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Metaphors in Specialized Discourses In and Across Cultures

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TABLE OF CONTENTS

Metaphors in Specialized Discourses In and Across Cultures

Metaphors as Cognitive, Discursive and Cultural Phenomena: Why here, why now
Stefania Maci and Elena Mattei 7

Part I – Metaphor in Specialized Discourse

Representing eating disorders online: metaphor, identity and agency in English and Italian social media discourse
Francesca Luisa Seracini 17

Visual and Verbal Tropes in Medical Knowledge Dissemination: An English-Italian Cross-Linguistic Study of Lactose Intolerance Websites
Daniela Cesiri 47

Degrees of Metaphoricity: Conventionality and Creativity in Newspaper Sustainability Discourse
Laura Narisano and Elena Giribaldi 83

Part II – Metaphor in Translation

The Roads We Take: The Metaphor of the Journey in Lenin's Works and Their Finnish Translations
Mikhail Mikhailov and Satu Valkiainen 105

Conceptual Metaphor Change in Popular Science Translation: Understanding Mathematics in English, Polish and Italian
Monika Prysok 135

Metaphor and Prompting Effects in AI Translation of Specialised Financial Discourse: A Spanish–English Case Study
Chelo Vargás-Sierra and Antonio Moreno-Sandoval 163

Metaphors as Cognitive, Discursive and Cultural Phenomena: Why here, why now

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Abstract

This special issue of CULTUS: The Journal of Intercultural Mediation and Communication brings together six original studies that investigate the cognitive, discursive, and cultural dimensions of metaphor in specialized domains. They collectively map the ways in which figurative language structures expert and lay communication across health, political, media, and scientific domains, while simultaneously functioning as a site of intercultural negotiation when specialized texts move across linguistic boundaries. The issue is organized in two thematic parts. Part I examines metaphor as a communicative and framing device within specialized discourses. Part II shifts the lens to metaphor in translation and cross-linguistic transfer. Taken together, the contributions advance the understanding of how metaphor operates not merely as a rhetorical ornament but as a culturally embedded cognitive instrument whose stabilization, transformation, or loss in specialized and translated discourse has concrete consequences for knowledge construction and communication.

Keywords: metaphor; specialized discourse; intercultural communication; translation; cognitive linguistics; corpus linguistics; cross-linguistic comparison

1. Framing the Issue: Why Metaphor, Why Now, Why Here

Few concepts in language studies have proved as durable (or as contested) as metaphor. From Aristotle's rhetorical definition of metaphor as the transportation of a name belonging to something else (Aristotle 1995 1457b), through Richards's (1936) tenor-vehicle distinction, to the foundational cognitive turn inaugurated by Lakoff and Johnson's *Metaphors We Live By* (1980), the field has undergone successive reconceptualizations that have each time expanded both the object of inquiry and its theoretical stakes. What began as a matter of poetic ornamentation has become, over the last four decades, a matter of cognitive architecture, cultural knowledge, and communicative power. This trajectory is by now familiar to any scholar working in the cognitive or discourse-analytic tradition. The question that motivates this special issue is not whether metaphor matters (that debate is settled) but rather *where and how* it matters when it operates inside specialized domains, across cultural boundaries, and increasingly across the linguistic frontier imposed by translation (van den Broeck 1981).

Metaphor, as the contributors gathered here collectively demonstrate, is not a decorative surface feature of specialized texts; it is a structuring device that shapes how knowledge is packaged, how authority is distributed between experts and lay audiences, how cultures conceptualize illness, political struggle, financial risk, and scientific complexity, and how these conceptualizations travel, or resist travelling, when texts are rendered in another language. The intercultural dimension is therefore not an addendum to the study of specialized metaphor: it is constitutive of it.

2. Theoretical Background: Metaphor as Cognitive, Discursive, and Cultural Phenomenon

The theoretical landscape from which the contributions in this issue draw is broad but coherent at its core. Conceptual Metaphor Theory (CMT; Lakoff and Johnson 1980) established the foundational claim that metaphor is not a matter of language but of thought: it is a cross-domain mapping from a more concrete or familiar source domain onto a more abstract or less familiar target domain. This move, from rhetoric to cognition, had far-reaching consequences. It reframed the question of universality and cultural variation, since the same conceptual metaphor (*life is a journey*; *argument is war*) could be shown to recur across typologically unrelated languages while

simultaneously exhibiting culture-specific instantiations at the linguistic surface.

Kövecses (2000; 2005; 2008) pursued this tension systematically, arguing that while many primary and complex metaphors display a cross-cultural stability grounded in shared embodied experience, the specific elaborations, extensions, and preferences that cultures develop diverge considerably. His work on universality and variation in metaphor directly motivates the cross-linguistic design of every study in this volume. Equally central is Semino's (2008) observation that metaphors vary in their textual appearance and in the discursive functions they perform, an insight that gains particular force when the contexts examined are specialized genres with their own rhetorical economies, audience expectations, and epistemic norms.

The methodological toolkit deployed across the six studies is correspondingly pluralist. MIPVU (Metaphor Identification Procedure VU Amsterdam; Steen *et al.* 2010; 2011) provides a reliable intersubjective procedure for identifying metaphorically used words at the level of linguistic expression. Metaphorical Pattern Analysis (Stefanowitsch 2004; 2007) offers a corpus-driven approach to mapping the statistical distribution of source and target domain vocabulary. Kress and van Leeuwen's (2020) social semiotic model of visual grammar extends the analysis to multimodal texts, where metaphorical meaning is not confined to the verbal channel. Charteris-Black's (2004) Critical Metaphor Analysis, Toury's (2012) translation norms framework, and Hofstede's (2011) cultural dimensions model round out an interdisciplinary apparatus that, taken together, is markedly more eclectic than any single paradigm could sustain. This eclecticism is not a weakness; it reflects the genuine complexity of metaphor when studied *in vivo*, across domains and across cultures.

One dimension that runs across both parts of this issue and deserves explicit theoretical marking is the distinction between *conventionalized* and *creative* metaphor. As Goatly (1997) and Müller (2008) argued, and as Narisano and Giribaldi develop in detail in their contribution, conventionality and creativity are best conceived not as binary oppositions but as poles of a cline. Conventionalized metaphors, entrenched through repetition and codified in the lexicon, tend to become invisible as metaphors, naturalizing particular framings of social reality (Charteris-Black 2004; Krennmayr 2015). Creative metaphors, by contrast, foreground the mapping and invite interpretive effort. This cline matters in specialized discourse because the degree of metaphoricity affects not only

comprehension and persuasion but also the translatability of a text: highly conventionalized source-domain expressions may lack equivalents in the target language, while creative elaborations may resist any direct rendering at all.

3. The Contributions: A Critical Overview

The six studies are organized in two parts that reflect a principled distinction: Part I examines metaphor as a communicative and framing device *within* specialized discourses; Part II examines metaphor *in translation*, that is the processes by which metaphorical meaning is transferred, modified, or lost as specialized texts cross linguistic boundaries. This organization is not merely taxonomic. It reflects a progression from metaphor as a tool of intralingual knowledge construction to metaphor as a site of interlingual and intercultural negotiation, a trajectory that maps directly onto communication and translation as forms of cultural mediation.

3.1 Part I: Metaphor in Specialized Discourse

Francesca Luisa Seracini establishes the social and clinical stakes of metaphor research from the outset in her contribution *Representing eating disorders online: metaphor, identity and agency in English and Italian social media discourse*. Drawing on CMT (Lakoff and Johnson 1980) and applying both MIPVU (Steen *et al.* 2010) and Metaphorical Pattern Analysis (Stefanowitsch 2004; 2007) to posts from English- and Italian-speaking online communities on eating disorders, Seracini identifies three shared conceptual metaphors: *eating disorder is a destructive force*, *eating disorder is a (harmful) place*, *eating disorder is a path*. Alongside these, the study documents culture-specific divergences. The study makes a methodologically sound case for online forum data as “unfiltered, real-world” material that captures the lived experiential dimension of mental health discourse. What is particularly valuable here, from an intercultural perspective, is the finding that convergence at the conceptual level does not preclude divergence at the level of linguistic instantiation and community framing. This result complicates facile claims about the universality of embodied metaphor. The clinical implications are explicit: understanding the metaphors patients use

to narrate their experience is not a hermeneutic luxury but a precondition for effective communication in therapeutic and public health contexts.

