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Semantic analysis and frequency effects of conceptual metaphors of emotions in Latin. From a corpus-based approach to a dictionary of Latin metaphors

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Abstract: This article presents the main results of a corpus-based analysis of the metaphorical expression of emotions in Latin and a new resource specifically designed to facilitate such large-scale study of conceptual metaphors, the *Lexicon Translativum Latinum*. The first part of the paper provides quantitative and qualitative evidence about the types of metaphors used by Roman writers to express four basic emotions: fear, anger, love, and hate. Our research takes a corpus-based and target-oriented approach, analyzing all occurrences of the main lexemes denoting these emotions in Latin texts dating between the third century BCE and the second century CE. The results demonstrate the highly embodied nature of the metaphors used by Latin authors to make sense of (and express linguistically) their experiences of fear, anger, love, and hate. Moreover, the differences in the usage of the metaphorical patterns across the four semantic fields, in terms of type and frequency, correlate with the different physiological reactions provoked by the four emotions we examined. In the second part of the paper, we present the *Lexicon Translativum Latinum*, an open-access, digital dictionary of Latin metaphors, currently under development. It facilitates large-scale analyses of highly conventionalized metaphoric patterns that organize meanings throughout Latin, at the same time allowing the kinds of relations that subsist between different types of metaphors to be captured and encoded in machine-readable formats.

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1 Introduction

This paper¹ provides a corpus-based analysis of conceptual metaphors documented in Latin for the expression of four basic emotions, namely fear, anger, love, and hate. It also presents the *Lexicon Translaticium Latinum*, an open-access online dictionary of Latin metaphors, aimed at facilitating inquiries such as the study of emotions we present in this paper.

Drawing on a large corpus of literary texts written between the third century BCE and the second century CE, the first part of this paper illustrates the most frequent metaphorical mappings relied upon by Latin authors for the expression of fear, anger, love, and hate. It accounts for differences in their semantic categorization, including quantitative aspects relating to their relative frequency. This study originates from a broader research project² aimed at exploring the embodied basis of Latin figurative emotion language and at understanding how these ancient speakers ‘made sense’ of their bodily experience to express quintessentially abstract concepts such as feelings and emotions.

The second part of the paper describes the development of collaborative open-access digital tools, which will permit scholars to scale up the approach we have adopted. Although cognitive semantics is gaining momentum in the field of Greco-Roman studies (see Short 2016; Short and Mocciaro 2019), they still suffer from limitations of available infrastructure and from a fragmentation of the work conducted to date. In particular, we present the idea (and the prototype) of the *Lexicon Translaticium Latinum*, an online, extensible, open-access dictionary of metaphors resulting from a collaborative international Digital Humanities initiative.³

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2 “The Lexicon of Embodied Experience in Latin” is a two-year project (2019–2021) financed by the University of Genova within a “Curiosity Driven” funding call for researchers aged under 40 (<https://lexelat.unige.it>).

3 The project is directed by William M. Short at the University of Exeter and aims to create a comprehensive lexico-semantic database of the Latin language (<https://latinwordnet.exeter.ac.uk/lexicon>).

2 Theoretical framework

Expressing his views on *amor vitae*, Seneca writes in one of his letters:

(1) (SEN. *epist.* 26, 10)

Una est catena, quae nos alligatos tenet, amor vitae, qui ut non est abiciendus, ita minuendus est, ut si quando res exiget, nihil nos detineat nec impedit, quo minus parati simus, quod quandoque faciendum est, statim facere

‘There is only one chain which binds us to life, and that is the love of life. The chain may not be cast off, but it may be rubbed away, so that, when necessity shall demand, nothing may retard or hinder us from being ready to do at once that which at some time we are bound to do’⁴

In the passage above (ex. [1]), Seneca projects the constitutive features of a chain over the concept of *amor vitae*. In doing so, the author expresses this immaterial concept figuratively in terms of a concrete object. Seneca exploits the constraints the chain imposes on the body to express how, when, and to what point *amor vitae* binds us to life. Such a striking image might be interpreted as a particularly felicitous instance of Seneca’s own literary imagination: an ingenious way he contrived to convey his thoughts about *amor vitae* in a vivid and vigorous way to his readers. However, as striking as its usage is here, the image of love as a chain occurs as many as 29 times in Latin literature. Seneca’s usage is thus fitting and expressive given the particular context, but it depends ultimately on an apparently highly conventionalized way of expressing (various forms of) love in concrete terms of a ‘chain’.

Figurative images of this kind may actually be all-pervasive in a language. Recognizing the ubiquitous character of such metaphorical patterns in language, Lakoff and Johnson (1980) argued that the frequent clustering of metaphorical linguistic expressions around abstract, intellectual or otherwise intangible concepts in fact reflects the inherently metaphorical workings of cognition itself. People talk about most abstract concepts metaphorically because they actually conceive of them metaphorically in terms of other (usually more concrete) concepts. According to this view, metaphors are defined as the projections of conceptual structure and content from one domain to another. Cognitive linguists claim, moreover, that it is the systematic nature of metaphors that allows people to think and reason (and therefore also to speak) meaningfully about experiences

⁴ The text of the Latin examples is taken from *The Loeb Classical Library* series (with the exception of examples [2] and [35], taken from the *Bibliotheca Teubneriana Latina*); translations are those of the Loeb editions, with possible minor changes.

that may be difficult to comprehend in and of themselves. In other words, we use our knowledge of a ‘source’ conceptual domain to comprehend a ‘target’ domain in a structured fashion. This means that in examples like that of ‘the chain of love’, Latin speakers systematically ‘map’ what they know about physical objects and their properties onto feelings and emotions, which are thus thought to have the same set of attributes as objects (they can be ‘hard’, ‘resistant’, can be manipulated or not, shaken off or not, and so on).

On these grounds, metaphor may be considered as a key organizing principle of human conceptual systems, and as a part of the more general phenomenon of ‘embodiment’. As the so-called ‘second wave’ cognitive sciences⁵ in general and cognitive linguists in particular have demonstrated, much of people’s thought and speech is contingent upon conceptual structures and cognitive processes that emerge from interactions among the brain, the body, and the world (see, e.g., Talmy [2000] and Geeraerts and Cuyckens [2010]). Our abstract cognition is deeply rooted in our bodies and in the schemas that emerge from their experience of the environment (whence the term of ‘embodiment’).

This framework, and especially cognitive metaphor theory, provides us with a key to reappraising the lexicon of Latin. A considerable body of evidence already demonstrates that metaphor produces wide-ranging effects in Latin’s semantic system, delivering meaning in some of the most humanly fundamental as well as culturally salient domains. For instance, Bettini (1991) has shown that Latin speakers’ conceptualization of time was underpinned by a horizontal metaphor according to which temporal sequencing is construed as linear movement along a horizontal axis, ‘before’ and ‘after’; and, at the same time, by a vertical metaphor in which the order of time is plotted along a vertical axis and temporal progression is conceived in terms of ‘above’ and ‘below’, ‘high’ and ‘low’. Likewise, Short (2012a, 2012b, 2013a) has argued that mental activity, communication, and conversation were conceptual domains structured almost exclusively through metaphor in Latin, and Buccheri’s (2016) study of Latin kinship terms reveals that Roman society probably could not conceive of kin relations without recourse to metaphorical terms.

