (0.2,-0.2], (-0.2,-0.6] or (-0.6,-0.1]. I have focused only on the first two clusters, which correspond to the most novel metaphors. Total of 913 annotations out of 3320 MRW.

The annotation took place in Excel worksheets with drop-down alternative selection. 11 categories were included, plus a "dummy category" (??) to keep track of cases where an intention could not be attributed, due to different reasons - to be discussed in the next section. The list of categories used for the annotation was thus the following:

---

<sup>1</sup>Definitions and examples are taken from the Online version of the VUAMC available here: <http://www.vismet.org/metcor/about.html>

<sup>2</sup>Note, however, that 237 cases were excluded from the final dataset, which consists instead of 977 MRW annotated for single intention. The different reasons motivating an exclusion are detailed in the following section.

<sup>3</sup>Note that non-content words like prepositions and auxiliary verbs (*e.g.* "have", "be", "do") are filtered out by Do Dinh et al. The range for novelty scores is [-1=very conventional, 1=very novel].

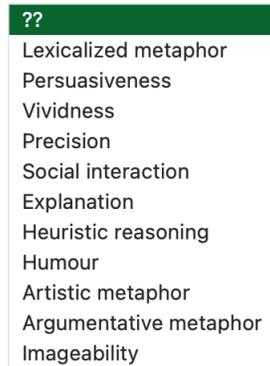


Figure 6.1: Drop-down selection of intentions

While performing the annotation, I often felt the need to add one or two extra intentions. This reflects the fact that metaphors generally seem to serve more than one purpose. Moreover, it was sometimes difficult to differentiate between two quite close categories - *e.g.* Persuasiveness/Argumentative metaphor, Artistic metaphor/Precision, Explanation/Heuristic reasoning. Following this last observation, I have decided to leave open the possibility to annotate metaphors with multiple intentions, as detailed in the Annotation Guidelines (see Appendix).

### 6.0.2 Cases of exclusion

In some cases, the annotation with an intention from the taxonomy was not performed. There are several reasons for this:

- *Annotation unit.* The VUAMC is a corpus annotated at word-level which takes metaphor related words (MRW) as basic unit. For this reason, one might find redundant instances of the same metaphoric phrase or expression in the corpus. For the purposes of my research, however, a more appropriate unit of analysis should be the phrase since the same intention is naturally attributed to all MRW in a metaphoric phrase. Thus, whenever I could, I avoided to annotate different MRW belonging to the same metaphoric expression.  
Example: "Dislocated from its political context it hangs like a piñata above the teeming streets of the city decorative yet potentially explosive." In this case, I annotated just the instance corresponding to the word "piñata" and not each MRW in the metaphorical phrase "like a piñata above the teeming streets of the city decorative yet potentially explosive".
- *Not enough context.* In some cases, there was not enough context to assign an intention. In general, it seems that a wider context could facilitate annotation since intention is probably a discourse feature that potentially spans over sentence level. Within the original dataset there were around 60 cases where I felt that more context is needed in order to perform the annotation (especially in Conversation genre). For some of them, I could still assign an intention, while for 33 I could not. These instances were filtered out from the final dataset to be

analysed.

Example: "contraption!"

- *Idioms*. There is one kind of figurative language that should be distinguished from metaphor. This is the case of idioms, that is, "a group of words in a fixed order that has a particular meaning that is different from the meanings of each word on its own"<sup>4</sup>. What is common to idiom and metaphor is that both are figurative uses of language in which the compositional construction of meaning is violated. However, while idioms represent relatively fixed and stable expressions within a linguistic community, metaphors are more productive and can show variation. This is due to the fact that metaphor, as per CMT, requires the activation of two conceptual domains, from which diverse elements can be drawn and mapped.

Example: "Even so, no room to swing a cat."

- *Conventional interjections*. Some highly conventionalized interjections were also excluded, since, just like idioms, they do not seem to require any metaphorical interpretation in terms of meaning transfer.

Example: "Bloody hell!"

- *Noise*. Finally, there were very few cases of noise which is probably due to some error in the extraction of the data (item not found or not related to metaphor in the online version of the VUAMC) or might be already present in the corpus (not clear if expression is metaphorical).

Example: "No, not amorous: randy, we have a word for that."

## 6.1 The annotation

### 6.1.1 Annotation procedure and guidelines

The procedure for the annotation of direct and indirect metaphors consists of two key steps:

1. In the first one, the annotator should distinguish lexicalized metaphors from other types of metaphors. If they perceive some intention behind the metaphor other than mere communication, then they shall move on to step 2.
2. In the second step, the annotator is asked to assign up to three intentions to the metaphor under analysis. In order to complete the task, they are provided with a table listing the taxonomic categories, each with its description and some paradigmatic examples.

The full guidelines to be adopted for the annotation can be found in the Appendix. In the guidelines, I provide a detailed description of the sequential steps to be followed during annotation. I also work out at length an example of annotation performed following the guidelines.

### 6.1.2 Annotation reliability

In order to assess the reliability of my annotation, I asked to another expert coder to annotate a subset of the data. The subset was built in such a way that it is representative of the whole corpus. More specifically, I randomly selected 200 metaphors from

---

<sup>4</sup>From the online Cambridge dictionary: <https://dictionary.cambridge.org/dictionary/english/idiom>

the corpus, respecting the original proportions between the different metaphor types<sup>5</sup>. Thus, the subset consists of:

- 50 direct metaphors,
- 14 indirect metaphors with novelty score in [1-0.6], and
- 136 indirect metaphors with novelty score in (0.6-0.2].

55 distinct items were judged as problematic by either or both of the two annotators. I decided to compute reliability only on the remaining 145 metaphors, where at least one intention was assigned by each annotator.

Inter-annotator agreement measures how much annotators agree on the annotation of a language resource (LR). In general, it serves as a proxy for the quality of the annotation and as an upper-bound to the performance of any model based on the LR. In my case, computing an agreement score is essential also as a preliminary validation of the taxonomy: if there is low agreement, this may be due to some issues in the choice of categories or in the way they are presented in the annotation guidelines. In order to compute agreement, I relied on Cohen’s kappa ( $\kappa$ ), which is a common measure of pairwise agreement (Artstein and Poesio [2008]). It estimates and takes into account the chance of random agreement between annotators. This metric assumes that each coder assigns only one category to each item. Thus, some adjustments needed to be made in order to compute  $\kappa$ . For the observed agreement, I counted as an agreement instances where both annotators assigned at least one intention in common. For instance, if Annotator1 assigned intentions x,y and Annotator2 assigned intention x to a given metaphor, this would count as an agreement. The observed agreement is 0.56. In order to estimate the probability of agreement by chance, instead, I decided to consider only the first attributed intention. This choice inevitably disregards useful information but it makes it possible to compute Cohen’s kappa in a straightforward way<sup>6</sup>. Here is a table summing up the output of the annotations:

	Annotator1 (me)	Annotator2
Lexicalized metaphor	65	67
Persuasiveness	7	17
Argumentative metaphor	4	
Vividness	9	15
Precision	5	11
Artistic metaphor	13	
Imageability	18	31
Explanation	8	
Heuristic reasoning	11	4
Humour	4	
Social interaction	1	

<sup>5</sup>The proportions found in the corpus are: 24,79% direct metaphors, 7,25% indirect metaphors with novelty score in [1,0.6] and 67,96% indirect metaphors with novelty score in (0.6,0.2].

<sup>6</sup>I originally considered also another option, namely to implement "weighted" counts. In the same example as before, the annotation of x and y would count 0.5 each for Annotator1, while the annotation of x would count as 1 for Annotator2. However, given the time constraints I could not implement this solution.

Since several categories were not assigned to any item by Annotator2, Laplace smoothing was applied to the table so to avoid multiplications by zero. Thus, each count was augmented by 1 and the number  $N$  of items was assumed to be 156. The resulting agreement score is  $\kappa = 0.43$ , which generally suggests weak agreement.

There might be several causes behind this fairly unsatisfactory result. First of all, the annotation required is quite complex, dealing with fine-grained semantic information and with many categories. The quality of the annotation could be improved training the annotators or adding more details to the guidelines. Secondly, due to time constraints no harmonization process could be performed. This would have potentially helped to get a higher agreement both on the items to be excluded and on the attributed intentions. Finally, information on second and third attributed intention were not considered in the present calculation of  $\kappa$ . The adoption of a more adequate metric, allowing more categories to be assigned to a single item, would maybe enhance the agreement score.

## 6.2 The dataset

The whole corpus used for the present study consists of around 1.2k MRW collected from the VUAMC. A number of instances were marked by the author of the thesis as cases to be excluded, as detailed in the previous section. These instances were thus filtered out from the final dataset. Each of the remaining 977 MRW was annotated with one intention from the taxonomy. This dataset served as a basis for successive analyses, the output of which I summarize in the following pages. In particular, I investigated possible relations between attributed intention and genre, novelty score and part of speech (POS). A separate subsection is devoted to each case of study in turn.

### 6.2.1 Genre

The genre of the discourse in which a metaphor appears should intuitively tell us something about its presumed intention. In particular, one would expect to find relatively more metaphors with a specific intention in extracts from certain genres, and not from others. This is suggested also by Steen [2008], who claims in passing that the function of a deliberate metaphor depends on the function of the discourse in which it is found<sup>7</sup>.

In the following, I summarize the output of the annotation with information on genre, intention and metaphor type. Counts have been plotted using the

---

<sup>7</sup>"In production, deliberate metaphor use may be conceptualized as a distinct rhetorical strategy that senders utilize to achieve a specific discourse function [...] this may most clearly have to do with the function of the discourse event in which language users are engaged. Thus, metaphor may be used deliberately for divertive purposes in literature, advertising, or journalism; or it may be used deliberately for persuasive purposes in advertising or in politics and government communication, and so on." (p.224).