The investigation by **Daniela Cesiri**, *Visual and Verbal Tropes in Medical Knowledge Dissemination: An English-Italian Cross-Linguistic Study of Lactose Intolerance Websites*, moves from the participatory space of social media to the authoritative space of institutional health websites, comparing eight sites (four Anglophone, four Italian) that address lactose intolerance for lay audiences. Cesiri's multimodal approach, combining CMT and Kövecses's (2020) Extended CMT for verbal metaphors with Kress and van Leeuwen's (2020) visual grammar for images, reveals that *visual metonymy and synecdoche* predominate over metaphor proper, while the verbal channel consistently draws on the established source domain *body is machine*. The cross-cultural comparison, framed through Hofstede's (2011) cultural dimensions, produces a counterintuitive finding: Power Distance is effectively *reversed* in the US pages, where symptom reporting defers to patients' self-perception, while Italian pages maintain the specialist's epistemic authority. This finding is both analytically precise and culturally significant: the metaphors chosen to render illness visible to a lay audience are not culturally neutral but encode distinct assumptions about the doctor-patient relationship and the distribution of medical knowledge. Read alongside Seracini's study, it establishes health discourse as a domain where metaphor and intercultural variation are inseparable.

Laura Narisano and **Elena Giribaldi**'s study, *Degrees of Metaphoricity: Conventionality and Creativity in Newspaper Sustainability Discourse*, shifts domain (from health to sustainability) and analytic focus (from identification to gradience). Working on a bilingual comparable corpus of British and Italian newspaper articles, Narisano and Giribaldi propose a multi-criteria gradient framework that locates metaphors on a cline from highly conventionalized mappings through topic-triggered expressions, extended mappings, and creative recontextualizations. The cross-linguistic comparison reveals both convergence, in the form of shared conventional framings of sustainability, and divergence in the mechanisms through which creativity emerges, with headline constraints and topic-triggering identified as contextual factors that systematically condition metaphorical choices.

This study is the most theoretically explicit of the three in Part I on the conventionality-creativity dimension, and its gradient model offers a transferable analytical tool that subsequent comparative work could usefully adopt. It also completes Part I's three-domain coverage: health (personal), health (institutional) and media/environment. Taken together, these

establish that metaphorical framing in specialized discourse is not domain-specific in its mechanisms, even when it is domain-specific in its preferred mappings.

3.2 Part II: Metaphor in Translation

Part II opens with a contribution that anchors the translation dimension in a politically charged and historically specific corpus. In *The Roads We Take: The Metaphor of the Journey in Lenin's Works and Their Finnish Translations*, **Mikhail Mikhailov** and **Satu Valkiainen** examine the JOURNEY metaphor in Lenin's Russian political writings and their Finnish translations, drawing on LenCor (a monolingual Russian corpus) and the parallel Russian-Finnish subcorpus of ParVLen. The semi-automatic methodology, based on concordance searches on four high-frequency lexical triggers (*put'*, *doroga*, *povorot*, *pohod*) followed by manual annotation, allows fine-grained differentiation between abstract directional metaphor (*put'*), materialized road features (*doroga*), moments of historical rupture (*povorot*), and the convergence of JOURNEY and WAR metaphors in *pohod*. The translation analysis reveals a tendency toward metaphor preservation across time, with early variation giving way to later standardization, a finding that raises important questions about translation norms and the ideological stabilization of political discourse across language communities. The contribution of this study to the intercultural dimension of this special issue is particularly clear: it demonstrates that political metaphors are negotiated across linguistic systems that may lack structural equivalents, and that negotiation has ideological as well as linguistic consequences.

The fifth contribution, *Conceptual Metaphor Change in Popular Science Translation: Understanding Mathematics in English, Polish and Italian*, by **Monika Prysok**, addresses the translation of metaphor in popular science, a genre whose defining communicative challenge is precisely the mediation between expert knowledge and lay comprehension. Using MIPVU (Steen *et al.* 2011) on a parallel unidirectional corpus of *Scientific American* articles and their Polish (*Świat Nauki*) and Italian (*Le Scienze*) translations, Prysok maps variations in metaphoricity across the three languages, finding that translations both reproduce source metaphors and introduce new ones grounded in different source domains. This trilingual design is the most structurally ambitious of the translation studies in the volume and produces findings that speak directly to the cognitive function of metaphor in

knowledge popularization: if translations systematically alter the source domains from which explanatory metaphors are drawn, then the conceptual scaffolding available to Polish and Italian readers of popularized mathematics is not identical to that available to English readers. The implications for science communication across languages, and for the assumption that popular science translation is a transparent process of linguistic substitution, are worth pressing further than the study's scope allows, but the empirical basis it establishes is solid.

In *Metaphor and Prompting Effects in AI Translation of Specialised Financial Discourse: A Spanish–English Case Study*, **Chelo Vargas-Sierra** and **Antonio Moreno-Sandoval** address a question that none of the other studies in the volume could have posed a decade ago: how do large language models and neural machine translation systems perform when confronted with specialized figurative language? Testing six system-prompting conditions (Google Translate, DeepL, ChatGPT zero-shot and few-shot, Deepseek zero-shot and few-shot) on 26 financial metaphors from shareholder letters (Spanish to English), the study evaluates translation quality across four dimensions: semantic precision, metaphorical equivalence, register appropriateness, and clarity and fluency. The finding that LLMs with zero-shot prompting outperform NMT systems on figurative adequacy and register fit, while few-shot prompting produces model-specific divergence (ChatGPT stable; Deepseek sharply degraded), is both practically significant and theoretically provocative. It suggests that the relationship between prompt design and metaphor translation is neither linear nor predictable across models, a result that should give pause to any uncritical deployment of AI translation in high-stakes financial communication. Positioned at the close of the volume, this study performs a deliberate opening onto an emerging research agenda: the interaction between specialized metaphor, cultural embedding, and machine cognition.

4. Cross-Cutting Themes and the Logic of the Collection

Reading across the six contributions, several cross-cutting themes emerge that are worth making explicit, since they constitute the intellectual coherence of this issue beyond the organizational logic of its two-part structure.

Firstly, the English-Italian pairing recurs in three of the six studies (Seracini; Cesiri; Narisano and Giribaldi) as one of the language pairs under

investigation. The convergences and divergences that emerge from this implicit comparison merit systematic attention in future work.

Secondly, the question of corpus methodology threads through every study, though the corpora differ substantially in type, size, and construction: online forum posts (Seracini), institutional websites (Cesiri), comparable newspaper corpora (Naritano and Giribaldi), monolingual and parallel literary-political corpora (Mikhailov and Valkiainen), parallel unidirectional translation corpora (Prysok), and a purpose-built evaluation corpus of machine-translated instances (Vargas-Sierra and Moreno-Sandoval). This diversity is a resource rather than an inconsistency: it demonstrates that corpus-assisted metaphor analysis is not restricted to any single genre or data type, while also inviting reflection on how corpus design conditions what can be found.

Third, all six studies converge on the claim that metaphor in specialized discourse is a *culturally variable* phenomenon: the mappings available to a given community, the conventionalization pathways those mappings follow, and the resistance or openness of those mappings to translation are all shaped by cultural factors that cannot be reduced to linguistic structure alone. Whether the relevant cultural variable is Power Distance in health communication (Cesiri), ideological tradition in political translation (Mikhailov and Valkiainen), genre convention in sustainability journalism (Naritano and Giribaldi), or model-specific sensitivity to priming in AI translation (Vargas-Sierra and Moreno-Sandoval), the consistent finding is the same: metaphor does not travel neutrally across cultural boundaries, and the conditions of its transfer are always partly extralinguistic.

5. A Note on Sequence and Critical Limitations

The organization of this issue (from metaphor in discourse to metaphor in translation, from health to sustainability, politics, science, and to finance) is intended to be cumulative rather than merely additive. Each study builds implicitly on insights from those preceding it, and the reader who moves through the special issue sequentially will find that later contributions acquire additional resonance from earlier ones. The JOURNEY metaphor in Lenin's discourse, for example, is best appreciated in the light of 83and Giribaldi's analysis of how conventional mappings structure social reality;

both studies gain depth when read against the translational instability documented by Prysok, and by Vargas-Sierra and Moreno-Sandoval.

That said, two limitations of the present collection should be acknowledged. First, the domain coverage, while genuinely broad, remains weighted toward health communication (two of six studies) and does not yet address legal, technical, or tourism discourse, domains in which metaphor research has a substantial tradition and where the intercultural stakes are equally high. Second, the language pairs represented, while diverse, leave large areas of metaphorical geography unexplored: East Asian, Arabic, or African language contexts are absent. being aware of them means taking these gaps into consideration for future issues to fill.