By contrast, other abstract concepts have been less investigated and deserve to be explored in more detail. One case is the broad domain of emotions, abstract concepts *par excellence*, which can be known only through introspection, and

⁵ Differing from traditional ‘first generation’ cognitive science, which viewed cognition largely in information-processing terms as abstract symbol manipulation – a view that has been dubbed the MIND-AS-COMPUTER metaphor –, the ‘second generation’ cognitive sciences emphasize mental processes as embodied, embedded, enacted, and extended (generally grouped as ‘4E theory’): see esp. Rowlands (2010) and Gallagher (2005).

which tends to be interpreted metaphorically in terms of more concrete and accessible concepts. Although some recent research has highlighted recurrent metaphorical patterns that help build a conceptual bridge between spatial orientations and emotions, for instance (see Fedriani 2016), more work needs to be done with respect to identifying the metaphorical mechanisms that structure Latin's emotional semantic system in a comprehensive fashion. In particular, we are interested in unveiling conceptual metaphors that can be explained as part of our 'embodied' understanding of the world.

What exactly these embodied metaphors are and how they intervene in Latin's emotion vocabulary remains, on the whole, unexplored. This research tries to fill this gap, by aiming to identify conventionalized metaphoric and metonymic embodied patterns that organize meanings pervasively in the Latin language, as well as potential 'living' and creative figures.⁶ To do so, we have first carried out a large-scale corpus-based inquiry (documented in Section 3), and classified the resulting metaphors within a comprehensive ontology that reflects Latin speakers' presumable mental representations of basic emotion concepts. We provide a semantic description of the more recurrent mappings, also accounting for their varying distribution across different emotions (Section 4). After a brief overview of the general results, we limit ourselves to the most frequent metaphors documented for the four basic emotions of fear, anger, love, and hate, and show that the embodied conceptualization of these emotions varies considerably, not only in terms of 'preferred' metaphors, but also in relation to the *type* and *degree of interaction* they imply with regard to the experiencer's body (Sections 4.1–4.4). Finally, we hint at the future of our line of inquiry and present a digital humanities project aimed at generalizing its results, the *Lexicon Translaticium Latinum* (Section 5), and draw some general conclusions (Section 6).

3 Corpus and methodology

As foreshadowed in Section 1, the analysis presented in this study is corpus-based and draws on the *Antiquitas* section of the *Bibliotheca Teubneriana Latina*, which comprises over 1,140 works by nearly 600 authors spread over five centuries, from Early Latin (ca. 240 BCE – ca. 90 BCE) to Classical (ca. 90 BCE – 14 CE) and

⁶ Although the primary goal of the research was to identify conceptual metaphors recurrently building bridges between abstract and concrete concepts in the mind of Latin speakers, and as such conventional and embedded in the language, a systematic corpus-based inquiry also allows detecting 'one-shot images', original and creative associations shaped by individual writers, which are found above all in poetry and drama.

Postclassical Latin (14 CE – ca. 200 CE; this periodization of the Latin language and literature is drawn from Cuzzolin and Haverling [2009: 20]), totaling 5.7 million words. Some advantages of a corpus-driven approach to metaphors are that it allows us to deal with a very large amount of data; to substantiate the analysis with quantitative details; and to avoid generalizations based on personal introspection (see Deignan 2005).

To identify experiential metaphors in this corpus we adopted a keyword-based and target-oriented methodology. A study that is keyword-based allows the researcher to retrieve all attestations of the ‘best exemplar’ lexeme in a given data set, while target-oriented research guarantees exhaustive description of the metaphorical mappings associated with particular target domain items in a data source (Stefanowitsch 2006).

Accordingly, we have extracted from the corpus all occurrences of the main lexemes expressing the four basic emotions considered in this study, namely *formido*, *metus*, *pavor*, *terror*, *horror*, *timor*, *odium*, *amor*, *caritas*, *ira*, *iracundia*, *furia* and *furor* – a total of 12,434 tokens. We have then examined each context and distinguished between literal and metaphorical uses. Our analysis has thus been devoted to metaphorical contexts only, namely 3,742 out of 12,434 (30%).⁷ Following a bottom-up approach, we have then identified the metaphorical schema underlying each of the 3,742 metaphorical contexts involving the lexemes under scrutiny, and labeled it through the formula that is traditionally employed in cognitive linguistic studies, namely ‘X is Y’.

Once the classification of all metaphorical contexts was completed, we analyzed the semantic relations holding among the different mappings we identified (for instance, *ANGER IS A SUBSTANCE* is a superordinate schema with respect to the more specific mapping *ANGER IS A POTION*). We then built an ontology that accounts for such structured relations of semantic entailment, which is presented in the next section.

4 Results: a corpus-based approach to emotion metaphors

As a result of our annotation, we identified 101 distinct metaphors used to express the four emotions under consideration. We arranged metaphors in an ontology according to the semantic type of their source concepts. This ontology gives an

⁷ More precisely, 30.1%. To improve readability, we have excluded decimals from the figures we present in the paper.

account of the difference between metaphors in terms of semantic scope as well as of the semantic relations that connect them (some metaphors, such as AN EMOTION IS A CONCRETE ENTITY, which constitutes the top level of our ontology, are more general with respect to others). As Figure 1 shows, there emerge two main strategies to conceptualize emotions in an embodied metaphorical way: via *reification*, when emotions are figuratively understood in terms of concrete things with which the experiencer interacts in various ways, and via *personification*, when they are projected onto living (usually, but not always, human) beings.

The metaphors reported in Figure 1 represent macro-categories, and subsume, in turn, more specific metaphoric sub-schemas.⁸ Since in the present context we cannot provide a detailed account of all the metaphoric patterns we have identified, we present in a synoptic mosaic chart⁹ (Figure 2) the most frequent macro-schemas emerging for the expression of each emotion.

As the chart shows, the most frequent metaphorical macro-schemas documented in our corpus for the conceptualization of the four basic emotions

Figure 1: The main macro-schemas emerging from analysis of the metaphoric expression of anger, fear, love, and hate in Latin.

⁸ From a methodological point of view (cf. Section 3), we always annotated the most specific metaphorical schemas identifiable from the context (those at the lowest levels of our ontology), resorting to the most general schemas (such as CONCRETE ENTITY), only when a more specific annotation was not possible.