Seaborn data visualization library in Python<sup>8</sup>. The information on genres is directly available in the VUAMC under four dedicated tags. In my graphs, I adopt the following abbreviations:

Genre tag (from VUAMC)	Abbreviation
ACPROSE (Academic prose)	Aca
NEWS	News
FICTION	Fiction
CONVRSN (Conversation)	Conv

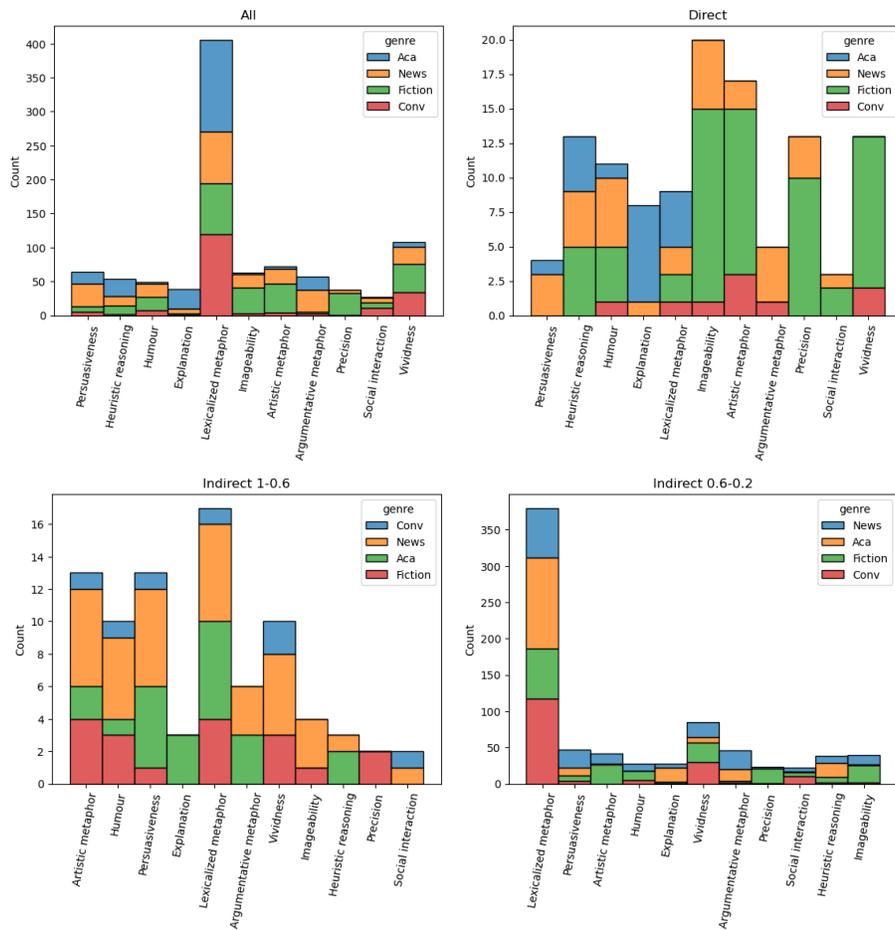


Figure 6.2: Distribution of genres for metaphor types and intentions

Here below, I provide graphs with genre distribution for each category in the taxonomy. The data are collected grouping all metaphors types together.

<sup>8</sup>More information regarding Seaborn can be found here: <https://seaborn.pydata.org/>

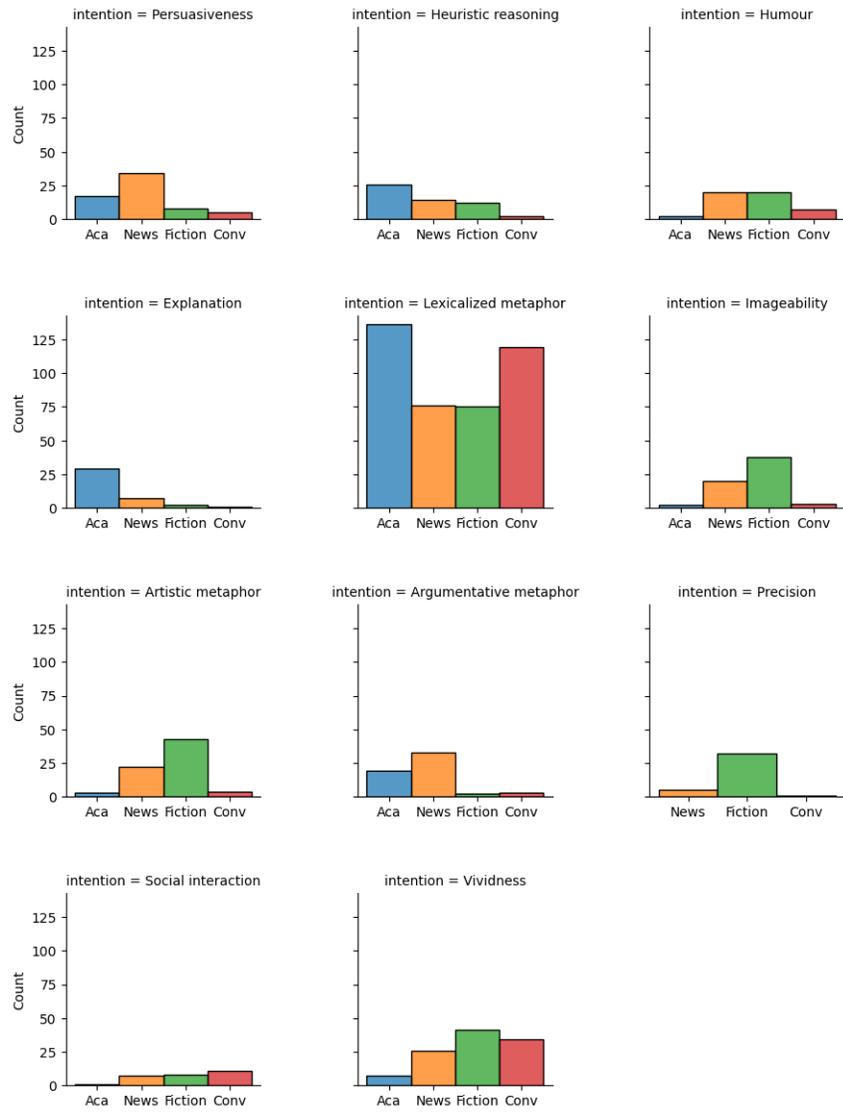


Figure 6.3: Distribution of genres for individual intentions (all metaphor types)

## 6.2.2 Novelty

Information on the novelty *vs* conventionality of metaphors is crucial for understanding how different intentions are reflected in different language choices. In particular, certain intentions seem to correlate with highly conventional metaphors, while others result in more original linguistic products. First of all, I report the distribution of novelty scores across the different metaphors types.

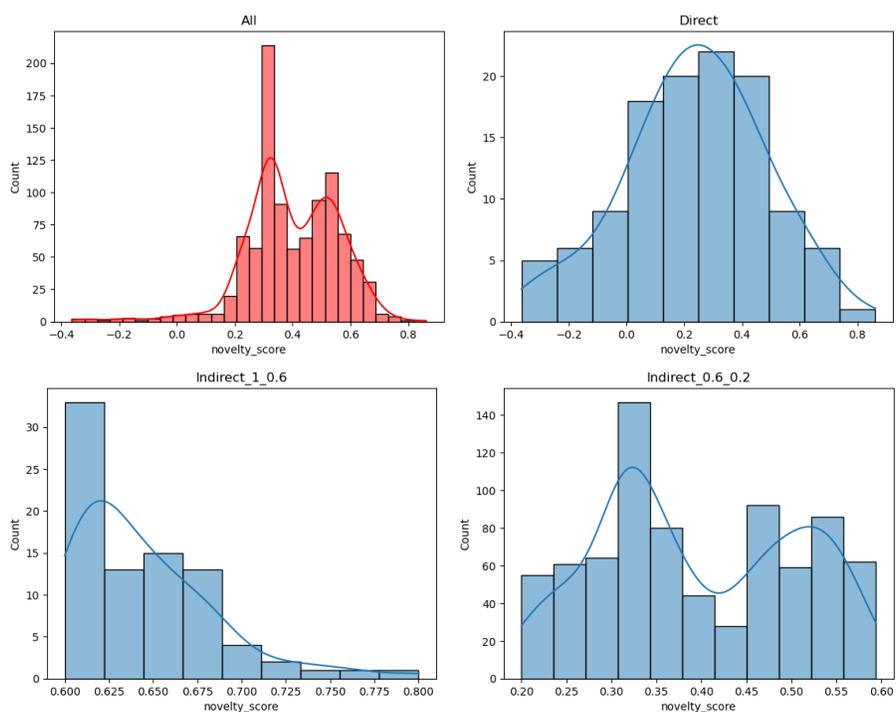


Figure 6.4: Distribution of novelty scores for metaphor types

In the next page, instead, I compare the distributions of novelty scores over individual categories. In the first graph, I contrast the distribution over Lexicalized metaphor *vs* all other metaphors merged together. In the second graph, I zoom in and plot distributions for each individual category. In this way, it is easier to visualize which categories reproduce the general tendency of the dataset and which, on the other hand, do not. Graphs are obtained through `plot` function from Seaborn library and show probability densities<sup>9</sup>.