6. Conclusion

The contributors gathered here represent a range of methodological traditions, disciplinary formations, and national research contexts. What they share is a conviction that metaphor in specialized discourse is neither a peripheral concern nor a settled question. As specialized knowledge becomes increasingly global in its production and increasingly mediated in its dissemination through digital platforms, AI translation tools, and multilingual popular science, the cultural work that metaphor performs in these processes becomes more consequential, not less. This special issue is offered as a contribution to the sustained scholarly attention that work deserves.

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Representing eating disorders online: metaphor, identity and agency in English and Italian social media discourse

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Abstract

This study investigates the linguistic and metaphorical construals of eating disorders (EDs) in online mental health discourse from a cross-cultural perspective. Drawing on Conceptual Metaphor Theory (Lakoff and Johnson, 1980) and corpus-based analysis, it examines discussions within two online communities, respectively in English and Italian. As naturally occurring, unfiltered, peer-to-peer interactions, these forums provide valuable insight into how individuals linguistically construct and communicate experiences of eating disorders in everyday online settings (Figueras Bates, 2023: 96). The study explores how recurrent metaphorical and figurative patterns contribute to representations of identity and agency in eating-disorder discourse. By comparing English- and Italian-language data, the research investigates how different linguistic and cultural contexts shape understandings of control, responsibility, recovery and identity. Methodologically, the study combines Metaphorical Pattern Analysis (Stefanowitsch, 2007; 2004) with MIPVU (Steen et al. 2010) in order to identify recurrent conceptual metaphors associated with eating disorders. The analysis also draws on Philip's (2010) distinction between salient metaphorical expressions and highly conventionalised metaphorically motivated language, recognising that even conventionalised patterns may contribute to stable ways of representing eating disorder experiences. The findings reveal both shared and culture-specific patterns across the two corpora. Both English- and Italian-language corpora frequently represent eating disorders through spatial conceptual metaphors, particularly EATING DISORDER IS A (HARMFUL) PLACE. In addition, both corpora contain recurrent force-related patterns that frame eating disorders as overwhelming and damaging experiences. At the same time, the English-language corpus displays a stronger tendency to externalise the disorder through personifying and conflict-based patterns, whereas the Italian-language corpus more frequently foregrounds identity-based and narrative construals. These findings contribute to research in applied linguistics, discourse studies and mental health communication by showing how recurrent linguistic patterns may shape understandings of eating disorders, identity and recovery across different cultural contexts.

Keywords: eating disorders; mental health discourse; Conceptual Metaphor Theory; social media; online forums; metaphor analysis; cross-linguistic comparison; identity; agency

1. Introduction

Mental health conditions, including eating disorders (EDs), are increasingly widespread¹ and pose significant challenges for individuals, families, health systems and the economy. Rising awareness of these conditions has highlighted the importance of how they are communicated and understood. Communication shapes not only public knowledge but also social norms, beliefs (Smith and Applegate, 2018) and help-seeking behaviours (Omondi, 2024). Clear and responsible ways of talking about eating disorders can therefore support prevention, early identification and access to care.

Institutions have explicitly recognised this link between language and outcomes. For example, the National Eating Disorders Collaboration (NEDC), funded by the Australian Government Department of Health and Aged Care, identifies effective communication as central for the prevention and initial response of EDs. According to the NEDC, communication influences social norms, beliefs, behaviours and relationships in ways that can directly affect people living with EDs (NEDC, 2025).² While such initiatives demonstrate growing policy attention to communication, much less is known about how eating disorders are framed in everyday, non-institutional discourse, particularly in the peer-to-peer spaces where many individuals share their experiences.

Online forums and social media platforms have become important sites for discussing mental health. These spaces host large volumes of spontaneous, first-person accounts that reflect lived experience rather than clinical or institutional perspectives (Figueras Bates, 2023). The language used in these contexts does not simply describe symptoms or events; it also reflects and shapes how individuals interpret their experiences, define their

¹ <https://www.who.int/news/item/02-09-2025-over-a-billion-people-living-with-mental-health-conditions-services-require-urgent-scale-up>; <https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2023-wave-4-follow-up/part-5-eating-problems-and-disorders>. Last accessed 8 May 2026.

² <https://nedc.com.au/eating-disorders/preventing-eating-disorders/communication>. Last accessed 25 January 2026.

identities and evaluate their ability to act (Coll-Florit *et al.* 2021). For this reason, examining everyday discourse online can offer insights into the cultural meanings attached to eating disorders and the ways these meanings may support or hinder recovery. Much of this meaning-making is achieved through figurative language, and particularly through metaphors.

According to Conceptual Metaphor Theory (Lakoff and Johnson, 1980) metaphor is not an ornamental feature of language but a cognitive mechanism through which abstract and complex concepts are understood in more concrete terms. Moreover, as Lakoff and Johnson (1980: 10) remark, “[t]he very systematicity that allows us to comprehend one aspect of a concept in terms of another [...] will necessarily hide other aspects of the concept”. In other words, “[i]n allowing us to focus on one aspect of the concept [...], a metaphorical concept can keep us from focusing on other aspects of the concept that are inconsistent with that metaphor” (Lakoff and Johnson 1980: 10). As Demjén and Semino (2017: 385) note in relation to physical illness, the way illness experiences are linguistically framed can influence both how individuals understand their own condition and how they are perceived and treated by others, including family and clinicians. Metaphors structure, therefore, how people think about illness, responsibility, control and change, and they influence both personal narratives and collective attitudes (Altavilla *et al.* 2025; Coll-Florit *et al.* 2021; Demjén *et al.* 2019; Shi and Khoo, 2023; Siegelman, 1990; Tay, 2017; 2013). In the context of mental health, metaphorical framings can shape whether a condition is understood as a force (Abu Rumman *et al.* 2025; Shi and Khoo, 2023), a journey (Abu Rumman *et al.* 2025; Panduangkaew and Wongthai, 2024; Tonon, 2020) or a war (Abu Rumman *et al.* 2025; Tonon, 2021), each of which carries different implications for identity and agency. The present study extends this perspective to the context of eating disorders by examining how different linguistic and metaphorical patterns may shape understandings of identity and agency in online discourse from a cross-cultural perspective in English and Italian online communities.

Two research questions guide the study:

- 1) How are eating disorders linguistically construed in English and Italian online discourse through conceptual metaphors, personifying framings and other recurrent figurative or conventionalised patterns of representation?

- 2) What do these recurrent metaphorical and linguistic construals reveal about cultural attitudes toward the lived experience of eating disorders, particularly with respect to identity (i.e., how individuals position and define themselves in relation to the disorder) and agency (i.e., the perceived ability to act, resist, recover or exercise control)?

By comparing these patterns across two languages and cultures, the study sheds light on how eating disorders are discursively constructed in everyday online interaction and how different ways of representing the relationship between self and disorder may shape perceptions of responsibility, suffering, control and recovery across cultural contexts.

Coll-Florit *et al.* (2021: 87) note that conceptual metaphor research has devoted comparatively limited attention to mental health discourse, particularly in relation to online communication and internet-based interactions. By addressing this gap through a cross-linguistic analysis of online eating-disorder discourse, the present study contributes to research in applied linguistics, discourse studies and mental health communication. It also has potential implications for clinical practice and for broader understandings of how individuals conceptualise and communicate experiences of mental illness.

2. Metaphors in mental health discourse

Research on language and mental health is based on the view that language does not simply describe psychological states but affects mental health perceptions, attitudes and help-seeking behaviour (Buckton *et al.* 2015; Fleary *et al.* 2022; Lindquist *et al.* 2015). For example, higher levels of mental health literacy are associated with lower stigma and greater willingness to seek help (Fleary *et al.* 2022). More broadly, research on health communication also demonstrates that the framing of health-related information can influence beliefs and behaviours, highlighting the role of language in shaping public perceptions and responses to health conditions (Buckton *et al.* 2015). In particular, metaphors enable speakers to frame complex and emotionally charged experiences in more concrete terms and “different metaphors reflect and facilitate different ways of making sense of and evaluating a particular topic or experience” (Demjén *et al.* 2019: 17).

The study of metaphor in mental health discourse lies at the intersection of applied linguistics, cognitive science and clinical psychology.

Lakoff and Johnson's (1980) Conceptual Metaphor Theory (CMT) constitutes the dominant theoretical framework in research on mental health metaphors. CMT posits that metaphor is a cognitive phenomenon rather than merely a linguistic one, i.e. metaphorical expressions reflect deeper conceptual structures. The core premise in CMT is that abstract concepts (i.e. target domains) are understood through mappings from more concrete source domains.