⁹ A mosaic chart essentially combines in one single view a 100% stacked column chart (within each column, the height of the rectangles represents the proportion of the number of metaphors pertaining to a given macro-schema over the total number of metaphors annotated for a specific emotion domain) and a 100% stacked bar chart (the width of each column is proportional to the total value of the column with respect to the total number of metaphors annotated).

Figure 2: Mosaic chart representing the most frequent metaphoric macro-schemas annotated for the four emotional domains (totals are displayed at the top of each column). Macro-schemas attested less than 10% over the total number of metaphors annotated for a single domain are merged into the ‘Other’ category.

under scrutiny are AN EMOTION IS AN OPPONENT for the expression of anger, AN EMOTION IS A SUBSTANCE for the expression of fear, AN EMOTION IS A LIVING BEING for the expression of love, and AN EMOTION IS AN OBJECT for the expression of hate. In what follows, we will describe and discuss in more detail these metaphors and suggest a possible account of the differences emerging among the four domains. Such discrepancies can tell us something about the way in which the ancient Roman speakers perceived, interpreted and categorized anger, fear, love and hate – and the conceptual distance between them – in the understanding of their emotional world.

4.1 Anger as an OPPONENT

The metaphor AN EMOTION IS AN OPPONENT constitutes, overall, the most frequent macro-schema emerging from our analysis, occurring 716 times. It is attested not only for negative emotions, that is, for anger, fear and hate, but also for love. This is hardly surprising, since all kinds of emotions are difficult (if not, in some cases, impossible) to control: they arise involuntarily, elude rational thinking and, for this reason, are often contrasted by those who experience them. Love is not an exception: one of the most common tropes in elegiac poetry (found also in other genres, such as epic, comedy, tragedy) is that of *militia amoris*, which consists in the conceptualization of the experience of love (or a love affair, or people engaged in it) in military terms (ex. [2]):

- (2) (PROP. 2, 8, 8)

vinceris aut vincis, haec in amore rota est

‘You are conquered, or you conquer: so turns the wheel of Luck in love’

Although this metaphoric pattern is attested, more or less frequently, for all the emotions analyzed in this study, it is interesting to note that it is the predominant mapping only for the conceptualization of anger (cf. Figure 2). On closer examination, the examples extracted from texts reveal many metaphoric sub-schemas that instantiate, at a more fine-grained level of semantic specificity, this metaphorical mapping. The most frequently attested sub-schema is ANGER IS AN OPPONENT IN A BATTLE, which emerges when the emotion is conceived as a strong and combative enemy armed with weapons (ex. [3]), an assailant (ex. [4]) who can be resisted (ex. [5]) and can even be defeated (ex. [6]), but in most cases overpowers the experiencer (ex. [7]):

- (3) (STAT. *Theb.* 11, 122)

*vidimus **armiferos**, quo fas erat usque, furores*

‘We have seen fury of arms carried to the limits of the lawful’

- (4) (SEN. *de ira* 1, 1, 6)

*Nullum est animal tam horrendum tam perniciosumque natura, ut non appareat in illo, simul ira **invasit**, novae feritatis accessio*

‘No animal is so hateful and so deadly by nature as not to show a fresh access of fierceness as soon as it is assailed by anger’

- (5) (CIC. *ad Q. fr.* 1, 1, 38)

*ut te ante compares cottidieque meditere **resistendum esse** iracundiae*

‘That you prepare yourself in advance and make a daily resolve to fend off anger’

- (6) (PVBLIL. *sent.* I, 22)

*Iracundiam qui **vincit**, **hostem superat maximum***

‘Who quells his wrath overcomes the mightiest foe’

- (7) (SEN. *contr.* 10, 3, 16)

*non est quod putes illam **cecidisse** irae patris*

‘Don’t imagine she fell victim to her father’s anger’

Other metaphoric schemas subsumed under the OPPONENT category are less closely linked to a war scenario, but always rely on the conceptualization of anger as a human being who acts violently against and harms the experiencer. More specifically, anger may be conceptualized in terms of an OPPONENT WHO SHAKES and

aggressively agitates the experiencer (ex. [8]), an OPPONENT WHO SEIZES AND HOLDS him firmly (ex. [9]), an OPPONENT WHO INJURES him (ex. [10]):

- (8) (CIC. *Att.* 10, 4, 6)
*Nunc sive iracundia sive dolore sive metu **permotus** gravius scripsi*
 ‘If anger or sorrow or apprehension pushed me to write more sternly’
- (9) (SIL. IT. *Pun.* 14, 299)
*par omnes simul ira **rapit**; certantque ruuntque*
 ‘The same ardor carried all his men along; they vied with one another in activity’
- (10) (SEN. *de ira* 1, 2, 2)
*alium ira in cubili suo **confodit**, alium intra sacra mensae iura **percussit***
 ‘Anger stabbed this one in his bed, struck down this one amid the sanctities of the feast’

The strong presence of metaphors related to a conflict scenario, and in particular to warfare, may be explained by considering the effects that this emotion causes in those who experience it. Anger increases aggression, recklessness, it leads to abuse of others and in its most intense manifestations leads to violence or even homicidal fury. All these behaviors find their natural setting in the battlefield, a context in which anger may be even considered as a useful and desirable quality. In war, anger fully displays its adaptive function, causing those physiological (and psychological) reactions that prepare the warrior to attack his opponents (typical responses, such as increased blood pressure and vascular resistance, and heart rate acceleration, have proved to be important in elevating pain thresholds, supporting muscular tension, also increasing alertness, vigilance and preparedness to react; Stemmler 2010). Indeed, Latin epic poetry generally presents anger and rage (together with *virtus*) as essential qualities of warriors, which become necessary when they have to fight and overwhelm enemies in battle (cf. Braund and Gilbert [2003], and references therein). The same is true also for Greek epic poetry:¹⁰ it is significant, in this respect, that the first word of the first verse of *Iliad* is μῆνιν ‘wrath’ (*iram* being the first word in the *Ilias Latina* as well). Another metaphor clearly related to warfare occurs when anger is metaphorically conceptualized as a destructive weapon that can be wielded against enemies. The ANGER IS A WEAPON metaphor occurs 15 times in our corpus (ex. 11):

¹⁰ Cf. Braund and Most (2003), in particular chapters 1, 2, 9, 11.