<sup>9</sup>A probability density is, loosely speaking, a function such that its integral over an interval is equal to the probability of a continuous random variable falling into that interval.

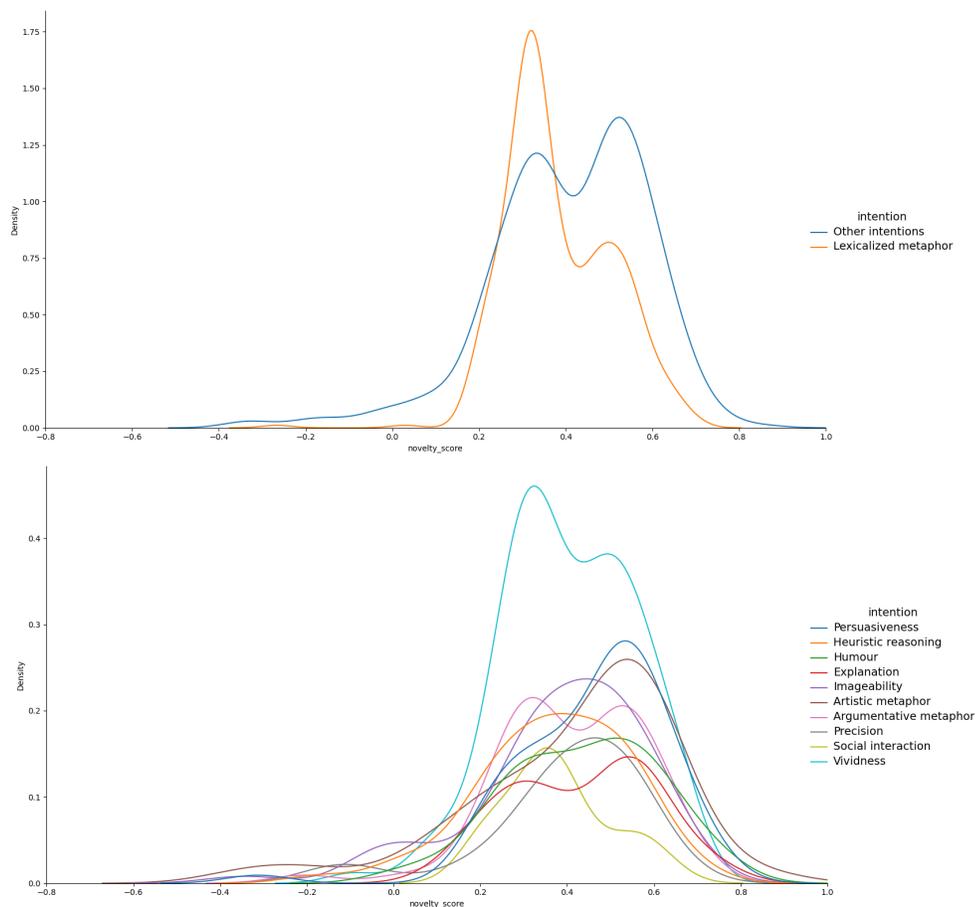


Figure 6.5: Distribution of novelty scores for Lexicalized metaphor *vs* other intentions (all metaphor types)

To quantitatively estimate the degree of similarity between the general distribution and the individual distributions, I compute their pairwise divergence. I use first the Kullback–Leibler divergence ( $D_{KL}$ ) and second the Jensen–Shannon divergence ( $D_{JS}$ ) - the former is not symmetric, while the second is symmetric. In our case, the sample space is a finite set consisting of ranges of novelty scores. Probabilities are derived from the probability distribution graphs obtained using the histpot function from Seaborn library. After some fine tuning, the optimal number of bins for computing probabilities seems to be 200. Thus, each probability distribution is a 200-dimensional array where each coordinate  $i$  is the probability of a random metaphor having novelty score in the  $i$ -th range. In the table below, I summarize the output of the calculations for the different divergences. I highlight in light blue the three distributions that are closest to the general distribution, and in green the distributions that are the most far

apart<sup>10</sup>:

P	Q	$D_{KL}(P, Q)$	$D_{KL}(Q, P)$	$D_{JS}(P, Q)$
General	Lexicalized metaphor	0.2204	0.1961	0.0453
...	Argumentative metaphor	0.2654	0.3238	0.0616
...	Artistic metaphor	0.2175	0.2005	0.0493
...	Explanation	0.546	0.6577	0.1299
...	Heuristic reasoning	0.2222	0.2409	0.0531
...	Humour	0.3763	0.4383	0.0914
...	Imageability	0.4768	0.5103	0.1043
...	Persuasiveness	0.3658	0.4422	0.0859
...	Precision	0.4566	0.4357	0.0946
...	Social interaction	0.9433	0.9433	0.2006
...	Vividness	0.2397	0.2778	0.0573

Finally, here below are the mean novelty scores for each category. These will serve as complementary data in my analyses. Values are computed merging all metaphor types:

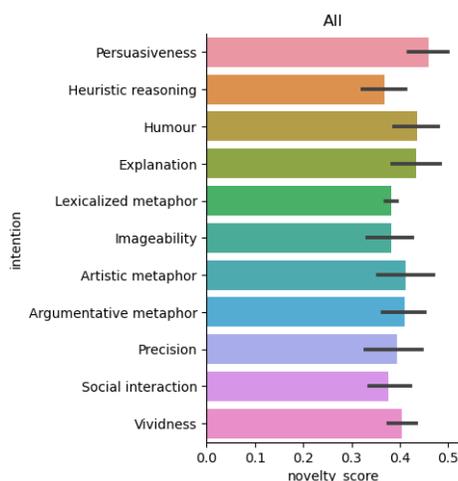


Figure 6.6: Mean novelty scores for individual intentions (all metaphor types)

### 6.2.3 POS

In order to analyse whether some intentions are typically realized in specific grammatical categories, data on POS were also considered. In particular, the VUAMC inherits the syntactic information encoded at word-level in the BNC<sup>11</sup>. The latter utilizes a set of 57 tags to assign word classes to each lexical unit.

<sup>10</sup>Float point numbers are approximated at the 4th decimal.

<sup>11</sup>For more information, see: Manual to accompany The British National Corpus (Version 2) with Improved Word-class Tagging by G. Leech and N. Smith. Available here: [http://www.natcorp.ox.ac.uk/docs/bnc2postag\\_manual.htm](http://www.natcorp.ox.ac.uk/docs/bnc2postag_manual.htm)

Each tag signifies a specific grammatical class of words and is denoted by a three-character code, such as NN1 representing "singular common noun". Given the relatively high number of different wordclass tags, I decided to build coarser grammatical classes (called POS), clustering different tags together. Here is a table specifying the POS classes and the wordclass tags falling into each of them:

POS class	wordclass tags
Adj (adjectives)	AJ0, AJC, AJS
Adv (adverbs)	AV0, AVP, AVQ
Noun (nouns)	NN0, NN1, NN2, NP0
Verb (verbs)	VBB, VBD, VBG, VBI, VBN, VBZ, VDB, VDD, VDG, VDI, VDN, VDZ, VHB, VHD, VHG, VHI, VHN, VHZ, VM0, VVB, VVD, VVG, VVI, VVN, VVZ

One final note before turning to the figures. The version of the VUAMC used for this study is the one adopted by Do Dinh et al. [2018], since it contains useful information on novelty scores. However, as written in their paper "non-content words like prepositions and auxiliary verbs (*have, be, do*) are filtered out beforehand" (p.1415). Hence, I have not introduced a POS class corresponding to prepositions. Moreover, one should bear in mind that figures for the verb class might be underestimated. Data on indirect metaphors have been merged (novelty score in [1,0.2]).

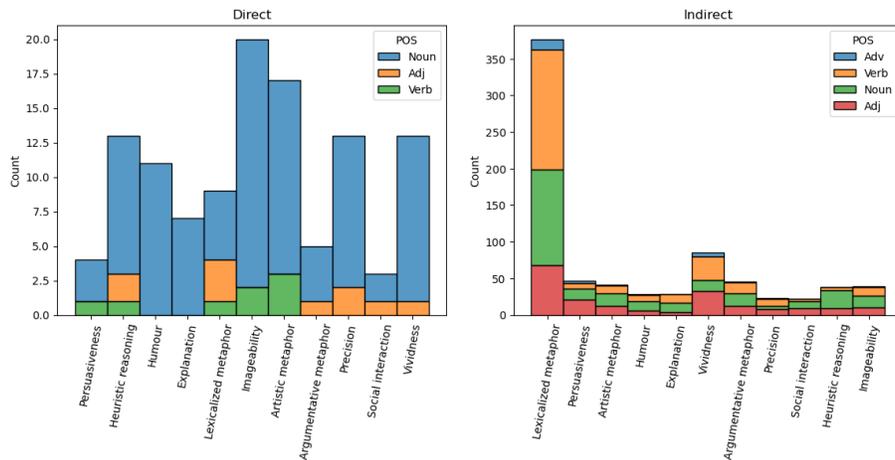


Figure 6.7: Distribution of POS for metaphor types and intentions

In the following page, I provide more fine-grained figures for indirect metaphors.