This provides a framework for how individuals conceptualise mental health conditions that are deeply intangible (Abu Rumman *et al.* 2025; Demjén *et al.* 2019; Malkomsen *et al.* 2021; Shi and Khoo, 2023; Tay, 2013; Tonon, 2021). Rather than functioning as mere linguistic embellishment, metaphorical language serves as a fundamental cognitive mechanism that helps individuals conceptualise and communicate psychological distress (Demjén *et al.* 2019). Research on the ways metaphors structure understandings of mental health conditions spans a wide range of contexts, including clinical psychotherapeutic process (Siegelman, 1990; Tay, 2017; 2013), patient narratives (Altavilla *et al.* 2025), online blogs (Coll-Florit *et al.* 2021) and online communities (Shi and Khoo, 2023).

Depression has received the most extensive research attention. Studies have shown that the most pervasive conceptual metaphors for depression include LIFE WITH DEPRESSION IS A PATH/JOURNEY (Abu Rumman *et al.* 2025: 879; Panduangkaew and Wongthai, 2024: 131; Tonon, 2020: 128), DEPRESSION IS A WAR/CONFLICT (Abu Rumman *et al.* 2025: 880; Tonon, 2021: 346), DEPRESSION IS DARKNESS (Abu Rumman *et al.* 2025: 880; Malkomsen *et al.* 2021: 4; Tonon, 2020: 128), THE DEPRESSED PERSON IS A CONTAINER (Abu Rumman *et al.* 2025, 884; Panduangkaew and Wongthai, 2024: 132; Shi and Khoo, 2023: 8; Tonon, 2020: 128), DEPRESSION IS A LIVING ORGANISM (Abu Rumman *et al.* 2025: 880; Shi and Khoo, 2023: 8), DEPRESSION IS A FORCE (Abu Rumman *et al.* 2025: 882; Shi and Khoo, 2023: 8), DEPRESSION IS INCAPACITY TO MOVE (Tonon, 2021: 343), DEPRESSION IS A WEIGHT (Panduangkaew and Wongthai, 2024: 132; Shi and Khoo, 2023: 8).

The journey metaphor frames depression as a path or trajectory, with recovery conceptualised as movement toward a destination (Panduangkaew and Wongthai, 2024). The war/conflict metaphor, equally prevalent, conceptualises mental illness as an enemy or opponent to be fought, positioning patients as combatants in ongoing battles (Abu Rumman *et al.* 2025; Tonon, 2021). Interestingly, Coll-Florit *et al.* (2021, 98) also found that, in addition to mental illness being framed as the enemy to

be fought, for patients “in many other cases [...] the fight was simply that of carrying on living”.

While these framings may emphasise agency and resistance, critical analyses note that they can be perceived as both empowering and disempowering (Coll-Florit *et al.* 2021; Semino *et al.* 2018). With regards to the war metaphor, as Coll-Florit *et al.* (2021: 99) point out, “war scenarios trigger a sense of threat and fear when the disease is the enemy, thus they are demotivational when patients are reduced to battlefields but may also provoke solidarity or may be a way of attracting attention, changing beliefs and taking action”. Darkness and light metaphors constitute another dominant pattern, with depression conceptualised as darkness or an absence of light, and recovery as emergence into light (Abu Rumman *et al.* 2025; Malkomsen *et al.* 2021; Tonon, 2020). These metaphors draw on embodied experiences of vision and spatial orientation, linking psychological states to perceived experiences. Similarly, container metaphors conceptualise depression as a bounded space that contains the individual or as a substance within the person (Abu Rumman *et al.* 2025; Panduangkaew and Wongthai, 2024; Shi and Khoo, 2023; Tonon, 2020). This schema structures experiences of being trapped, enclosed or filled with negative emotions, thereby highlighting a perceived separation between internal experiences and the external world.

A cross-cultural perspective is particularly relevant in metaphor research because language not only reflects shared cultural meanings, but also contributes to shaping how experiences are interpreted and communicated within specific communities. As Kövecses (2015: 76) argues, meanings are constructed through discourse and interaction; recurrent linguistic patterns can therefore reveal culturally embedded ways of understanding particular phenomena. Similarly, Deignan (2017: 114) remarks that “generalisations can be detected from linguistic metaphors and [...] these generalisations seem able to [...] probably frame world views”. The repeated use of similar metaphorical and figurative patterns across discourse may therefore gradually influence how experiences are perceived and interpreted within a culture. Since discourses surrounding health and illness are shaped by broader social and cultural frameworks, examining metaphorical and figurative representations across languages can provide an insight into how different communities conceptualise mental health experiences and position individuals in relation to them.

Cross-linguistic research reveals that certain source domains (e.g. container, journey, darkness) tend to recur across languages and cultures in

conceptualising mental health conditions (Tonon, 2021; Panduangkaew and Wongthai, 2024), while others tend to vary considerably depending on language and culture (Jing and Jiang, 2024; Abu Rumman *et al.* 2025; Shi and Khoo, 2023). Evidence from different cultural settings highlights distinct metaphorical framings of depression: Shi and Khoo (2023) identify metaphors tied to cyberculture and sociocultural factors in Chinese online discourse, whereas Panduangkaew and Wongthai (2024) report that Thai patients frequently conceptualise depression as a wound. However, research comparing metaphor use across languages in non-translational, naturally occurring discourse on mental health remains relatively scarce, constituting a gap that the present study aims to address.

3. Language and eating disorders

Eating disorders have increasingly been examined as phenomena that are not only medically defined but also linguistically and socially constructed. Research in this area has shown that language plays a central role in how eating disorders are experienced and narrated. Studies have focused particularly on online interactional contexts where individuals affected by eating disorders relate their personal experiences and engage in peer support (Figueras Bates, 2023; Lyons *et al.* 2006; Wolf *et al.* 2013). Early research in this area explored how individuals with eating disorders construct and present identities in online environments. Lyons *et al.* (2006) examined online self-presentations produced by individuals who endorsed anorexia as a lifestyle and by users who described themselves as being in recovery from anorexia, analysing material drawn from personal webpages and message board posts. The study aimed to investigate differences in the ways these two groups constructed and presented themselves linguistically in online environments. Their findings showed differences in language use between the two groups. Compared with individuals identifying as recovering from anorexia, participants associated with pro-anorexia communities displayed linguistic patterns characterised by a stronger “hedonic focus on positive emotions and the here and now, reduced level of cognitive processing, and a lower degree of self-preoccupation” (Lyons *et al.* 2006: 256).

Wolf *et al.*'s (2013) study compares pro-eating disorder blogs, recovery blogs and control blogs unrelated to eating disorders. Using computational linguistics methods for text analyses, the study identifies linguistic features that distinguish the three types of blogs. Compared to the

control blogs, eating disorder-related blogs are characterised by strong self-focus, reduced social orientation and a high concentration of disorder-specific content. Pro-eating disorder blogs tend to display a rigid and affirmative communicative style, which Wolf *et al.* (2013) interpret as reflecting a desire for control similar to that observed in disordered eating behaviours. By contrast, recovery blogs show linguistic patterns associated with active coping and social re-engagement. The authors call for further research into the social dynamics of blog readership in order to examine the potential role of online discourse in contributing to health risks through processes of social contagion.

Subsequent research has increasingly examined how individuals narrate illness experiences through interaction with others in online support communities. Figueras Bates' (2023) analysis of an English-language eating disorder forum investigates the storytelling practices in an online forum for people recovering from an eating disorder. The study shows that narratives function not simply as personal accounts but as socially oriented contributions that resonate with previous posts and help construct a shared understanding of the eating disorder experience. In this way, personal stories play a key role in the interactional work through which new participants position themselves within the online mental health support community. When introducing themselves, individuals often provide detailed accounts of their illness history in order to establish relevance and elicit responses. In this sense, individual narratives function as a means of demonstrating legitimacy and positioning oneself as a credible participant within the community.

Relatedly, Bohrer *et al.* (2020) investigate how recovery from eating disorders is conceptualised within online communities by analysing publicly available comments posted on three eating disorder-related Reddit forums over a six-month period. Using inductive thematic analysis, the study explores how users participating in these communities define and discuss recovery experiences. One of the main themes identified is the representation of recovery as an ongoing process rather than a fixed end state. Most participants describe themselves as being "in recovery," whereas only a smaller number refer to themselves as "recovered" (Bohrer *et al.* 2020: 1220). Across the corpus, recovery is frequently framed through journey- and path-related language, suggesting a gradual and evolving experience involving multiple stages rather than a single final outcome. Commenters also stress the highly individual nature of recovery,

emphasising that experiences and goals differ from person to person and therefore resist a universal definition.