- (11) (SEN. *Med.* 51–52)¹¹

accingere ira, teque in exitium para / furore toto

‘Gird yourself up with anger, prepare to wreak destruction with full rage’

However, even if experiencing anger on the battlefield may serve an adaptive function (provided it is not excessive and does not go beyond boundaries: cf. Braund and Gilbert [2003: 278–280]), in civil life this emotion can lead to violent and aggressive behaviors that are socially condemned. Anger, especially when uncontrolled, completely distorts the experiencer’s thoughts and clouds his ability to make use of rationality, thus undermining the very basis of civil society. Since angry people lose control of their own actions, anger may be conceptualized as an assailant (cf. ex. [4]) who completely possesses the experiencer’s body and mind, annihilates his will and judgment, and even controls his movements. Consistently with this view, Latin literature provides several examples of men and women who follow anger as a LEADER (32 occurrences), unaware of where it will lead them, unable (or unwilling) to resist its driving force. Among the many examples, Medea ‘followed’ her desire to exact revenge on Jason as far as to commit heinous crimes, killing her own children (ex. [12]), and Deianira¹² was ‘led’ by her furious jealousy to kill, even if accidentally, her unfaithful husband Heracles (ex. [13]):

- (12) (SEN. *Med.* 953)

Ira, qua ducis, sequor

‘Anger, where you lead, I follow’

- (13) (OV. *epist.* 9, 145)

Ei mihi! Quid feci? Quo me furor egit amantem?

‘Alas me! What have I done? Whither has my furious rage driven me in my love?’

¹¹ Although Seneca resorts to this metaphor in tragedy, in his theoretical reflections on anger he fully rejects the vision of anger as a weapon (cf. Braund and Gilbert 2003: 284–285), stating that the only useful arm to men is reason (*de ira* 1, 17, 1–2): *Aristoteles ait affectus quosdam, si quis illis bene utatur, pro armis esse. Quod verum foret, si velut bellica instrumenta sumi deponique possent induentis arbitrio. Haec arma, quae Aristoteles virtuti dat, ipsa per se pugnant, non expectant manum, et habent, non habentur. Nil aliis instrumentis opus est, satis nos instruxit ratione natura* ‘Aristotle says that certain passions, if one makes a proper use of them, serve as arms. And this would be true if, like the implements of war, they could be put on and laid aside at the pleasure of the user. But these “arms” which Aristotle would grant to virtue fight under their own orders; they await no man’s gesture and are not possessed, but possess. Nature has given to us an adequate equipment in reason; we need no other implements’ (cf. also *de ira* 11, 7, 1 and 1, 9, 2).

¹² On angry women in the Greek literature and myths, see in particular Harris (2003).

4.2 SUBSTANCE as an embodied prototype of fear

The metaphorical mapping involving the projection of emotions into (generally liquid) substances is documented in 8% of cases for hate, 9% for love, and 12% for anger, with a frequency peak (27%) in the domain of fear, where it is the most frequent metaphor (cf. Figure 2). The predilection exhibited by Latin speakers to think and talk about fear in terms of a substance pervading the experiencer's body is a clear example of how conceptual schemas can be grounded in bodily experience. In our opinion, the 'radical' embodiment of fear basically rests on the fact that fear, terror and horror are usually accompanied by overt somatic reactions, the most typical being a decrease in body temperature, shivering or stiffening of the limbs, pallor, and cold sweat. The somatic symptomatology typically associated with fear is clearly illustrated by Lucretius in the third book of *De rerum natura*, a manifesto of embodiment *ante litteram*, pursuing the bodily nature of mind and spirit (*naturam animi corpoream esse*). In the excerpt given in (14), readapting the symptoms described by Sappho's most famous and imitated poem (fr. 31 V.), Lucretius portrays the reactions provoked by fear (*metu*) throughout the body (*per membra*): sweating (*sudores*), pallor (*pallorem*), and collapsing of the legs (*succidere artus*), among other things:

(14) (LVCR. 3, 152–162)

*verum ubi vementi magis est commota metu mens, / consentire animam
totam per membra videmus / **sudoresque ita palloremque** existere toto /
corpore et infringi linguam vocemque aboriri, / caligare oculos, sonere auris,
succidere artus, / denique concidere ex animi terrore videmus / saepe
homines [...] Haec eadem ratio **naturam animi atque animai /
corpoream docet esse***

'But when the intelligence is moved by more vehement fear, we see the whole spirit throughout the frame share in the feeling: sweatings and pallor hence arise over the whole body, the speech falters, the voice dies away, blackness comes before the eyes, a sounding is in the ears, the limbs give way beneath; in a word we often see men fall to the ground for mental terror [...] This same reasoning teaches that the nature of mind and spirit is bodily'

The Virgilian passage in (15) provides yet another piece of evidence for the bodily reactions associated with the psychological experience of horror and fear (*horror*, *formidine*), especially that of freezing: besides shaking of the limbs (*membra quatit*), Vergil mentions the perception of cold (*frigidus*) and the chilling of blood

(*gelidus sanguis*), caused in Aeneas by sight of blood trickling from a myrtle tree, a sign of Polydorus' metamorphosis.

(15) (VERG. *Aen.* 3, 29–30)

mihi frigidus horror / membra quatit, gelidusque coit formidine sanguis

'A cold shudder shakes my limbs, and my chilled blood freezes with terror'

This passage allows us to touch upon another relevant issue, namely that a number of fear words in Latin encode embodied metonymies at the level of etymology. The polysemy of *horror*, which expresses both the bodily sensation of 'trembling' and, metonymically, the emotional state of intense fear frequently associated with it, derives from *horreo*, which traces back to PIE **ǵʰrs-eh₁-* 'to be stiff, surprised' (de Vaan 2008: 290),¹³ thus suggesting a clear derivation of the abstract meaning of 'horror, terror' from the stiffness of the limbs (*freezing*) that can co-occur with dread. Other metonymies associated with fear at the level of etymology involve *pavor*, from *paveo*, the stative counterpart ('to be struck', and then 'to fear') of *pavio* 'to hit, strike' (de Vaan 2008: 451); and *terror*, from *terreo*, tracing back to PIE **tros-eie-* 'to make scared', from **tres-* 'to shiver, tremble' (LIV 650–651).¹⁴ Examples like these point out that analysis of etymological data can yield important clues as to which metaphorical mappings are historically significant in the semantic development of a language and, most importantly, which may still be well-entrenched in its semantic system (see Sweetser 1990). Specifically, the physiological etymologies mentioned above highlight the *conceptual relevance* of the somatic reactions of fear, whose lexical encapsulation gave rise to some recurrent semantic extensions.

Building on these premises, our point here is that direct perception of the physiological responses associated with fear had an impact on the way Latin speakers figuratively conceptualized it: as a concrete entity capable of a tangible interaction with their own body, which mostly manifests itself in terms of a liquid substance entering the experiencer limbs and guts (124 metaphorical attestations, corresponding to the 47% of the general schema FEAR IS A SUBSTANCE) and filling them up (52 cases, 20%; note, in particular, the frequent expressions *plenus* – and *vacuus* – plus a fear noun in the genitive, and the verbs *impleo* and *compleo*). Examples (16)–(20) illustrate this metaphor, whereby horror and fear are

¹³ De Vaan (2008: 290) also reports that the root **ǵʰrs-* may be an s-extended variant of PIE **ǵʰr-* ('to stick out, be excited'), which is found in *horior*.