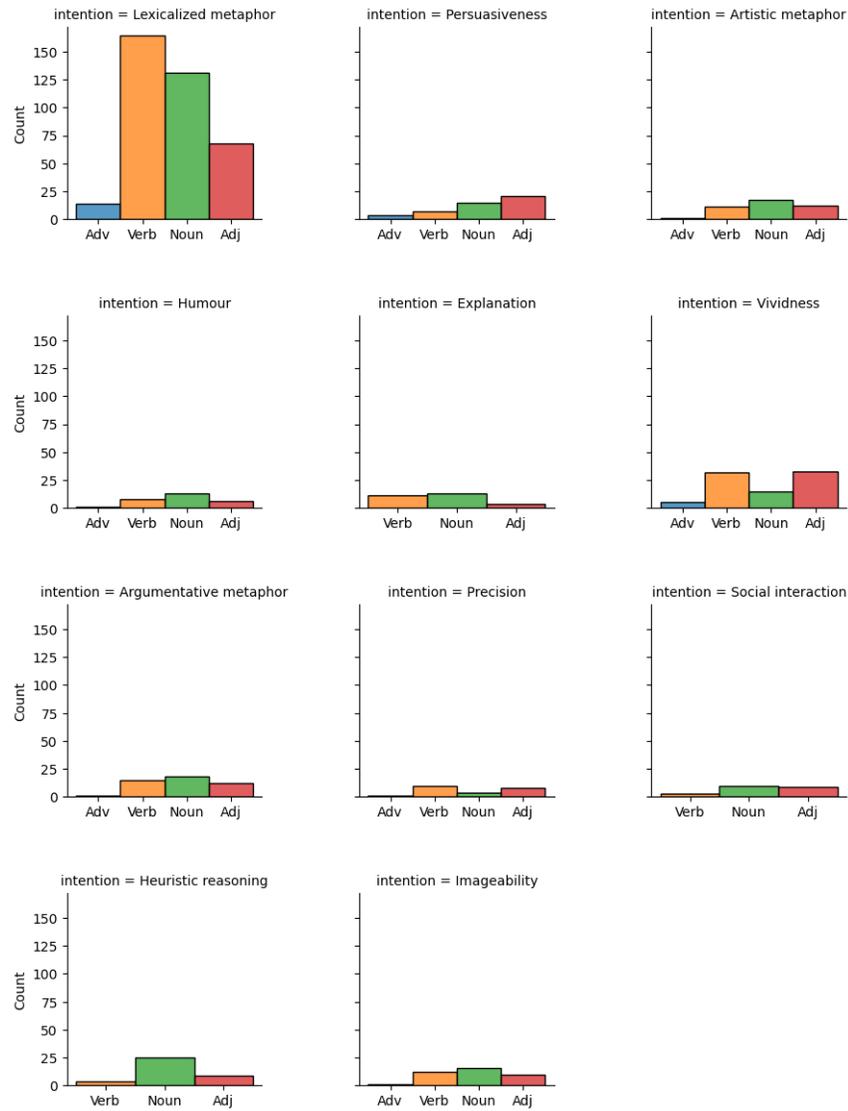


Figure 6.8: Distribution of POS for individual intentions (indirect metaphors)

### 6.3 Qualitative analysis

In this section, I perform qualitative analyses and draw interesting conclusions from my findings. In particular, I focus on possible correlations between the perceived intention of a metaphor and its genre/novelty score/POS.

### 6.3.1 Genre

In general, my findings on genre partly support the claim that intentions behind metaphors seem to correlate with the discourse genre in which the metaphor is found. For instance, Artistic metaphor, Precision and Imageability are found mostly in Fiction; Persuasiveness and Argumentative metaphor in News and Academic texts; Social interaction in Conversation. However, reality is more complex and suggests that drawing one-to-one correspondences would be too simplistic. In most cases, instances of the same intention are found in all four registers. Genre can thus help to track most common uses but not all uses.

- In figure 6.2, I plot how genres distribute over the different metaphor types and over individual intentions. With regards to direct metaphors, the three most common categories are Imageability, Artistic metaphor and Precision/Vividness/Heuristic reasoning. All of these intentions are expressed more often in metaphors from Fiction texts. For indirect metaphors, the most common category is Lexicalized metaphor, with a predominance over the other categories that becomes more accentuated the lower novelty scores get. These lexicalized metaphors with low novelty score most likely correspond to the conventional metaphors, or even dead metaphors, that are found in everyday language and constitute the bulk of metaphor according to CMT. Apart from lexicalized metaphors, we see some variation among the two subsets of indirect metaphors considered. Indirect metaphors with novelty score between 1-0.6 remain closer to direct metaphors as for their perceived purpose: Artistic and Vividness categories are still within the top three. In addition, we find Persuasiveness and Humour. With regards to genre, these metaphors are most commonly found in News. Finally, in indirect metaphors with novelty score between 0.6-0.2 the most common categories, after Lexicalized metaphor, are Vividness, Persuasiveness and Argumentative metaphor. The distribution over genres is in this case more diverse, suggesting some variation over individual intentions. To understand if this is actually the case, I rely on successive analyses.
- Figure 6.3 zooms in to see how genres distribute over each intention category individually. Data are obtained merging all metaphor types - thus they are biased to represent indirect metaphors with novelty score between 0.6-0.2, which are by far the most numerous in my dataset. Lexicalized metaphors are unevenly distributed over the four genres, with peaks on Academic texts and Conversation. While the former can be explained as cases of "Technical language" (see Chapter 5), the latter might be due to typical instances of "metaphors we live by" which are used by speakers since they are just part of standard, everyday English. With regards to Imageability, Artistic metaphor and Vividness, the tendency found in direct metaphors is confirmed: these metaphors are found mostly in Fiction. These categories in fact reflect certain discourse goals that are particularly relevant for literary texts. Explanation metaphors are mostly found

in the Academic genre, as one might expect. Persuasiveness and Argumentative metaphor are realized more often in News, which also makes sense considering that the purpose of articles is, more often than not, to convince the reader of a certain point, rather than objectively describe some events. Interestingly, the only category showing the predominance of Conversation genre is Social interaction. We can explain this given the very intention behind this category, *i.e.* the stimulation of social bonds between discourse participants. This goal can be achieved most easily in conversational, rather than written, interaction.

### 6.3.2 Novelty

With regards to novelty scores, it is safe to claim that metaphors with different perceived intentions show different degrees of conventionality. Taking into account average novelty scores and estimated distributions, categories such as Persuasiveness, Explanation, Humour and Artistic metaphor are generally more original, while Lexicalized metaphor, Social interaction and Heuristic reasoning are more conventional.

- Figure 6.4 plots the distribution of novelty scores for the different metaphor types. The graph "All" is obtained merging the three types and shows the general tendency of the dataset. In particular, we observe two peaks in novelty score, around 0.51 and 0.33<sup>12</sup>. Direct metaphors show a distribution similar to a normal distribution with mean 0.25. Given that the range of novelty scores for direct metaphors in the dataset was the whole range - namely, [-1,1] - this might suggest a slight tendency for direct metaphors to be quite original. Indirect metaphors with novelty score in 1-0.6 tend to accumulate towards the right end of the range, with a peak at 0.62. Finally, indirect metaphors with novelty score in 0.6-0.2 roughly replicate the general tendency, with peaks at 0.52 and 0.32<sup>13</sup>.
- In order to get a clearer idea of what might correspond to the two peaks observed in the general distribution, in Figure 6.5 I zoomed in to see the distributions for individual intentions. Figures are obtained merging instances from all metaphor types together. The peak at 0.33 is mostly due to lexicalized metaphors, which are the most represented in the dataset. On the other hand, other categories seem to contribute more to the peak at 0.51 - see "Other intentions" in the first graph. Based on the second graph, interesting observations can be made on individual intentions, too. More creative metaphors with peaks around 0.5 are Imageability, Precision and Artistic metaphor. The same tendency is observed for persuasive

<sup>12</sup>Note that these values are to be taken as rough estimates and have not been explicitly computed as exact maxima.

<sup>13</sup>It should be noted that the distribution of indirect metaphors over the whole range of novelty scores is not available. This is the result of a design choice of the present study: the lower the novelty score, the more lexicalized metaphors are expected to be found. Hence, indirect metaphors with novelty scores below 0.2 were not considered, since they are less interesting for investigating intentions.

metaphors - this is actually quite unexpected. Social interaction is the only category showing a single peak around 0.33, suggesting more conventionality - recall that Social interaction metaphors have a grip on cultural and sub-cultural bases.

- Computing divergence between probability distributions of novelty scores is essential to confirm or reject hypotheses based on intuitive similarities among the graphs. The output of the computations shows that overall the categories with a distribution most similar to the general one are Lexicalized metaphor, Artistic metaphor and Heuristic reasoning. While the first result was expected, the last two are quite surprising and need further investigation. On the other hand, most dissimilar distributions with respect to the general tendency are the ones of Social interaction, Explanation and Imageability, in line with the expectations.
- Data in figure 6.6 can be used as an approximation of the degree of conventionality of the different categories. Intentions that result in metaphors with highest means are: Persuasiveness, Humor, Explanation. On the opposite, Heuristic reasoning, Social interaction and Lexicalized metaphor have the lowest average novelty scores. However, before drawing conclusions one should consider also how error intervals - the black bars in the graph - vary for the different categories, since these are unevenly represented in the dataset. In particular, figures for intentions that are poorly represented - such as Social interaction, Explanation, Precision - are less reliable. Interestingly, Explanation and Heuristic reasoning categories, which otherwise are quite close in terms of their intentions, seem to show different profiles when it comes to novelty. Explanation metaphors are more original; they are likely used by experts to attract their addressee's attention and stimulate active thought. Heuristic reasoning metaphors, instead, may be used to conceptualize certain Topics through Vehicles that are quite conventional.