Research focusing specifically on metaphors in eating disorder discourse remains limited, particularly in cross-linguistic and cross-cultural contexts, although interest in this area has expanded in recent years. Within this emerging body of work, scholars have begun to show how metaphorical framings actively shape public understandings of these conditions. Wilson (2016: 217) notes that “[a]norexia nervosa is a phenomenon that we have struggled to understand, and which has therefore attracted metaphorical explanations” and argues that public beliefs about anorexia nervosa are produced and reinforced through metaphorical thinking, suggesting that dominant metaphorical constructions may influence broader cultural perceptions of eating disorders.

Alongside discourse studies, recent research has applied methods from clinical linguistics and natural language processing (NLP) to identify measurable linguistic patterns associated with eating disorders. This line of research treats language not only as a means of communication but also as a potential behavioural indicator of psychological and cognitive states. Rather than examining narrative or interactional meaning-making, these studies focus on formal lexical and syntactic features that may differentiate clinical and non-clinical populations.

Cuteri *et al.* (2022) provide a systematic investigation of this type in anorexia nervosa (AN). In their study, adolescent girls with AN and matched peers produced short texts, which were analysed using automated morphosyntactic and lexical measures. The AN group showed consistent signs of syntactic reduction, including shorter sentences, simpler noun phrases and lower overall structural complexity, alongside differences in conjunction use, deixis and perceptual vocabulary. The authors suggest that these patterns could support early detection as linguistic markers of AN. The study therefore makes an important contribution by demonstrating that quantifiable linguistic features can distinguish clinical groups while also extending clinical profiling to an under-researched language (Italian).

A comparable computational perspective is adopted by Merhbene and Kurpicz-Briki (2024), who focus on automatic eating disorder detection in German. The authors compiled a corpus of German-language YouTube comments related to eating disorders and manually annotated them using a multi-label scheme based on ICD-10 diagnostic categories (World Health Organization, 1992). This annotation process was supported by multiple coders and inter-annotator agreement measures. To ensure a balance in the

representation of the targeted classes in the corpus, back translation was applied as a data augmentation technique: this strategy increased dataset size and diversity while preserving semantic content. The study resulted in the creation of a specialized, manually annotated dataset specifically designed to support the identification of EDs in German.

Together, these studies demonstrate both the feasibility of identifying eating disorder-related linguistic markers and the practical value of computational and cross-linguistic resources for detection tasks. At the same time, they highlight that eating disorder-related language displays detectable regularities across languages. Discourse-oriented approaches - particularly those grounded in Conceptual Metaphor Theory - can build on these findings to examine how such patterns encode meanings related to identity and agency, thereby contributing to detection by revealing metaphorical cues that indicate underlying psychological and cognitive states.

4. Materials and method

This study investigates how eating disorders are linguistically construed in online discourse through conceptual metaphors, personifying framings and other recurrent figurative and conventionalised patterns of representation in two purpose-built corpora in different languages. The corpora were designed to enable a comparative examination of how individuals construct and communicate experiences of eating disorders in online settings, particularly with respect to identity and agency. Data were drawn from two distinct online communities: an English-language community and an Italian-language community. Corpus 1 (C1), in English, comprises 37,883 words and consists of 100 posts extracted from the Reddit subreddit *r/EatingDisorders*.³ Corpus 2 (C2), in Italian, comprises 35,239 words and includes 24 posts from the *Forum di Psicologia di NienteAnsia*.⁴ The two online communities were selected on the basis of their high level of user activity, thematic relevance and accessibility of naturally occurring peer-to-peer interaction concerning eating disorders. Reddit was chosen for the English-language corpus because of its large and highly active user base (at the time

³ <https://www.reddit.com/r/EatingDisorders/>. Last accessed 16 June 2026.

⁴ <https://nienteansia.org/forum/board/32-rapporto-con-il-cibo/>. Last accessed 16 June 2026.

of the present study, *r/EatingDisorders* had approximately 25,000 visitors and 950 posts per week), which provides extensive user-generated discussion across a wide range of health-related topics. Its scale and widespread use make it particularly suitable for investigating recurring discourse patterns in online discussions of eating disorders. The Italian forum was selected because it represented one of the largest and most active Italian-language online communities dedicated to mental health and eating disorder-related discussion at the time of data collection (there were approximately 10,000 posts in the section dedicated to relationship with food at the time of the present study). The aim was not statistical representativeness of all online eating disorder discourse, but the identification of recurrent linguistic and metaphorical patterns within active online support environments.

Data collection followed clearly defined criteria. The posts were collected over a seven-day period (18 May 2025-25 May 2025). A temporally bounded sampling procedure was adopted in order to obtain a manageable yet sufficiently rich corpus for detailed qualitative and quantitative analysis. Given the labour-intensive nature of metaphor and pattern identification, limiting the corpus to a clearly defined timeframe enabled systematic close analysis while still providing a substantial quantity of naturally occurring discourse data. The same sampling procedure was applied to both corpora in order to ensure cross-linguistic comparability. As the study does not aim to investigate diachronic variation, but rather recurrent patterns of representation within online eating disorder discourse, the selected timeframe was considered adequate for the purposes of the analysis.

Only contributions authored by individuals who self-identified as experiencing eating disorders were included; posts by parents, siblings, friends or other third parties were excluded. In addition, posts unrelated to eating disorders (e.g. discussions of food preferences without reference to disordered eating) were not considered. For each selected thread, the entire conversational sequence initiated by the original post was included in the corpus, comprising both the initial contribution and all subsequent replies. Given the sensitive nature of the topic, strict ethical procedures were adopted. No interaction with forum contributors took place and posts were manually extracted to remove any information that could potentially identify authors, ensuring that all data were fully anonymised. Contributions suggesting that the author was underage (e.g. references to school-related experiences) were excluded. As the study relies exclusively on publicly available and anonymised data, formal ethical approval was not required.

Accordingly, only short textual excerpts are reproduced as illustrative examples in the analysis.

The analytical procedure was conducted in successive stages. First, all lexical items and expressions used to denote eating disorders (e.g., *anorexia, bulimia, binge eating, behaviour, relationship with food, problema, disordine alimentare*) were identified in each corpus with the aid of the Wordlist function in Sketch Engine (Kilgariff *et al.* 2004). Their frequency and distribution were then examined and compared across the two corpora in order to highlight similarities and differences between the English- and Italian-language communities. Subsequently, the Word Sketch function in Sketch Engine (Kilgariff *et al.* 2004) was employed to retrieve the most salient collocates associated with each term or expression referring to eating disorders in both corpora. This collocational analysis provided an empirical basis for identifying recurrent linguistic environments and patterns of association surrounding the representation of eating disorders.

The second stage of the analysis focused on the identification and interpretation of metaphorical and figurative patterns linked to the extracted terms and expressions. Within the framework of Conceptual Metaphor Theory (CMT), a methodological challenge concerns the extent to which metaphor identification and categorisation may rely on researchers' subjective judgments, particularly when dealing with highly conventionalised expressions. To address this issue, the present study adopts an integrated methodological approach that combines Metaphorical Pattern Analysis (MPA) (Stefanowitsch, 2007; 2004) with the Metaphor Identification Procedure Vrije Universiteit (MIPVU) (Steen *et al.* 2010), an elaboration of the original Metaphor Identification Procedure proposed by the Pragglejaz Group (2007). The validity of this combined approach in corpus-based metaphor research has been demonstrated in previous studies, including Muelas-Gil's (2023) work on economic discourse in English and Spanish.

MPA is a corpus-based technique that identifies recurring metaphorical patterns associated with a target domain by examining recurrent collocational configurations and semantic associations (Stefanowitsch, 2007: 66). One of the strengths of MPA lies in its ability to quantify the relative prominence of specific metaphorical patterns associated with particular target-domain items.

In the present study, all the collocational patterns referring to eating disorders were initially considered as candidate metaphorical or figurative patterns, with no minimum frequency threshold applied at this stage.

Candidate patterns were subsequently examined qualitatively using MIPVU (Steen *et al.* 2010) in order to assess the degree of semantic contrast between contextual meaning and a more basic, literal meaning. To establish basic meanings, authoritative lexicographic resources were consulted, namely the *Oxford English Dictionary* (OED) and the *Vocabolario della Lingua Italiana* Zingarelli.