¹⁴ More specifically, LIV (650–651) reconstructs for *terreo* the phonetic development **tros-eie-* > (post-)Pit. **tṛseje-* > Sab. **tors-eje-*, Lat. **terseje-* (see also de Vaan 2008: 617).

conceived as liquids pervading and imbuing the experiencer's body; note also the recurrent co-occurrence of freezing symptoms, as in ex. (18).¹⁵

- (16) (CIC. *Att.* 9, 10, 2)
*Vidi hominem XIII Kal. Febr. **plenum** formidinis*
 'I saw him on 17 January, full of fear'
- (17) (CIC. *Phil.* 1, 25)
Paratos habemus qui intercedant, paratos qui rem publicam religione
*defendant: **vacui** metu **esse debemus***
 'There they are, ready to use their veto, ready to defend the Republic by the sanctity of their office. We should be free from fear'
- (18) (PETR. *Carm.* 35, 3–4)
*nec desinit ante / frigidus adstrictis qui **regnat in ossibus** horror*
 'There is no end to the sick dread which racks your shaking bones'
- (19) (HOR. *epist.* 1, 6, 3)
*Hunc solem et stellas [...] sunt qui **formidine nulla / imbuti** spectent*
 'Some men can gaze the sun and the stars without being imbued in some kind of fear'
- (20) (LIV. 10, 14, 20)
*errorque [...] formidinisque Samnites **implevit***
 'And this mistake filled the Samnites with fear'

This metaphorical process of liquid infiltration is enriched by the alternative image of fear being sprayed and scattered over the experiencer's body (ex. [21], [22]):

- (21) (CIC. *Att.* 8, 6, 3)
*Di immortales, qui **me** horror **perfudit!***
 'Gods above, what dread is poured onto me!'

¹⁵ This raises the interesting question of the relationship between the embodied nature of the linguistic expressions of fear in Latin, the somatic reactions usually associated with this emotion, and the importance of the bodily humors in the Greco-Roman understanding of the body (see e.g. Onians [1951], esp. 61–65, on fluids 'entering' the body and altering its cognitive functions; see Fedriani [2020] on the influence played on the hippocratic and Aristotelian vision of humors on the ANGER IS A HOT FLUID metaphor in Latin). The intricate problem of how emotions may correlate both with physiological facts and local understandings of the body exceeds the scope of this paper: on this question, see Lloyd (2007: 59–85).

- (22) (TAC. *ann.* 4, 18, 1)
quanto maiore mole procideret, plus formidinis in alios dispersebatur
 ‘The greater ruin of his fall must scatter a wider alarm among others’

4.3 Personifications of love

To express love, Roman writers mostly resorted to metaphors in which the emotion is conceptualized in terms of a living being, in most cases a person, who does not necessarily harm the experiencer (as happens for the *OPPONENT* mapping discussed in Section 4.1). If we take a closer look at the metaphoric patterns that are subsumed under the *LIVING BEING* macro-schema, many vivid characterizations of love emerge that are well worth discussing. In particular, love as a *LIVING BEING* may be described in terms of a *WINGED* (ex. [23]–[24]) or *BLIND* (ex. [25]) creature:

- (23) (LVCR. 5, 1074–1075)
inter equas ubi equus florenti aetate iuventus / pinnigeri saevit calcaribus ictus amoris
 ‘When amidst the mares a young stallion in the flower of his age runs wild, struck with the spurs of winged Love’
- (24) (PROP. 2, 24c, 21–22)
Me modo laudabas et carmina nostra legebas: / ille tuus pennas tam cito vertit amor?
 ‘Just now you praised me and read my poems: has your love so quickly turned its wings elsewhere?’
- (25) (SEN. *de v. b.* 14, 2)
Evenit autem hoc nimia intemperantia et amore caeco rei
 ‘But this results from a complete lack of self-control and blind love for an object’

Interestingly, the *LOVE IS WINGED* and *LOVE IS BLIND* metaphors are attested (nine and eight times, respectively) almost exclusively for the expression of this emotion, and especially in poetry (the only exception is reported in ex. [25]). The literary characterization of love in terms of a winged being is perhaps inextricably connected to representations – well attested in the Greco-Roman world – of Eros / Cupid as a winged child (usually armed with arrows and bow),¹⁶ who

¹⁶ This is the reason why we chose to consider these metaphors as instantiations of the *LIVING BEING*, rather than the more specific *ANIMAL*, macro-schema. For an analysis of Eros’ arrows as a conceptual blend expressing the idea of *FALLING IN LOVE*, see Pagán Cánovas (2011).

iconographically captures the fickle instability of love affairs. However, this representation of love also has a positive implication, since, as a winged creature, its realm is the sky, and height is usually associated with positive concepts such as happiness (cf. the metaphor BEING HAPPY IS BEING OFF THE GROUND, discussed in Kövecses [1991: 30–32]).

By contrast, the attribute of blindness never appears in the iconography of Eros / Cupid in Greek and Roman art (Panofsky 1972: 95–98).¹⁷ Therefore, the blindness attributed to love in literary texts is not associated with any allegoric representation of the emotion. Rather, it clearly acquires, in the metaphoric interpretation, a cognitive meaning: those who fall in love become blind-minded, since they are no longer able to behave in a rational way (cf. *furit*, in ex. [26]).¹⁸

(26) (OV. *fast.* 2, 761–762)

Interea iuvenis furiales regius ignes / concipit et caeco raptus amore furit
 ‘Meantime the royal youth caught fire and fury, and transported by blind love he raved’

Such metaphors are highly embodied, since they reflect a conceptualization of love as causing a strong physical impairment, by altering a vital function, such as sight. It is not difficult to understand the cognitive meaning attributed to blindness and motivating its figurative development, considering that our physical ability to see is primarily aimed at controlling our actions and at guiding the way we interact with, and thus make sense of, the world around us (therefore UNDERSTANDING IS SEEING; cf. Lakoff and Johnson 1980: 48, 103–104; Sweetser 1990: 37–40). The fact that metaphors whose source domain relies on the concept of blindness are, in our research, almost exclusively found for the expression of love, suggests that even if all emotions may alter the experiencer’s ability to control his own actions and to behave rationally (cf. especially Section 4.1 on anger), the loss of control is probably a particularly salient component of the experience and the conceptualization of love. Indeed, the metaphors LOVE IS INSANITY (cf. Lakoff and Johnson 1980: 49, 115–116; Kövecses 1986: 91–92) and LOVE IS AN INSANE PERSON, whose roots are grounded in a conceptualization of love in which the experiencer’s loss of control over passion is taken to the extreme, leading to madness, were found 15 times in

¹⁷ However, from the Late Middle Ages on, the image of Love as a blindfolded child spread not only in art, but also in literature (as in Helena’s famous commentary on the irrational nature of love in Shakespeare’s *Midsummer Night’s Dream*, act 1, scene 1: “Love looks not with the eyes, but with the mind / And therefore is wing’d Cupid painted blind”).