### 6.3.3 POS

Findings on POS show the greatest variation among metaphor types, with direct metaphors mostly realized as nouns. A more complex picture is found, instead, for indirect metaphors. Lexicalized metaphors consist typically in verbal metaphors - even though nominal metaphors are also common. The categories that are usually realized as nouns are Heuristic reasoning, Artistic metaphor, Imageability and Humour. Finally, adjectives are common in the Persuasiveness and Vividness categories.

- Figure 6.7 contrasts the distribution of POS over the different intentions for direct and indirect metaphors. Direct metaphors show a clear preference for nouns in all categories. Even though data may not be completely reliable, this seems to reflect a general tendency that has to do with the

very definition of direct metaphors<sup>14</sup>. The most typical case of a direct metaphor is in fact a copula metaphor, where the verb *be* is followed by a noun phrase with predicative function. Data on indirect metaphors - merging novelty scores between 1-0.2 - seem to show, on the other hand, more complex patterns.

- In Figure 6.8, I have plotted the distribution of POS over individual intentions, focusing just on indirect metaphors. Interestingly, we see that Lexicalized metaphors are typically realized as verbal metaphors, while nominal metaphors are only at the second place. This finding is in agreement with other studies in the literature claiming that verbal metaphors are actually the most widespread - ref. to Chapter 2 in this thesis. Other categories showing a predominance of verbal metaphors are Vividness and Precision. Nouns are the most common POS for several categories, most notably Heuristic reasoning, Artistic metaphor, Imageability and Humour. Of some interest is the case of adjectives, which are typically selected for Vividness and Persuasiveness. As a matter of fact, persuasive metaphors might resort to adjectives to express a judgment in a more "hidden" way, avoiding explicit predication through a copula construct hinging on a noun. This differentiates Persuasiveness from the similar category of Argumentative metaphor, which, on the other hand, is most typically realized in nouns.

---

<sup>14</sup>In particular, recall that several instances of direct metaphor from the original corpus have been filtered out from the final dataset since they constituted "redundant" cases: several MRW belonging to the same metaphorical phrase, all sharing the same intention. It may be that, given the semantic predominance of nouns, I was biased in choosing a noun MRW instead of, say, an adjective. As a committee member kindly suggested, the selection of one MRW from a metaphoric expression could be automatized. For instance, quantitative semantic information such as concreteness and/or imageability scores could be used to extract the word contributing the most to the metaphoricity of the phrase.

# Chapter 7

## Conclusion

In this thesis, I have addressed the general question of why we use metaphors in our everyday linguistic exchanges. I have framed the answer in terms of intentionality. In particular, building on Anscombe's philosophy of action, I maintain that such *why*-question is properly answered in terms of reasons for speaking as we do - and not in terms of causes. The reasons that we may provide to motivate our linguistic habits, as well as those of others, generally take the form of perceived intentions, *i.e.* of discourse goals that the utterance is taken to accomplish.

After having thus clarified the notion of intention that serves as theoretical background for my enquiry, I have collected evidence from existing literature and incorporated it into a novel taxonomy of intentions behind metaphor use. The taxonomy can be used to annotate metaphors, as a first experience with corpus annotation shows. Data collected from the VUAMC helped me to better understand the nature of the different categories in the taxonomy and how these are realized in different metaphor types, genres, novelty scores and POS.

### 7.1 Contributions and limitations of this study

This study contributes to the understanding of the relation between metaphors and intentions. Clearly specifying what is meant by intention behind metaphor use is crucial for any meaningful comparisons between different approaches. Moreover, the taxonomy presented in this thesis is a first step towards the systematization of the various findings on discourse goals that metaphors can accomplish. Individual categories can now be investigated further or be rejected, and missing ones can be introduced.

My thesis has inevitably also certain limitations, which call for future improvements:

- *Annotation unit.* As discussed in Chapter 5, there is a theoretical mis-

match between the annotation of intentions and the corpus used for the annotation, namely the VUAMC. While the latter is a corpus based on word-level annotation, the same intentions seem generally to be shared at least among all MRW in a given metaphorical phrase<sup>1</sup>. A more natural approach to the annotation of intentions would be to annotate whole phrases - whenever present - and not just words. Thus, an improved annotation of the VUAMC would require to merge redundant instances linked to the same phrase and aggregate novelty scores, assigning them directly to phrases.

- *Unbalanced dataset.* The dataset used for my analyses is unbalanced in terms of metaphor types, but also categories represented. This is fine for the present study, since in this way it was possible to estimate the relative frequency of direct/indirect metaphors and of the different intentions in the original corpus. However, a more detailed investigation of the individual categories might require enlarging the dataset or adopting another corpus. For example, the Social interaction category was assigned only to 27 instances - too few for accurate statistics.
- *POS missing.* Given the need for novelty scores, the dataset is a subset of the Do Dinh et al. [2018]’s version of the VUAMC, which filters out prepositions and auxiliary verbs. Thus, there are no data correlating the grammatical category of prepositions to the individual intentions. Also, the figures on verbal metaphor are underestimated. Incorporating prepositions and auxiliary verbs might validate the present findings or reveal unseen tendencies.
- *Few annotators.* The annotation of the corpus was performed almost entirely only by the author of the thesis. Another expert coder annotated 200 metaphors, allowing the computation of an agreement score. The scarcity of annotators is thus a major limitation of the present study. More coders are needed in order to enhance the annotation reliability and to enlarge the annotated dataset.

## 7.2 Directions for future research

As metaphor is itself a multidisciplinary topic, also this study can be the starting point for successive work in different fields:

- *Philosophy of Language.* The approach to intention adopted in this thesis can be seen as an "application" of Anscombe’s theory of action to the domain of metaphor studies. The notion of *reasons for speaking* could be further analysed and applied in general to linguistic phenomena other

---

<sup>1</sup>For instance, in "as an encapsulation of stereotypical images of Mexico" the annotation currently refers to *encapsulation* only but is actually informed and may be linked to the whole phrase.

than metaphor. It could serve as a paradigm for any inquiry into *why* people resort to different forms of figurative language.

- *Psycholinguistics.* At the present stage, the process of intentions attribution is linked to the interpretation of metaphor. However, as Gibbs et al. [1991] suggest, perceiving an utterance as produced by an intentional agent does make a difference already in comprehension. Thus, some experiments could be implemented to test whether the perception of intentional agents *with specific intentions* might also affect comprehension.
- *Natural Language Processing.* Quite recently, the question of why metaphors are sometimes preferred to their literal alternatives has attracted the attention of the NLP community. In particular, Piccirilli and Schulte Im Walde [2022] evaluate different models based on *discourse features* on a prediction task (metaphoric *vs* literal expression). However, none of their models performs well (p.303). A possibility could be to incorporate information on the perceived intention of target expressions and see whether performances increase significantly.

# Appendix A

## The annotation guidelines

In this task, you are asked to annotate the intentions behind direct and indirect metaphors. For each sentence you are presented with, please annotate the text delimited by `<b>` and `</b>`. For instance, in the sentence "Usually the slightest whisper travelled like jungle `<b>`drums`</b>` through the world of fashion" you should annotate the word "drums", following the steps that are detailed below.

- **Step 1:** decide if the metaphoric expression could be avoided.

If there are (literal) paraphrases that would convey roughly the same message in the given context, please continue the annotation and proceed with Step 2. If you cannot think of any paraphrase that avoids the metaphor and would work just fine, then mark the metaphor as a *Lexicalized metaphor* and skip Step 2.

- **Step 2:** select categories from the taxonomy of intentions.

In this step, you are asked to select a possible intention behind the metaphor you are analysing. The list of categories that you should use is the following one: *Persuasiveness, Argumentative metaphor, Vividness, Precision, Artistic metaphor, Imageability, Explanation, Heuristic reasoning, Humour, Social interaction*. If you think that more intentions might play a role, feel free to select multiple categories - up to a maximum of 3.

### A.1 Explanation

#### A.1.1 Lexicalized metaphors

To discriminate between lexicalized metaphors and other metaphors, try to think about the subject matter (the Topic) of the metaphor. If the metaphor is just the most common way to talk about the Topic, then mark it as *Lexicalized*.

On the other hand, if the metaphor could be avoided, and the intended message could be expressed in a different way, then the metaphor is not lexicalized. Consider the following examples:

Lexicalized	Sentece	Explanation
Yes	Do you <b>follow</b>?	The speaker is asking the hearer if they are "following" (most likely) their words. This simply reflects the way in which we generally conceptualize discourse, namely in spatial terms ( <i>e.g.</i> as a path).
No	Usually the slightest whisper travelled like jungle <b>drums</b> through the world of fashion.	The noun "drum" is not commonly used to talk about fashion. One could express the intended message through the following paraphrase "Usually the slightest whisper spread very fast and loud though the world of fashion".

### A.1.2 Intention categories

For Step 2, try to think of which communicative goals the metaphor might accomplish better than its paraphrases. To decide which intention(s) to select, refer to the following overview of the taxonomic categories. Each item is provided with its description and some paradigmatic examples.