The study recognises that not all recurrent patterns exhibit the same degree of metaphorical salience. As Philip (2010: 188) remarks, “most metaphors are in fact naturalised lexical items, forming part of the conventional vocabulary and phraseology of the language, and their metaphorical nature tends to pass unnoticed, both in production and in reception”. However, such expressions still continue to convey evaluative meanings even when speakers no longer consciously perceive them as figurative (Philip, 2012; 2010). The recurrent use of particular metaphorical patterns or themes, even when highly conventionalised, can therefore reveal underlying attitudes and assumptions associated with specific topics (Philip, 2010: 188). In this sense, highly conventionalised metaphors may operate below the level of conscious awareness while still shaping interpretation and evaluation (Philip, 2010: 188). Accordingly, the present study does not treat all identified patterns as equally metaphorical. Instead, it examines them along a continuum ranging from more salient conceptual metaphors to highly conventionalised patterns associated with identity construction and agency attribution. Particular attention was therefore devoted not only to explicit metaphorical mappings, but also to recurrent linguistic configurations through which eating disorders were represented as external agents, adversaries, spaces, trajectories or aspects of the self. These patterns were subsequently interpreted in relation to broader questions of identity and agency, including the extent to which the disorder was linguistically externalised, integrated into self-conceptualisation or associated with varying degrees of perceived control and capacity for action.

To assess distributional differences in the frequency of recurrent metaphorical and figurative patterns across the two corpora, log-likelihood (G^2) statistics were computed. For each pattern, a 2x2 contingency table was constructed comparing its frequency in the English and Italian corpora. Expected frequencies were calculated on the basis of total corpus sizes, allowing for direct comparison despite minor differences in token counts. All log-likelihood calculations were carried out in Microsoft Excel using the standard G^2 formula. Each observed/expected component was calculated separately and summed, with the resulting value multiplied by two, in

accordance with established statistical procedures. Statistical significance was evaluated against conventional critical values for one degree of freedom ($df = 1$).

This approach enabled the identification of statistically significant cross-linguistic differences in the distribution of metaphorical and figurative construals. Statistical significance was interpreted using conventional p -value thresholds. Differences were considered statistically significant at $p < .05$, highly significant at $p < .01$, and very highly significant at $p < .001$. These levels of significance are reported to indicate the strength of the evidence against the null hypothesis of equal distribution across the two corpora.

While the combined use of MPA and MIPVU increases methodological transparency and reduces subjectivity, the identification and interpretation of metaphorical language and figurative construals inevitably involve a degree of interpretative judgement. This limitation is acknowledged and partially addressed through the systematic, corpus-based approach adopted, together with the distinction between highly salient metaphorical framings and more conventionalised discourse-specific patterns.

5. Results and discussion

This section presents the results of the metaphor analysis. It first examines the lexical items used to refer to eating disorders in the two corpora, before turning to the identification and distribution of conceptual metaphors. The section concludes with a cross-linguistic comparison of the metaphorical and figurative construals used to represent eating disorders in the English and Italian corpora.

5.1 Reference to eating disorders

The analysis began with the identification of the lexical items and expressions used to refer to eating disorders in each corpus. This initial step provided an overview of how eating disorders are named and framed within the two online communities under investigation. In Corpus 1 (English), references to eating disorders were most frequently realised through general reference terms, including *ED*, *eating disorder(s)*, and *disorder(s)*, which

together account for 59% of all occurrences. Medical diagnostic terms such as *anorexia*, *bulimia*, *binge*, *binge eating (disorder)*, *BED*, *ARFID* and *OSFED* represent a further 25%. Less specialised expressions were also attested, including *problem(s) (with food)* and *issue(s) (with food)* (6%), *behaviour(s)*, *eating disorder habits* and *eating habits* (4%), *relationship with food* (2%), *illness* (3%), and expressions referring to food-related aversion or compulsion (e.g. *food aversion*, *food averse*, *food repulsed*, *addiction to food*), which collectively account for 1%.

In Corpus 2 (Italian), the most frequent category consists of expressions referring to eating disorders as a problem (*problema/i* or *problema/i con il cibo/alimentari*), which represent 35% of occurrences. General reference terms - such as *DCA*, *disturbi del comportamento alimentare*, *disordine alimentare*, *disturbi/o alimentare/i/dell'alimentazione* and *disturbo/i* - account for 31%. Diagnostic terms, including *anoressia*, *bulimia*, *binge*, *BED* and *binge eating disorder*, represent 28%. Less frequent expressions include *rapporto con il cibo* [transl. relationship with food] (3%) and *malattia* [transl. illness] (3%).

A comparison of the two corpora reveals both shared and language-specific tendencies in the lexical framing of eating disorders. In both datasets, medical terminology and diagnostic labels constitute a large proportion of references, indicating the salience of clinical discourse in online self-representation. At the same time, notable differences emerge in the relative prominence of more evaluative and relational expressions. While the English corpus shows a strong preference for medical terms, the Italian corpus displays a higher frequency of problem-oriented formulations (*problema/i*), which present eating disorders as difficulties or obstacles rather than exclusively as diagnostic entities. Relational framings involving food (*relationship with food/rapporto con il cibo*) occur in both languages, albeit with relatively low frequencies.

These cross-linguistic differences in lexical choice provide an important backdrop for the analysis of metaphorical and figurative language. The varying ways in which eating disorders are explicitly named and categorised across the two communities are likely to shape - and be shaped by - the recurrent metaphorical and figurative patterns through which these experiences are represented. The following section therefore examines the figurative and metaphor-related patterns associated with these terms and expressions, with particular attention to cross-linguistic similarities and differences in the linguistic construal of eating disorders.

5.2 Metaphorical and figurative representations in Corpus 1 (English)

A frequent conceptual metaphor in Corpus 1 (ED IS A PERSON) frames the eating disorder as a person, frequently characterised as an adversary (950 occurrences pmw⁵). Through personification, the eating disorder is portrayed as separate from the individual and able to act on them, rather than just affecting them. This metaphor is realised through linguistic constructions that attribute - in varying degrees ranging from conceptual metaphors to highly conventionalised patterns, agency and intentionality to the disorder. In example 1, the verb *struggle*, defined in its concrete meaning by the *Oxford English Dictionary* as “[t]o contend (with an adversary) in a close grapple as in wrestling” (OED, n.d.), suggests that the ED is represented as an adversary.

- (1) I've struggled with bulimia (C1; Post 12).

In examples 2 and 3, the eating disorder is also represented as an externalised entity associated with a degree of autonomy and agency. Following MIPVU criteria (Steen *et al.* 2010), the expressions *take away* and *be back* involve a semantic contrast between their contextual use and their more basic meanings, which are typically associated with concrete physical action or movement. The OED defines the phrasal verb *take away* as “[t]o remove; to take elsewhere; to deprive a person of”, while uses of *be back* refer to the return of animate entities or individuals to a previous location or state (OED, n.d.). Their use in relation to an eating disorder therefore contributes to a personifying construal in which the disorder is represented as acting upon, or independently of, the individual. Although these expressions are highly conventionalised, they nevertheless form part of a broader discourse pattern in which the eating disorder is represented as distinct from the self and capable of exercising influence over it, either acting against, depriving or returning to the self.

- (2) My ED took away [...] (C1; Post 55)

⁵ To allow for comparison between the two corpora, frequencies were normalised to occurrences per one million words.

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- (3) My eating disorder is back (C1; Post 64)

A related construction depicts the eating disorder as an intrusive agent capable of *hijacking* the self, thereby highlighting a loss of control and reinforcing the asymmetry of agency between the disorder and the person experiencing it (example 4). In these patterns, the eating disorder is positioned as the initiator of action, while the self is framed as the affected participant.

- (4) Getting hijacked by an eating disorder (C1; Post 51)

Control relations are further shown through patterns in which the disorder is presented as something the individual cannot *control* (example 5) but must resist or overcome, often in competitive terms where the disorder can *win* (example 6).

- (5) It [an ED] controls you (C1; Post 41)

- (6) To not let ED win (C1; post 97)

Personification also conveys emotional, perceptual and evaluative abilities to the disorder: it is depicted as able to *fear* outcomes (example 7), *see* symptoms (example 8) and hold perspectives that do not *align* with the individual's values.

- (7) My ED feared (C1; post 40)

- (8) My ED sees my symptoms (C1; post 68)

Taken together, these recurrent patterns consolidate a coherent metaphorical model in which the eating disorder is conceptualised as an agentive, intentional entity, distinct from the self and capable of acting, evaluating and exerting influence. These patterns support the adversarial framings discussed above and reinforce the externalisation of agency in the English-language corpus.