¹⁸ Kövecses comments on similar metaphors in English, resorting to the concept of INTERFERENCE WITH ACCURATE PERCEPTION: “a person in love is indeed not able to function normally” (Kövecses 1986: 87).

our research (ex. [27]) and, again, almost without any parallel in other emotional domains:¹⁹

(27) (PROP. 2, 14, 17–18)

*Ante pedes caecis lucebat semita nobis: / scilicet **insano nemo** in amore videt*

‘The path shone bright before my feet, but I was blind; of course no one uses his eyes when he is madly in love’

Significantly, these verses from Propertius’s elegy reflect the inextricable combination between the *caecitas* of the lover, whose *physical ability* to see is impeded by love (*nemo in amore videt*), and his *mental inability* to think rationally, that is, his insanity (*insano ... amore*). In the background, we see the opposition RATIONAL VERSUS IRRATIONAL (another fundamental aspect for the study of emotional concepts, which we have not touched upon so far), expressed here metaphorically in terms of LIGHT VERSUS DARKNESS: irrational love clouds over the lover’s eyes (and mind), making him unable to see even what is brightly illuminated by daylight (*ante pedes ... semita lucebat*).

The central idea that lovers lose control of their actions (like a person suddenly deprived of his ability to see) also emerges from other metaphors attested for the expression of love. For instance, in 42 occurrences love is presented as a demanding MASTER²⁰ (ex. [28]) that rules over the experiencer, who in turn is completely under his control and owes him total obedience:

(28) (PLIN. *paneg.* 85, 3)

*Neque enim ut alia subiectis, ita amor **imperatur**, neque est ullus adfectus tam erectus et liber et **dominationis impatiens**, nec qui magis vices **exigat***

‘Love cannot be demanded of subjects, as other things can; there is no sentiment so lofty and independent, so impatient of tyranny, so uncompromising in its expectations of a return’

The MASTER metaphor is often attested for anger and fear as well, though it is far more frequent for the latter (30 and 65 occurrences, respectively). However, our corpus data reveal different framings of this metaphorical pattern, highlighting two distinct perspectives. On the one hand, the majority of occurrences of this metaphor for the expression of fear (97%) involve linguistic elements pertaining to the semantic domain of *liberation* (such as the verbs *libero* or *solvo*, or the adjective

¹⁹ The metaphor AN EMOTION IS AN INSANE PERSON is attested, two times, for the expression of anger as well (*amens ira* in SEN. *de ira* 3, 39, 2; *demens furor* in PROP. 1, 13, 19).

²⁰ Cf. the metaphoric mapping AN EMOTION IS A SOCIAL SUPERIOR discussed in Kövecses (2004: 37–38, 70–71).

liber, followed by the ablative case). Therefore, in fear metaphors the emotion is mostly conceptualized as a MASTER who has the right of ownership over the experiencer and, most importantly, the desire of liberation from this ‘slavery’ (to which both *liber / libero* and *solvo* are usually referred) is of greatest relevance (ex. [29]):

- (29) (CIC. *Deiot.* 39)
oportet [...] nec accidere ut quisquam te timere incipiat eorum, qui sint semel a te liberati timore
 ‘It is not right that any should begin to fear you of those whom you have once for all freed from fear’

On the other hand, anger and love metaphors reflect a different perspective relative to the emotion’s mastery, more often focused on the dominant role of the emotion, conceived as a MASTER who does not simply hold the experiencer in his possession, but also commands him and demands obedience from him (cf. ex. [28]). The state of being subject to emotion, rather than the prospect of liberation, thus seems to be much more salient for the expression of anger and love than for fear.

4.4 Hate as an OBJECT

When hate is metaphorically conceptualized in terms of a concrete object, it can be handled in a variety of ways: for example, it can be broken and moved (ex. [30]–[31]), and have tactile (ex. [32]) and visual properties (ex. [33]), and even taste (ex. [34]):

- (30) (QVINT. *inst.* 6, 3, 9)
ut cum odium iramque frequentissime frangat
 ‘As it frequently breaks down hatred and anger’
- (31) (SVET. *Caligula* 14, 3)
Artabanus Parthorum rex, odium semper contemptumque Tiberi prae se ferens
 ‘Artabanus, king of the Parthians, who always carried in front of him his hatred and contempt for Tiberius’
- (32) (CIC. *S. Rosc.* 52)
Odium igitur acerrimum patris in filium
 ‘So, this sharp hatred of the father against the son’

- (33) (HOR. *epist.* 1, 14, 37–38)
*quisquam [...] non odio **obscur**o morsuque venenat*
 ‘No one poisons them with the bite of obscure hate’

- (34) (CIC. *Mil.* 52)
*odium fuisse illius in hunc **acerbissim**um*
 ‘Clodius hated Milo bitterly’

Although all the emotions considered can be conceptualized as concrete objects, our study shows that hate in particular tends to be understood via this specific mapping. While love, anger and fear are conceptualized as objects between 12% and 16% of the total number of their metaphorical uses, hate is figuratively interpreted in this way in 29% of cases (cf. Figure 2). A question thus arising is: what is the motivation behind such a distribution? In our view, there are essentially two reasons, both inherently connected to the peculiar nature of hate.

Firstly, hate is a more psychological, and less physiological emotion, one that does not clearly correlate with any physical symptom (contrary to what happens with anger and fear, as we have seen). In other words, hate does not produce evident bodily reactions: to put it metaphorically, it does not ‘touch’ us so closely on a physical level. This is why this emotion tends to be conceived as an inanimate entity which is *external* to the human body and can only superficially interact with it: objects can be held and taken, for instance, but cannot enter into our body and fill it up, as substances do, and do not typically have a significant impact on us: generic objects do not harm, alter, or destroy living beings.

Secondly, hate is an intrinsically relational emotion, an intense hostility which is perceived as being directed *toward someone* – in opposition with fear, anger, or happiness, for instance, that can be provoked by a wider range of stimuli. This may explain why hate metaphors are significantly entrenched within the EXCHANGE schema, which is typically substantiated by a dyadic configuration of animate participants transferring HATE-AS-OBJECT from one to the other. This point is especially clear if we consider the sub-schemas HATE IS AN OBJECT THAT IS GIVEN (ex. [35]), TAKEN (ex. [36]) or HIDDEN (ex. [37]), or TRANSFERRED among participants (ex. [38]):

- (35) (PS. QVINT. *decl.* 15, 3)
*quisquis **odium dedit**, omnia post hoc facit, ne debeat amari*
 ‘Whoever has given hate does everything possible thereafter not to be loved’