Intention	Description	Examples
<i>Persuasiveness</i>	Using the metaphor to refer to the Topic, the author gives it a non-neutral connotation, which is not motivated on explicit grounds. The intention is for the audience to adopt the utterer's positive or negative attitude towards the Topic.	<ul style="list-style-type: none"> <li>• The &lt;b&gt;ramshackle&lt;/b&gt; Whitley Council negotiating machinery is the other reason why the ambulance workers have lost out.</li> <li>• America may have changed Presidents a year ago, but the fiscal ticket remains as &lt;b&gt;inpenetrable&lt;/b&gt; as ever.</li> <li>• An atmosphere &lt;b&gt;poisoned&lt;/b&gt; by mistrust.</li> </ul>
<i>Argumentative metaphor</i>	These metaphors are part of explicit arguments intended by the author to convince the audience of a certain claim. The intention is to support the argument, to make it more compelling for the addressee.	<ul style="list-style-type: none"> <li>• The effect is rather like an extended &lt;b&gt;advertisement&lt;/b&gt; for Marlboro Lights.</li> <li>• There was already a rather perfunctory air to the Queen's visit three years ago, as if it were just a required &lt;b&gt;coda&lt;/b&gt; to her tour of China.</li> <li>• But the villages are dying, becoming suburbs or &lt;b&gt;dormitories&lt;/b&gt; where few people work but many sleep.</li> </ul>

<i>Vividness</i>	The intention is to express a certain feature of the Topic in an impressive way. The metaphor often constitutes a hyperbolic expression intended to strike the addressee for its intensity.	<ul style="list-style-type: none"> <li>• But it struck with the speed of an attacking <b>snake</b>.</li> <li>• Four of the absentees suffered the <b>squirming</b> discomfort of being among the Welsh squad.</li> <li>• That girl is serious about giving it up, real serious, <b>heavy</b> serious!</li> </ul>
<i>Precision</i>	The intention is to express a single, specific feature of the Topic. In most cases, the author is recurring to figurative language to describe a peculiar emotion or sensation that would lose its specificity if paraphrased literally.	<ul style="list-style-type: none"> <li>• Relief surged through her like a physical <b>infusion</b> of new blood.</li> <li>• But the worst happens and you reel from it, you <b>stagger</b>, the shock is enormous, and then you begin to recover.</li> <li>• So and she was, she was <b>moaning</b> away like sort of oh we alright!</li> </ul>
<i>Artistic metaphor</i>	These metaphors are used to predicate at once a whole set of features of the Topic. These features need not to be all clearly determined in advance. Ultimately, the intention is to stimulate the receiver's creative interpretation.	<ul style="list-style-type: none"> <li>• To her, the long summer days had stretched ahead, <b>world</b> without end.</li> <li>• Amaldi dodged the American invitation, perhaps because (with Rome liberated) Fermi's <b>mantle</b> in physics had fallen on his young shoulders and there were younger minds to teach.</li> <li>• The summer's <b>sprawl</b> begins to be oppressive at this stage in the year and trigger fingers are itching to snip back overgrown mallows, clear out the mildewing foliage of golden rod and reduce the overpowering bulk of bullyboy ground cover.</li> </ul>
<i>Imageability</i>	The intention is to help the addressee to form a mental image of the Topic, to get an idea of how it looks like. Evoking a more concrete and common domain, the metaphoric expression boosts the audience's capacity for imagination.	<ul style="list-style-type: none"> <li>• Its conically-roofed tower, hugged about by a brood of smaller roofs shaped like candle <b>snuffers</b>, is visible for miles.</li> <li>• He strokes its side, which is white and marked with round patches of black, like <b>islands</b> on a naively drawn map.</li> <li>• They picked up power from a <b>spider</b>'s web of unsightly overhead wires.</li> </ul>

<i>Explanation</i>	These metaphors are used for didactic purposes. The intention is to explain a new or already familiar concept to the addressee.	<ul style="list-style-type: none"> <li>• Canals within the algae stand out as <b>rods</b> in this kind of preservation, which is common in Ordovician rocks.</li> <li>• Thus one can and must say, that each fight is the singularisation of all the circumstances of the social whole in movement and that by this singularisation, it <b>incarnates</b> the enveloping totalization which the historical process is.</li> <li>• The ego-identity of that person is <b>shaped</b> by these choices.</li> </ul>
<i>Heuristic reasoning</i>	The intention is to provide an interpretative model for a scientific theory, a work of art, etc. The metaphoric expression is used to organize the addressee's conceptualization of the Topic, based on their prior knowledge about another domain.	<ul style="list-style-type: none"> <li>• It is her body as the <b>canvas</b> her appearance as art.</li> <li>• It is as if it is walking through a <b>minefield</b>.</li> <li>• At the moment, history is made without being known (l'histoire se fait sans se connaître); history constitutes, we might say today, a political <b>unconscious</b>.</li> </ul>
<i>Humour</i>	The intention is to entertain the addressee, to be funny. Metaphoric language is exploited for its divertive effects, which would go missing in literal paraphrases.	<ul style="list-style-type: none"> <li>• Not sure of the music policy, but the name sounds like the <b>ingredients</b> of a takeaway from a less salubrious Chinese.</li> <li>• From there, like a <b>buzzard</b> in its eyrie, he would make forays round the US and abroad in spite of his advanced age.</li> <li>• It 's my life which is about to go down the <b>plughole</b>.</li> </ul>
<i>Social interaction</i>	These metaphors focus on interpersonal relations, group or cultural conventions and the like. The intention is to create or strengthen some bond between producer and receiver.	<ul style="list-style-type: none"> <li>• But I'm starting to think that everything's a turn-off for you, <b>doll</b>.</li> <li>• Smoking heroin (" <b>chasing</b> the dragon") was one feature of the upsurge.</li> <li>• Political correctness, just as we suspected, will be perfectly <b>grey</b>.</li> </ul>

## A.2 Example

Here below is one example annotated following the guidelines.

Allan Ahlberg says: "In the past, a lot of children's books seemed to be the work of talented illustrators whose pictures looked brilliant framed in a gallery, but when you tried to read the book, there was nothing there, because the words started as a **coat-hanger** to hang pictures on."<sup>1</sup>

**Step 1.** This sentence from a news fragment is about old children's books. The author highlights the characteristic of these books of focusing more on the quality of the illustrations, rather than on the narration. The words that make up the story are metaphorically compared to coat-hangers. The utterer invites us to think of the relation between the illustrations and the words as the one existing between a coat and a coat-hanger. The latter is just instrumental, it has no purpose or value in itself which is independent of the former. Through the metaphor, the author predicates these features of the words in the children's books. The same message could have been conveyed in a literal way, along the following lines: "the words had no value in themselves, they were just instrumental for the illustrations". Thus, the output of Step 1 is that the metaphor is *not Lexicalized* and we may move on to Step 2.

**Step 2.** The metaphoric expression is used in this case to explain the way in which illustrations and words are related in old children's books. The author invites the addressees to understand this relation in terms of the more familiar and concrete relation between coats and hangers. For this reason, the metaphor can be annotated as *Explanation*. It should be noted, however, that also other intentions seem to play a role. For instance, one might read a negative judgment of value in the author's remark. Thus, the annotation could also be *Persuasiveness* or *Argumentative metaphor*, depending on whether some rational justification is given by the utterer to support their judgment.

---

<sup>1</sup>The example is taken from a News text in the VUAMC (document id: all-fragment01; sentence id: 29).

# Bibliography

- G. E. M. Anscombe. *Intention*. Cambridge, Mass.: Harvard University Press, 1957.
- G. E. M. Anscombe. The intentionality of sensation: A grammatical feature. In Alva Nöe and Evan Thompson, editors, *Vision and Mind: Selected Readings in the Philosophy of Perception*, pages 55–75. The MIT Press, 1965. ISBN 9780262280716. doi: 10.7551/mitpress/7111.001.0001. URL <https://doi.org/10.7551/mitpress/7111.001.0001>.
- Aristotle. *Poetics*. The Project Gutenberg EBook of Poetics by Aristotle, 2008. URL <http://www.gutenberg.org/files/1974/1974-h/1974-h.htm>.
- Ron Artstein and Massimo Poesio. Survey article: Inter-coder agreement for computational linguistics. *Computational Linguistics*, 34(4):555–596, 2008. doi: 10.1162/coli.07-034-R2. URL <https://aclanthology.org/J08-4004>.
- Salvatore Attardo. *Humorous metaphors*, pages 91–110. 05 2015. ISBN 9783110346343. doi: 10.1515/9783110346343-005.
- Valérie Aucouturier. *Qu'est-ce que l'intentionnalité*. Chemins philosophiques. Vrin, 2012. ISBN 9782711624164.
- John Langshaw Austin. *How to Do Things with Words*. Oxford [Eng.]: Clarendon Press, 1962.
- Monroe C. Beardsley. *Aesthetics*. Harcourt, Brace and World, New York, 1958.
- Monroe C. Beardsley. The metaphorical twist. *Philosophy and Phenomenological Research*, 22(3):293 – 307, 1962.
- Anke Beger and Olaf Jäkel. The cognitive role of metaphor in teaching science: Examples from physics, chemistry, biology, psychology and philosophy. *Philosophical Inquiries*, 3:89–112, 03 2015.
- Beata Beigman Klebanov and Michael Flor. Argumentation-relevant metaphors in test-taker essays. In *Proceedings of the First Workshop on Metaphor in NLP*, pages 11–20, Atlanta, Georgia, June 2013. Association for Computational Linguistics. URL <https://aclanthology.org/W13-0902>.