Less frequent but still salient are metaphors framing the eating disorder as a destructive force or natural catastrophe (264 occurrences pmw) (example 9), a path (211 occurrences pmw) (example 10) and a task, form of work or issue to be handled (158 occurrences pmw) (example 11).

(9) An ED [...] destroys everything else (C1; Post 55)

(10) On the path to develop anorexia (C1; Post 65)

(11) Work on reducing binge eating (C1; Post 67)

These framings highlight different aspects of the experience of eating disorders, from loss of control and devastation to ongoing effort and management. Similarly, the metaphor ED IS A (HARMFUL) PLACE (158 occurrences pmw) (example 12) spatialises the experience, highlighting entrapment.

(12) Get away from the ED (C1; Post 86)

In addition to metaphors directly targeting eating disorders, the corpus also exhibits a number of recurrent underlying metaphors structuring the representation of the self, the mind and recovery. The underlying metaphor THE SELF IS COMPOSED OF PARTS (examples 13 and 14), sometimes conceptualised as being in conflict with one another, occurs with a normalised frequency of 264 occurrences pmw.

(13) My ED brain (C1; Post 28)

(14) My ED body (C1; Post 12)

Closely related to this internal conflict framing are underlying metaphors drawing on the domain of war and struggle, including DEALING WITH AN ED IS WAR (132 occurrences pmw) and RECOVERY IS A BATTLE/JOURNEY (132 occurrences pmw), which frame both ED and recovery in terms of confrontation (*fight*), effort and progress (*overcome*, *survive*).

The corpus frequently encodes eating disorders through highly conventionalised entity-based expressions in which the disorder is represented as something that can be *had*, *possessed* or *developed*. Although these constructions are not necessarily perceived as salient metaphors by discourse participants, they nevertheless contribute to recurrent linguistic patterns in which the eating disorder is construed as a bounded entity distinct from the self. Following MIPVU criteria (Steen *et al.* 2010), some of these expressions involve a semantic tension between their contextual meaning and more concrete meanings associated with possession or objecthood, as in examples 15, 16 and 17. In their more basic senses, the

OED defines *have* as “To hold in one's hand, on one's person, or at one's disposal; to hold as property; to be in possession of” (OED, n.d.), *my* as “which I have, hold, or possess” (OED, n.d.) and *develop* as “to progress towards a more advanced or complete physical state” (OED, n.d.). These meanings contribute to a representation of the disorder as something possessed, carried or capable of developing independently of the individual.

(15) I've had ARFID my whole life (C1; Post 7)

(16) It is related to my bulimia (C1; Post 95)

(17) My ED developed (C1; Post 49)

Similarly, evaluative constructions such as example 18 frame the disorder in terms of usefulness or functional value. The OED defines *useless* as “fulfilling no worthwhile aim or profitable purpose” (OED, n.d.), a meaning prototypically associated with objects, tools or artefacts.

(18) Anorexia is useless (C1; Post 55)

Although highly conventionalised, this expression nevertheless contributes to a broader discourse pattern in which the eating disorder is linguistically represented as an entity that can be evaluated in functional terms.

5.3 Metaphorical and figurative representations in Corpus 2 (Italian)

Regarding Corpus 2 (Italian), the analysis reveals a partially overlapping yet distinct distribution of metaphorical and figurative patterns used to frame eating disorders. A frequent conceptual metaphor in Corpus 2 is ED IS A PERSON (454 occurrences pmw). As in Corpus 1, these patterns contribute to a personifying construal in which the disorder is represented as acting upon or independently of the individual. In example 19, the verb *convivere* evokes a configuration of co-presence between the self and the disorder. The *Zingarelli* dictionary defines *convivere* as “vivere abitualmente insieme con altri” [transl. to live habitually together with others] (Zingarelli 2003: 448), a meaning associated with living alongside other people. Similarly, in example 20, the eating disorder is represented as something capable of *arriving*, thereby suggesting movement and autonomous presence.

- (19) Convivere con questo disturbo [transl. Living with this disorder] (C2; Post 24)
- (20) Non ci posso credere che [...] arrivi la bulimia [transl. I can't believe [...] bulimia has arrived] (C2; Post 5)

Less frequent conceptual metaphors are ED IS A (HARMFUL) PLACE (85 occurrences pmw) (example 21) and ED IS THE SELF (85 occurrences pmw) (examples 22 and 23). Unlike the externalising patterns discussed above, the latter removes the distinction between the individual and the disorder, presenting the eating disorder as constitutive of the self rather than as a separate entity.

- (21) Ne sono uscita [transl. I have come out of it] (C2; Post 7)
- (22) Io un DCA [transl. I [am] an eating disorder] (C2; Post 4)
- (23) Ho scoperto di essere BED [transl. I discovered I am a BED] (C2; Post 24)

The eating disorder is also represented through conventionalised patterns as a destructive force or natural catastrophe (85 occurrences pmw), highlighting its overwhelming and uncontrollable nature (example 24) and as a story or narrative (142 occurrences pmw) (example 25), framing the experience in terms of plot, development and personal meaning.

- (24) La bulimia [...] provoca disastri [transl. Bulimia causes disasters] (C2; Post 7)
- (25) Le storie di BED [transl. BED stories] (C2; Post 24)

Corpus 2 also contains highly conventionalised expressions which, although not necessarily perceived by discourse participants as salient metaphors due to their routine use in referring to medical conditions, nevertheless contribute to recurrent patterns in which the disorder is construed as an entity distinct from the self. One such pattern represents the eating disorder as a source of pain (681 occurrences pmw) and highlights the experiential impact of the condition rather than its agency or autonomy (example 26).

- (26) Soffro di binge [transl. I suffer from binge] (C2; Post 14)

Another recurrent conventionalised pattern represents the eating disorder as something that can be possessed or handled by the individual (397

occurrences pmw). In example 27, the verb *avere* [transl. have] draws on meanings associated with possession. The *Zingarelli* dictionary defines *avere* in its concrete sense as “possedere, con riferimento a beni materiali” [transl. to possess, with reference to material goods] (Zingarelli 2003, 186).

(27) Ho un disturbo alimentare [transl. I have an eating disorder] (C2; Post 24)

Similarly, the eating disorder is frequently represented as a problem (312 occurrences pmw), as illustrated in example 28. This representation foregrounds difficulty and effort requiring management or intervention rather than personification.

(28) È un problema di bulimia [transl. It is a problem of bulimia] (C2; Post 3)

Less frequent but still recurrent are patterns representing the eating disorder as an experience or life phase (114 occurrences pmw) (example 29).

(29) La mia esperienza di BED [transl. My experience of BED] (C2; Post 24)

These construals position the individual within the experience of the disorder and frame it as a condition that one can potentially come out of or leave behind.

5.4 Comparison between Corpus 1 (English) and Corpus 2 (Italian)

A direct comparison of Corpus 1 (English) and Corpus 2 (Italian) highlights both convergence and divergence in the metaphorical and figurative construals used to represent eating disorders, with log-likelihood statistics identifying those contrasts that are statistically significant. As noted above, log-likelihood values were computed using Microsoft Excel and evaluated against standard significance thresholds.

Several patterns show statistically significant distributional differences between the two corpora. Entity-based construals in which the eating disorder is represented as something possessed or carried by the individual are significantly more frequent in Corpus 1 than in Corpus 2 (LL = 4.38, $p < .05$). In the English corpus, these patterns are frequently extended through constructions that represent the disorder as something developed or produced by the self, thereby emphasising a greater degree of personal involvement and agency.

A further significant contrast concerns personifying and adversarial construals of the eating disorder, which are present in both corpora but occur with significantly greater frequency in Corpus 1 (LL = 6.52, $p < .01$). The English-language data therefore show a stronger tendency to externalise the disorder by representing it as a partially autonomous entity distinct from the self, thereby reinforcing a linguistic separation between the individual and the eating disorder. Similarly, the underlying metaphor *THE SELF IS COMPOSED OF PARTS* appears exclusively in Corpus 1 and shows a very high level of statistical significance (LL = 13.15, $p < .001$), indicating a corpus-specific tendency to conceptualise the eating disorder as a separate or antagonistic component of the self.

Conversely, narrative-based construals framing the eating disorder as a story or personal narrative emerge as a statistically distinctive feature of Corpus 2 (LL = 7.30, $p < .01$). Corpus 2 also displays a statistically significant identity-based pattern absent from Corpus 1, namely *ED IS THE SELF*, in which the distinction between individual and disorder becomes linguistically blurred.