- (36) (CIC. *Balb.* 27, 62)
*Sed si qui sunt, quibus infinitum sit **odium**, in quos semel **susceptum sit***
 ‘But if there be any who cherish eternal hatred against those whom they
 have hated [lit. have taken hatred] once’
- (37) (TAC. *ann.* 14, 56, 3)
*consuetudine exercitus **velare odium** fallacibus blanditiis*
 ‘Use had trained him to veil his hatred under insidious caresses’
- (38) (OV. *met.* 3, 256–259)
*sola Iovis coniunx [...] a Tyria conlectum paelice **transfert** / in generis
 socios **odium***
 ‘Jove’s wife alone had now transferred her hatred from her Tyrian rival to
 those who shared her blood’

The fact that hate is predominantly seen as an object being handled as an outward entity with regard to the experiencer’s body testifies to its less embodied nature. This conceptual status seems corroborated also by the fact that hate is only very rarely seen as something which can affect the experiencer, for instance as a wound or a disease (only 2 and 7 times, respectively, in all the texts scrutinized). Parallel to this, it is the emotion that is least frequently reified in terms of a substance entering the body. Within this mapping, one of the most frequent macro-schemas is that portraying hate as POISON (*potio* or *medicamentum*, 9 attestations): an image that is, however, limited almost exclusively to a specific declamation of Pseudo-Quintilian (*Decl.* 14), dedicated to a *meretrix* who slips an *odi potio* to a lover cast into poverty, and is therefore accused of *veneficium* (see Calboli 2010: 138–139).

In conclusion, hate was not understood as a highly ‘interactive’ emotion in Latin’s figurative system. Further evidence for this claim comes from the fact that, even when metaphorically conceptualized as a living being, it is portrayed as not substantially affecting the experiencer’s body. When hatred is personified, it does not come into contact with the experiencer and does not have a violent impact on him. To give an example, hate is conceptualized as an OPPONENT WHO SHAKES THE EXPERIENCER’S BODY only 12 times: fear triggers such an imaginative schema much more often (64 times), and then anger (50). Likewise, hate as a LIVING BEING seizes the experiencer only 15 times in Latin literature. But if we consider that love metaphorically does so in 58 cases, it is readily apparent that this conceptualization is less relevant for the emotion under scrutiny here. In this sense, hate contrasts with anger, most often perceived as an opponent violently attacking the experiencer (Section 4.1); and with fear, whose degree of ‘interaction’ with the experiencer is much higher, and which is predominantly conceptualized in terms of a substance insinuating itself into the body (Section 4.2).

5 Annotation of Latin metaphors in the *Lexicon Translaticium Latinum*

The case study we have presented suggests that metaphors are integral to the Latin lexicon of the emotions. Moreover, the analysis of the preferred source domains for different experiences allows us to point out subtle differences in the way Latin authors conceptualized them, e.g. attributing to them various degrees of agency, or different embodied qualities. The same holds true for other domains, as recent studies have demonstrated with reference to the conceptualization of intellectual life or that of the experience of time passing (Bettini 1991; Short 2012a, 2012b, 2013a).

However, large-scale metaphorical structures of the Latin lexicon are not at all easy to identify. Dictionaries of the Latin language adhere to a linear alphabetical ordering, and, at the level of lexical sense organization, emphasize generalized referential meaning (*valeur*) over contextual and figurative meaning, and chronological development over usage patterns.²¹ Thus, while doing a good job of documenting the range of historically attested senses and of cataloging subtle variations in meaning, they end up obscuring or even hiding patterns of meaning that work their effects across, and at different levels of, Latin's semantic system.²² For example, how could a dictionary point out that Statius' *armiferos ... furores* (our ex. [3] above), Publilius's idea of *iracundia* as a *hostis* (ex. [6]) and Seneca's depiction of *ira* as an assailant (the verb used is *invado*, ex. [4]) are three instances of the same metaphorical pattern? The combination of words used to express the concept of anger are different (*furor*, *iracundia*, *ira*) and so are the terms that express the idea of the assault (*armifer*, *hostis*, *invado*). The metaphor would not be part of any of the 'entries' for these words *per se*, and even if it were, how could a dictionary efficiently cross-reference all of them? Although each one of those expressions may have a different nuance, nevertheless it is crucial – in order to understand how Latin speakers go about constructing meaning for themselves and others, and in order to interpret texts correctly – to locate them all within the wider framework of the anger metaphors. In absence of a dictionary, this requires exactly the kind of bottom-up approach we have outlined. Multiple searches over Latin texts databases (for words such as *furor*, *ira*, *iracundia*, etc.) yield a mass of data; each passage has to be individually analyzed by the researcher. For those reasons, it is important that the results of analyses of the metaphorical layer of Latin's semantic

²¹ An overview of the history of Latin lexicography from antiquity to the twentieth century is provided by Krömer (1990). For a criticism of this model, see Wharton (2011).

²² Cf. Short (2013b: esp. 398–400).

system be stored in a way that makes them permanent, easy to access and reusable. They should also be cumulative, so that each new study builds on top of existing ones and adds to them, scaling up our knowledge and our capabilities of research.

With this goal in mind, we have conceived the idea of a Lexicon of Latin Metaphor, or *Lexicon Translaticium Latinum*. This is a collaborative international Digital Humanities project aimed at developing an online, extensible, open-access lexicon of metaphors in the Latin language. Rather than reproducing the format of dictionaries in print, this instrument will try to capture large-scale, deeply entrenched and highly conventionalized metaphoric and metonymic patterns that organize meanings pervasively throughout Latin.²³ In other words, it will be able to represent the phenomena we have been investigating in this paper. In joining the idea of open scholarship, we maintain that not only the results, but also the data itself of our own – and hopefully other scholars’ – corpus-based research may be conveniently stored in the *Lexicon*. In this way, we aim to produce a collaborative and incrementally useful tool. Here, we present the outline of the project, in the hope that fellow scholars consider contributing to the development of the *Lexicon* and other similar collaborative instruments.

Concretely, what is the *Lexicon Translaticium Latinum*? The prototype database we are using so far implements the technical design of the MetaNet Project, an electronic repository that contains records for hundreds of attested conventional and imaginative metaphors in English.²⁴ For instance, the metaphor ANGER IS FIRE that manifests itself in English expressions like *she was doing a slow burn* or *he was breathing fire*, is represented in the MetaNet as a record of key-and-value pairs with a general format where each field registers some theoretically relevant datum about the conceptual metaphor (Figure 3).

metaphor:	ANGER IS FIRE
level:	general
type:	composed, complex
experiential basis:	increase in skin temperature when angry
source frame:	FIRE
target frame:	ANGER
mappings:	FIRE → ANGER
	BURNING OBJECT → EXPERIENCER
	CAUSE OF FIRE → CAUSE OF ANGER
	INTENSITY OF FIRE → LEVEL OF ANGER

Figure 3: The ANGER IS FIRE metaphor in the MetaNet.

23 For a demo version of the *Lexicon* (which is currently under development), please consult <https://latinwordnet.exeter.ac.uk/lexicon>.

24 <https://metanet.icsi.berkeley.edu/metanet/>.