- Max Black. Metaphor. *Proceedings of the Aristotelian Society*, 55(1):273–294, 1955. doi: 10.1093/aristotelian/55.1.273.
- Amber Boeynaems, Christian Burgers, Elly A. Konijn, and Gerard J. Steen. The effects of metaphorical framing on political persuasion: A systematic literature review. *Metaphor and Symbol*, 32(2):118–134, 2017. doi: 10.1080/10926488.2017.1297623.
- Bernd Bohnet. Top accuracy and fast dependency parsing is not a contradiction. In *Proceedings of the 23rd International Conference on Computational Linguistics (Coling 2010)*, pages 89–97, Beijing, China, August 2010. Coling 2010 Organizing Committee. URL <https://aclanthology.org/C10-1011>.
- Brian F. Bowdle and Dedre Gentner. The career of metaphor. *Psychological Review*, 112(1):193–216, 2005. doi: 10.1037/0033-295x.112.1.193.
- Franz Brentano. *Psychology from an Empirical Standpoint; second edition (originally published 1874); translated by Translated by Antos C.Rancurello, D.B.Terrell and Linda L.McAlister*. Routledge, 1995. ISBN 0203202880. URL <http://196.189.45.87/bitstream/123456789/17736/1/123.pdf>.
- George Aaron Broadwell, Umit Boz, Ignacio Cases, Tomek Strzalkowski, Laurie Feldman, Sarah Taylor, Samira Shaikh, Ting Liu, Kit Cho, and Nick Webb. Using imageability and topic chaining to locate metaphors in linguistic corpora. In Ariel M. Greenberg, William G. Kennedy, and Nathan D. Bos, editors, *Social Computing, Behavioral-Cultural Modeling and Prediction*, pages 102–110, Berlin, Heidelberg, 2013. Springer Berlin Heidelberg. ISBN 978-3-642-37210-0.
- Britta Brugman, Christian Burgers, and Gerard Steen. Recategorizing political frames: a systematic review of metaphorical framing in experiments on political communication. *Annals of the International Communication Association*, 41:1–17, 04 2017. doi: 10.1080/23808985.2017.1312481.
- Lynne Cameron. *Metaphor in educational discourse*. Advances in Applied Linguistics. Continuum, London, UK, 2003.
- Lynne Cameron and Alice Deignan. Combining large and small corpora to investigate tuning devices around metaphor in spoken discourse. *Metaphor and Symbol*, 18, 07 2003. doi: 10.1207/S15327868MS1803\_02.
- Jonathan Charteris-Black. *Corpus Approaches to Critical Metaphor Analysis*. Palgrave Macmillan UK, 2004. ISBN 9780230000612. URL <https://books.google.fr/books?id=A0WFDAAAQBAJ>.
- Jonathan Charteris-Black. Forensic deliberations on ‘purposeful metaphor’. *Metaphor and the Social World*, 2, 09 2012. doi: 10.1075/msw.2.1.01cha.

- A. Ciaramidaro, M. Adenzato, I. Enrici, S. Erk, L. Pia, B.G. Bara, and H. Walter. The intentional network: How the brain reads varieties of intentions. *Neuropsychologia*, 45(13):3105–3113, 2007. ISSN 0028-3932. doi: <https://doi.org/10.1016/j.neuropsychologia.2007.05.011>. URL <https://www.sciencedirect.com/science/article/pii/S0028393207002035>.
- Ted Cohen. Metaphor and the cultivation of intimacy. *Critical Inquiry*, 5(1):3–12, 1978. ISSN 00931896, 15397858. URL <http://www.jstor.org/stable/1342974>.
- BNC Consortium. British national corpus, XML edition, 2007a. URL <http://hdl.handle.net/20.500.12024/2554>. Oxford Text Archive.
- BNC Consortium. British national corpus, baby edition, 2007b. URL <http://hdl.handle.net/20.500.12024/2553>. Oxford Text Archive.
- D.E. Cooper. *Metaphor*. Aristotelian Society series. Blackwell, 1986. ISBN 9780631171195. URL <https://books.google.fr/books?id=HCPIAAAACAAJ>.
- Tim Crane. Intentionality as the mark of the mental. *Royal Institute of Philosophy Supplements*, 43:229–251, 1998. doi: 10.1017/S1358246100004380.
- Donald Davidson. What metaphors mean. *Critical Inquiry*, 5(1):31 – 47, 1978.
- Sara Dellantonio, Claudio Mulatti, Luigi Pastore, and Remo Job. Measuring inconsistencies can lead you forward: Imageability and the x-ception theory. *Frontiers in Psychology*, Front. Psychol.(708):1–9, 07 2014. doi: 10.3389/fpsyg.2014.00708.
- Erik-Lân Do Dinh, Hannah Wieland, and Iryna Gurevych. Weeding out conventionalized metaphors: A corpus of novel metaphor annotations. In *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing*, pages 1412–1424, Brussels, Belgium, October–November 2018. Association for Computational Linguistics. doi: 10.18653/v1/D18-1171. URL <https://aclanthology.org/D18-1171>.
- Marta Dynel. Creative metaphor is a birthday cake: Metaphor as the source of humour. *Metaphorik.de*, 17, 01 2009.
- R. J. Fogelin. *Figuratively Speaking*. Yale University Press, 1988. ISBN 9780783745374. URL <https://books.google.it/books?id=VNpRtQAACAAJ>.
- Susan Fussell and Mallie Moss. Figurative language in emotional communication. pages 1–30, 08 1998.
- J. Espenson G. Lakoff and A. Schwartz. *The master metaphor list*. University of California at Berkeley, 1991.
- Andrew Gargett and John Barnden. Modeling the interaction between sensory and affective meanings for detecting metaphor. pages 21–30, 01 2015. doi: 10.3115/v1/W15-1403.

- Andrew Gargett, Josef Ruppenhofer, and John Barnden. Dimensions of metaphorical meaning. pages 166–173, 01 2014. doi: 10.3115/v1/W14-4721.
- J. Berenike Herrmann Anna Kaal Tina Krennmayr Gerard J. Steen, Aletta G. Dorst and Trijntje Pasma. *A Method for Linguistic Metaphor Identification: From MIP to MIPVU*. Converging evidence in language and communication research. John Benjamins Publishing Company, 2010. ISBN 9789027239037. URL <https://books.google.fr/books?id=1rc0-0XtnA0C>.
- Richard J. Gerrig and Raymond W. Jr Gibbs. Beyond the lexicon: Creativity in language production. *Metaphor and Symbolic Activity*, 3(3):1–19, 1988. doi: 10.1207/s15327868ms0301\_1. URL [https://doi.org/10.1207/s15327868ms0301\\_1](https://doi.org/10.1207/s15327868ms0301_1).
- Raymond W. Jr Gibbs. *The Poetics of Mind: Figurative Thought, Language, and Understanding*. The Poetics of Mind: Figurative Thought, Language, and Understanding. Cambridge University Press, 1994. ISBN 9780521429924. URL [https://books.google.fr/books?id=V\\_W8M9WOK8cC](https://books.google.fr/books?id=V_W8M9WOK8cC).
- Raymond W. Jr Gibbs. *Intentions in the Experience of Meaning*. Cambridge University Press, 1999. ISBN 9780521576307. URL <https://books.google.fr/books?id=FD1rVU4LtBgC>.
- Raymond W. Jr Gibbs. Are ‘deliberate’ metaphors really deliberate? a question of human consciousness and action. *Metaphor and the Social World*, 1(1): 26–52, 2011. doi: 10.1075/msw.1.1.03gib.
- Raymond W. Jr Gibbs. Does deliberate metaphor theory have a future? *Journal of Pragmatics*, 90:73–76, 2015.
- Raymond W. Jr Gibbs, Julia M. Kushner, and W. Rob Mills. Authorial intentions and metaphor comprehension. *Journal of Psycholinguistic Research*, 20(1):11–30, 1991.
- Gildea P. Bookin H. B. Glucksberg, S. On understanding nonliteral speech: Can people ignore metaphors? *Journal of Verbal Learning Verbal Behavior*, 21(1):85–98, 1982.
- Sam Glucksberg and Boaz Keysar. Understanding metaphorical comparisons: Beyond similarity. *Psychological Review*, 97:3–18, 01 1990. doi: 10.1037/0033-295X.97.1.3.
- A. Goatly. *The Language of Metaphors*. Routledge, 1 edition, 1997. URL <https://doi.org/10.4324/9780203210000>.
- H. Paul Grice. Meaning. *Philosophical Review*, 66(3):377–388, 1957. doi: 10.2307/2182440.
- H. Paul Grice. Logic and conversation. *Syntax and semantics 3: Speech acts, Cole et al.*, pages 41 – 58, 1975.

- Pragglejaz Group. Mip: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol*, (22):1—39, 2007.
- Michael Haugh and Kasia M. Jaszczolt. Speaker intentions and intentionality. In Keith Allan and Kasia Jaszczolt, editors, *Cambridge Handbook of Pragmatics*, pages 87–112. Cambridge University Press, 2012.
- M. B. Hesse. *Models and Analogies in Science*. Newman history and philosophy of science series. Ind., 1966. ISBN 9780268001827. URL <https://books.google.fr/books?id=mZM1AAAAIAAJ>.
- David Hills. Metaphor. In Edward N. Zalta and Uri Nodelman, editors, *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University, Fall 2022 edition, 2022.
- Edmund Husserl. Ideas pertaining to a pure phenomenology and to a phenomenological philosophy, first book "general introduction to pure phenomenology. In F. Kersten, editor, *Edmund Husserl Collected Works, Volume 2*. Martinus Nijhoff Publishers, 1913. ISBN 9024725038.
- Lima S. D. Carroll P. J. Inhoff, A. W. Contextual effects on metaphor comprehension in reading. *Memory Cognition*, 12(6):558–567, 1984.
- Arthur M. Jacobs and Annette Kinder. "the brain is the prisoner of thought": A machine-learning assisted quantitative narrative analysis of literary metaphors for use in neurocognitive poetics. *Metaphor and Symbol*, 32(3):139–160, 2017. doi: 10.1080/10926488.2017.1338015. URL <https://doi.org/10.1080/10926488.2017.1338015>.
- Katarzyna Jaszczolt. *Discourse, Beliefs and Intentions: Semantic Defaults and Propositional Attitude Ascription*. Current Research in the semantics/pragmatics interface. Elsevier, 1999. ISBN 9780080430607. URL <https://books.google.fr/books?id=qSBoQgAACAAJ>.
- Albert Katz, Allan Paivio, Marc Marschark, and Jim Clark. Norms for 204 literary and 260 nonliterary metaphors on 10 psychological dimensions. *Metaphor and Symbol - METAPHOR SYMB*, 3:191–214, 12 1988. doi: 10.1207/s15327868ms0304.1.
- Lynn Katz Fainsilber and Andrew Ortony. Metaphorical uses of language in the expression of emotions. *Metaphor and Symbol - METAPHOR SYMB*, 2: 239–250, 12 1987. doi: 10.1207/s15327868ms0204.2.
- Z. Kovecses. *Metaphor: A Practical Introduction*. Oxford University Press, 2010. ISBN 9780199705313. URL <https://books.google.fr/books?id=z1sm5XpRGYMC>.
- George Lakoff and Mark Johnson. *Metaphors we Live by*. University of Chicago Press, Chicago, 1980.

- Geoffrey N. Leech. *A Linguistic Guide to English Poetry*. English language. Longmans, 1969. URL <https://books.google.fr/books?id=BuYoYAAACAAJ>.
- Benjamin Libet. Unconscious cerebral initiative and the role of conscious will in voluntary action. *Behavioral and Brain Sciences*, 8(4):529–539, 1985. doi: 10.1017/S0140525X00044903.
- Graham Low. *Metaphor and education*, page 212–231. Cambridge Handbooks in Psychology. Cambridge University Press, 2008. doi: 10.1017/CBO9780511816802.014.
- W. G. Lycan. *Philosophy of Language: a contemporary introduction*. Routledge, 2000.
- Saif Mohammad, Ekaterina Shutova, and Peter Turney. Metaphor as a medium for emotion: An empirical study. In *Proceedings of the Fifth Joint Conference on Lexical and Computational Semantics*, pages 23–33, Berlin, Germany, August 2016. Association for Computational Linguistics. doi: 10.18653/v1/S16-2003. URL <https://aclanthology.org/S16-2003>.
- Richard Moran. Seeing and believing: Metaphor, image, and force. *Critical Inquiry*, 16(1):87 – 112, 1989.
- Andreas Musolff. *Metaphor and political discourse: Analogical reasoning in debates about Europe*. 01 2004. ISBN 978-1-349-51691-9. doi: 10.1057/9780230504516.
- Richard Nisbett and Timothy Wilson. Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84:231–259, 03 1977. doi: 10.1037/0033-295X.84.3.231.
- E. Oring. *Engaging Humor*. University of Illinois Press, 2003. ISBN 9780252027864. URL <https://books.google.fr/books?id=nGgA7SY1Uq4C>.
- Andrew Ortony. Why metaphors are necessary and not just nice1. *Educational Theory*, 25:45 – 53, 04 1975. doi: 10.1111/j.1741-5446.1975.tb00666.x.
- Andrew Ortony. Beyond literal similarity. *Psychological Review*, 86(3):161 – 180, 05 1979.
- Schallert D. L. Reynolds R. E. Antos S. J. Ortony, A. Interpreting metaphors and idioms: Some effects of context on comprehension. *Journal of Verbal Learning Verbal Behavior*, 17(4):465–477, 1978.
- Allan Paivio, John C. Yuille, and Stephen A. Madigan. Concreteness, imagery, and meaningfulness values for 925 nouns. *Journal of Experimental Psychology*, 76:1–25, 1968. doi: 10.1037/h0025327.

- Prisca Piccirilli and Sabine Schulte Im Walde. What drives the use of metaphorical language? negative insights from abstractness, affect, discourse coherence and contextualized word representations. In *Proceedings of the 11th Joint Conference on Lexical and Computational Semantics*, pages 299–310, Seattle, Washington, July 2022. Association for Computational Linguistics. doi: 10.18653/v1/2022.starsem-1.26. URL <https://aclanthology.org/2022.starsem-1.26>.
- S. Pinker. *The Stuff of Thought: Language as a Window Into Human Nature*. Business book summary. Viking, 2007. ISBN 9780670063277. URL <https://books.google.fr/books?id=jy1SITT9ZNUC>.
- Quintilian. *Institutio Oratoria*. Harvard University Press, 1921.
- Carina Rasse, Alexander Onysko, and Francesca M. M. Citron. Conceptual metaphors in poetry interpretation: a psycholinguistic approach. *Language and Cognition*, 12(2):310–342, 2020. doi: 10.1017/langcog.2019.47.
- François Recanati. On defining communicative intentions. *Mind and Language*, 1(3):213–41, 1986. doi: 10.1111/j.1468-0017.1986.tb00102.x.
- Gudrun Reijnierse, Christian Burgers, Tina Krennmayr, and Gerard Steen. Dmip: A method for identifying potentially deliberate metaphor in language use. *Corpus Pragmatics*, 2:129–147, 06 2018. doi: 10.1007/s41701-017-0026-7.
- I. A. Richards. *The Philosophy of Rhetoric*. Oxford University Press, 1936.
- Paul Ricœur. *La métaphore vive*. Éditions du seuil, 27, rue Jacob, Paris VIe, 1975.
- Richard M. Roberts and Roger J. Kreuz. Why do people use figurative language? *Psychological Science*, 5(3):159–163, 1994. doi: 10.1111/j.1467-9280.1994.tb00653.x.
- Eleanor Rosch. *Human categorization*. Academic Press, New York; London, 1977. URL <https://www.degruyter.com/database/COGBIB/entry/cogbib.10283/html>.
- John R. Searle. *Expression and Meaning: Studies in the Theory of Speech Acts*. Cambridge University Press, 1979.
- John R. Searle. *Intentionality: An Essay in the Philosophy of Mind*. Cambridge University Press, 1983. doi: 10.1017/CBO9781139173452.
- W. Shakespeare. *Romeo and Juliet*. Dover Publications, 1993.
- Ekaterina V. Shutova. *Computational approaches to figurative language*. 803. University of Cambridge Computer Laboratory, 15 JJ Thomson Avenue, Cambridge CB3 0FD, UK, 2011.

- J. A. Simpson and E. S. C. Weiner. *The Oxford English Dictionary*. Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, 2 edition, 1998.
- Jean-Luc Solère. Tension et intention. esquisse de l'histoire d'une notion. In Lambros Couloubaritsis and Antonin Mazzù, editors, *Questions sur l'Intentionnalité*, pages 59–124. 2007.
- P. Sopory and J. P. Dillard. The persuasive effects of metaphor: A meta-analysis. *Human Communication Research*, 28(3):382–419, 2002.
- D. Sperber and D. Wilson. *Relevance: Communication and Cognition*. Language and thought series. Harvard University Press, 1986. ISBN 9780674754768. URL <https://books.google.fr/books?id=1LkkQAAMAAJ>.
- Rand Spiro, Paul J. Feltovich, Richard Coulson, and Daniel Anderson. *Multiple analogies for complex concepts: Antidotes for analogy-induced misconception in advanced knowledge acquisition*, pages 498–530. 01 1989.
- Dorst A.G. Herrmann J.B. Kaal A.A. Krennmayr T. Pasma T. Steen, G.J. A method for linguistic metaphor identification. from mip to mipvu. 2010. URL <http://www.vismet.org/metcor/search/showPage.php?page=start>.
- Gerard Steen. The paradox of metaphor: Why we need a three-dimensional model of metaphor. *Metaphor and Symbol*, 23(1):213–241, 2008. doi: 10.1080/10926480802426753.
- Gerard Steen. The contemporary theory of metaphor - now new and improved! *Review of Cognitive Linguistics*, 9(1):26–64, 2011. URL <https://doi.org/10.1075/rcl.9.1.03ste>.
- Gerard Steen. Deliberate metaphor affords conscious metaphorical cognition. *Cognitive Semiotics*, 5(1-2):179–197, 2014. doi: doi:10.1515/cogsem.2013.5.12.179. URL <https://doi.org/10.1515/cogsem.2013.5.12.179>.
- Gerard Steen. Developing, testing and interpreting deliberate metaphor theory. *Journal of Pragmatics*, 2015.
- Gerard Steen. Deliberate metaphor theory: Basic assumptions, main tenets, urgent issues. *Intercultural Pragmatics*, 14(1):1–24, 2017.
- Paul Thibodeau. The function of metaphor framing, deliberate or otherwise, in a social world. *Metaphor and the Social World*, 7, 02 2017. doi: 10.1075/msw.7.2.06thi.
- A. Tversky. Features of similarity. *Psychological Review*, 84(4):327 – 352, 1977.
- L. van Poppel. The study of metaphor in argumentation theory. *Argumentation*, 35:177–208, 2021.

- Stephanie van Stee. Meta-analysis of the persuasive effects of metaphorical vs. literal messages. *Communication Studies*, 69:545–566, 10 2018. doi: 10.1080/10510974.2018.1457553.
- J. H. M. Wagemans. Analyzing metaphor in argumentative discourse. *Rivista Italiana Di Filosofia Del Linguaggio*, 2016.
- Michael Wilson and Informatics Division. Mrc psycholinguistic database: Machine usable dictionary, version 2.00. *Behav Res Methods*, 20:1–12, 06 1997. doi: 10.3758/BF03202594.
- Ludwig Wittgenstein. *Philosophical Investigations translated by G.E.M. Anscombe*. Blackwell Publishers Ltd, 108 Cowley Road, Oxford UK, 2 edition, 1958.