As the example shows, the MetaNet specification provides a set of high-level ontologies that define a framework for structuring metaphorical data. That is, it allows to represent metaphors as mappings from one conceptual domain to another, quite independently from their multiple instantiations in language. It also specifies relations among mappings and organizes them into larger structured systems. This enables the user of the MetaNet to understand the dense web of symbolic connections that exists in English between and among many different concepts as well as to explore the metaphorical networks structuring this language. (For example, following the links under ‘source frame’ and ‘target frame’, the user can discover other metaphors either where ‘fire’ is the source or where ‘anger’ is the target of mappings. Thus, they may learn the various ways in which ‘anger’ is metaphorically conceptualized in English or inquire about the ‘fire’ as an image for other aspects of experience and thought).

The metaphorical semantics of anger we have been exploring are captured in a similar manner in the prototype of the *Lexicon Translaticium Latinum*.

Figure 4 gives an example of an entry in the *Lexicon*, ANGER IS AN OPPONENT, discussed above. It is identified as ‘conventional’ in Latin, as opposed to being a literary creation used by one single author. It is also marked as ‘complex’, which means here that a structured portion of knowledge about ‘opponents’ and physical struggle is systematically used to think about ‘anger’ and the way it affects the human subject. The entry then gives the standard formulation ANGER IS AN OPPONENT, and breaks it down in terms of the concepts it comprises (the ‘source’ and ‘target’ fields: more on these below). Had it been the case, it would also have indicated that this kind of image was used only in a particular timeframe – even if the sparse nature of our extant texts does not often allow us to capture the chronological evolution of metaphors in a statistically significant manner. Most importantly,

Figure 4: The ANGER IS AN OPPONENT metaphor in the *Lexicon Translaticium Latinum*.

ANGER IS AN OPPONENT is placed in the network of metaphors to which it belongs. To do so, the *Lexicon* indicates that conceiving of ‘anger’ in terms of an ‘opponent’ derives from the more general tendency of conceptualizing this (and other) emotions as ‘living entities’. Moreover, this metaphor constitutes a specific instance of a more general way of thinking about emotions as ‘opponents of the subject’ (as we have pointed out in Section 4.1). The entry also provides representative examples of the metaphor in extant Latin texts. This kind of data eventually builds up to schemas akin to our Figure 1 (see above).

The *Lexicon* permits researchers to capture conceptual relations framed in terms of cognitive metaphors, metonymies, or image schemas. This, however, is only half of what is needed, in our view. The MetaNet-like specifications we have presented so far provide the general foundation of the *Lexicon*, but precise lexical data are needed to flesh out the whole enterprise. For example, we have to answer questions such as: What concepts are used to express the idea of ‘anger’ as an ‘opponent’? And what words, specifically, express them? For this reason, we have built the *Lexicon* on top of a new Latin WordNet, based on a now-defunct endeavor by Stefano Minozzi.²⁵ A WordNet is a semantic database that represents lexical meaning in terms of *synsets*, i.e. sets of terms that in a given context can be used as synonyms. For example, all the words denoting ‘anger’ (*ira*, *furor*, *iracundia* ...) would be part of the same synset ‘the state of being angry’, labeled by a unique ID number (in this case, #10110870). The same applies to all the words designating an ‘opponent’ (#07064973). Thus, our database depicts metaphors as conceptual relations between a source synset (‘opponent’) and a target synset (‘the state of being angry’), quite independently of the concrete realization of this metaphor in the texts, which may vary as we have seen. In this way, we can alert the user as to the fact that a metaphor is a conceptual link, instantiated by different lexical items (*armiferos ... furores*, *iracundiam ... hostem*, *ira ... invasit*). However, it should also be noted that not all the words meaning ‘anger’ or ‘opponent’ are actually used in the extant Latin texts to express the metaphor ANGER IS AN OPPONENT. Thus, we also specify which lemmas are used in a given metaphorical sense, and which are not.

Over the course of time, the *Lexicon* will contain more and more information about the most common metaphors in Latin. Users will be able to search for a

²⁵ A WordNet for Latin had originally been developed by Stefano Minozzi and includes over 40,000 words that cover the archaic through classical periods of this language (Minozzi 2008). Because the WordNet does not presently distinguish between literal and figurative senses, the database has been rearchitected to accommodate the encoding of metonymic and metaphoric senses of words. Two other major changes have been introduced: these regard etymological information, and diachronic semantic changes occurring in the history of the language, thus adding a chronological dimension to the database. These sets of data seem in fact particularly relevant to investigating the metaphorical structure of Latin.

concrete source domain – say, FIRE – to discover the abstract target domains that are structured in terms of this concept in Latin: LOVE, SEX, WAR, ANGER, GRIEF, and so on, along with representative examples of these metaphors drawn from the *Lexicon* and from literature. Alternatively, they could search for an abstract target domain – say, LOVE – to discover what concrete source domains provide structure and content to its conceptualization in Latin. Or they may query a Latin expression like *exarsit ira* (literally, “‘blazed forth’ in anger”) to analyze its figurative structure; in this situation, the search mechanism would display the metaphorical mappings possibly underpinning the expression, based on semantic analysis. Thus, the *Lexicon* will represent a repository of the supra-lexical figurative relations like the ones we have explored.

6 Conclusions

In this paper, we have presented the results of our corpus-based research aimed at shedding light on how the experience of love, hate, anger, and fear are conceptually structured in Latin’s semantic system, and thus linguistically expressed in metaphorical terms. Crucially, the metaphors we have identified show only partial overlapping among the emotions considered. Although most of the metaphoric schemas found in texts are attested for all four emotions, some mappings are clearly most frequently (if not exclusively) associated with a specific domain (cf. Sections 4.1–4.4). The results illustrated help us gain more understanding of the way ancient Romans conceptualized and experienced different emotions and perceived their characteristic features, also assessing the role of metaphor in structuring the Roman conceptual system.

Research on conceptual metaphors in Latin is a topic of the greatest relevance for the study of the Roman culture and language, although it has begun to be investigated only in recent years and is still under-researched in the field of the Digital Humanities. The *Lexicon Translaticium Latinum* is a digital dictionary of Latin metaphors that aims to partially fill this gap, ideally representing a first step in bringing the ‘cognitive revolution’ to this field. By shedding light on those widely distributed patterns of figurative conceptualization that make projections between organized domains of knowledge meaningful to Latin speakers, the envisioned tool lends itself very well to reconciling different approaches under a comprehensive theory of meaning and to describing what it means to think like a Roman.

This resource is of potential interest not only to cognitive classical linguists, but also to philologists and literary scholars. Moreover, it could also find a field of application in education and classical language teaching. The construction of the

Lexicon is in progress and open to anyone who wishes to cooperate: we therefore hope that this study can serve as an invitation to potentially interested readers to join with our research group and to contribute to the project.

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