By contrast, some recurrent patterns that are shared across the two corpora are not statistically significant in terms of distribution. Construals representing the eating disorder as a (harmful) place (LL = 0.81) and a destructive force/natural catastrophe (LL = 3.49) occur with comparable frequency in both corpora. These shared patterns rely on spatial and force schemas to render the abstract experience of eating disorders more concrete, framing the condition as an environment one is situated in or an overwhelming force acting upon the individual. Together, these findings suggest that while both corpora draw on partly overlapping figurative resources, they differ in the extent to which they externalise the disorder and in how identity and agency are linguistically represented.

5.5 Identity framing and agency across the two corpora

The comparison of the metaphorical and figurative constructions found in the English- and Italian-language corpora reveal distinct ways of construing eating disorders in relation to identity and agency. While both corpora draw on a shared range of embodied, spatial and ontological metaphors, their relative distributions suggest distinct cultural tendencies in how individuals position themselves with regard to the disorder and perceive their capacity for action.

With respect to identity, the English corpus shows a marked tendency to maintain a linguistic separation between the self and the eating disorder. This can be seen in the higher frequency of externalising and personifying patterns, as well as in the underlying metaphor *THE SELF IS COMPOSED OF PARTS*. These patterns allow speakers to position the disorder outside the core self, either as an external adversary or as a distinct internal component that can be opposed.

By contrast, the Italian corpus employs more frequently patterns that eliminate the boundary between self and disorder, most notably through the conceptual metaphor *ED IS THE SELF*, which is statistically distinctive of Corpus 2. In these cases, the eating disorder is not represented as something one has or confronts, but something one is. This fusion suggests an identity framing in which the disorder becomes constitutive of the self, potentially limiting opportunities for redefining the self outside the disorder. The Italian corpus also displays a greater prominence of narrative-based construals, which frame the eating disorder as a life story. While such representations may facilitate meaning making, they may also reinforce the association between identity and the condition.

Differences in identity framing are reflected in how agency is distributed across the two corpora. In the English corpus, agency is frequently reclaimed by the self through opposition. Personification and conflict-based patterns position individuals as active agents capable of resisting, challenging or managing the disorder. Even when the eating disorder is represented as powerful or intrusive, these configurations still allow for the possibility of intervention and change. The metaphor *ED IS A PATH* also conveys a certain degree of agency. Here, the eating disorder is framed as a trajectory, and the individual is positioned as a traveller moving along it. The condition is therefore perceived as transitory. Although the path may be difficult, the individual retains the ability to move and progress, thereby supporting a medium-to-high level of agency.

In the Italian corpus, agency is often weaker. While patterns representing the eating disorder as a person, a possession or a problem do introduce elements of responsibility and effort, they coexist with configurations that merge the disorder with identity, potentially making it more difficult for individuals to perceive themselves as active and autonomous agents.

Several patterns shared by both corpora appear to reflect broadly shared experiential grounding rather than culture-specific attitudes. However, differences in their distribution contribute to distinct

representations of agency and identity across the two corpora. When the eating disorder is conceptualised as a harmful place, agency is relatively low to medium: the disorder is framed as an external space in which the individual is temporarily located. In this configuration, the person is positioned as being within the disorder rather than as actively producing it, while recovery is structured as an escape or movement out of a damaging environment. Agency is therefore partially available, but it is oriented toward leaving the space rather than transforming it.

By contrast, patterns framing the eating disorder as a destructive force are associated with relatively low levels of agency. In this framing, the eating disorder is represented as an overwhelming external force acting upon the individual, who is positioned primarily as affected rather than as an agent. While this may reduce perceptions of blame and personal responsibility, it may also limit the perceived possibility of intervention or recovery, as control is largely attributed to the disorder itself. These variations highlight how recurrent metaphorical, figurative and highly conventionalised linguistic patterns may influence perceptions of agency and recovery differently across cultural contexts.

6. Conclusion

This study investigated how eating disorders are linguistically construed in English and Italian online discourse through metaphorical and figurative patterns and examined what these recurrent representations reveal about cultural understandings of lived experience, identity and agency. With respect to research question 1, the findings show that both corpora rely on a shared set of recurrent metaphorical and figurative patterns in online conversations about eating disorders. Across posts in English and Italian, eating disorders are frequently represented as possessions, persons or enemies, harmful places, problems and destructive forces. These patterns draw on embodied domains such as space, movement and force to make abstract and complex experiences more communicable. The recurrence of similar figurative configurations across both languages suggests that some aspects of eating disorders discourse may be grounded in broadly shared experiential schemas.

At the same time, the analysis also revealed cross-linguistic differences in the relative prominence of specific patterns. The English corpus shows a higher frequency of personification and possession

metaphors. The Italian corpus, by contrast, shows a greater prominence of narrative-based patterns, and also includes the metaphor *ED IS THE SELF*, which does not occur in the English corpus. These differences indicate that, although the two languages draw on partially overlapping figurative resources, they emphasise different aspects of the eating disorder experience.

With respect to research question 2, these distributional differences result in distinct constructions of identity and agency. In the English corpus, patterns that externalise the disorder tend to maintain a boundary between the self and the eating disorder. By representing the disorder as an opponent or as a separate entity, these framings position individuals as agents who are potentially capable of resisting, confronting or managing it. In the Italian corpus, where the eating disorder is more frequently represented through identity-based patterns, the distinction between person and disorder becomes less clearly defined. As a result, agency tends to be more often attenuated. These findings suggest that recurrent figurative patterns may shape how individuals position themselves in relation to the disorder and how much control they perceive themselves to have over it. The study also has practical implications: since metaphors can shape perceptions of agency and identity, consideration of linguistic framing may support clinicians and organisations in communicating about eating disorders in ways that reduce stigma and promote a sense of possibility and change.

Finally, some limitations of the present study should be acknowledged. The analysis is limited to two online forums and two languages, which restricts the generalisability of the findings. Moreover, online communities may not be representative of offline or clinical populations. In addition, although the combined use of MPA and MIPVU increases methodological transparency, the identification and interpretation of metaphorical and figurative patterns inevitably involve a degree of interpretive judgement. Future research could expand the comparison to additional languages and communicative settings, incorporate larger and more diverse corpora and combine corpus-assisted methods with interviews or clinical data.

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Visual and Verbal Tropes in Medical Knowledge Dissemination: An English-Italian Cross-Linguistic Study of Lactose Intolerance Websites

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Abstract

The present research analyzes how websites run by clinics and hospitals disseminate medical knowledge on lactose intolerance and how they transmit complex concepts to a general audience by means of visual and verbal figurative tropes. In line with another investigation (Cesiri, forthc.), this study compares four healthcare institutions’ websites in English and four similar websites in Italian by identifying verbal figurative tropes using Lakoff and Johnson’s (1980) Conceptual Metaphor Theory (CMT), and Kövecses’s (2020) Extended Conceptual Metaphor Theory (ECMT), while visual tropes are analyzed through Kress and van Leeuwen’s (2020) model and then interpreted via CMT/ECMT. Results from the two sets of web pages are then interpreted using the concept of (inter)cultural dimensions (Hofstede, 2011) to account for the differences that may exist in the figurative representation of lactose intolerance to the different audiences. Findings reveal that popularization of lactose intolerance is not a culturally neutral process; rather, it is shaped by deeply embedded socio-cultural norms regarding authority and agency, thereby highlighting the necessity for health communicators to adapt multimodal strategies to local cultural expectations to ensure the effective dissemination of specialized medical knowledge across linguistic and cultural borders.

Keywords: Lactose Intolerance; Multimodal Figurative Tropes; (Extended) Conceptual Metaphor Theory; English; Italian; Intercultural Dimensions

1. Introduction

The numerous studies available on medical discourse have often investigated the constructive role that figurative language plays when transmitting specialist knowledge, especially in expert-patient communication (Rossi, 2025). Metaphors are rhetorical devices productively employed by clinicians, patients, and caregivers to conceptualize health and illnesses (Demjén and Semino, 2017); metaphors are also utilized in digital health discourse to navigate the complexities of medical uncertainty and patient engagement, showing that the concrete-to-abstract mapping remains a vital tool for making sense of technical or distressing information in the modern age (Plastina, 2022).

The way in which metaphors are employed to conceptualize illnesses and conditions has been investigated with greater frequency in certain cases more than others. Food allergies, for instance, seem to have attracted little attention with only a few contributions dedicated to how these conditions are conceptualized by means of metaphors, or figurative tropes in general. Recent studies have specifically conducted research on metaphors in food-related conditions in other fields than linguistics and have considered metaphor use in just one language: it is the case of Stjerna and Brady (2023), for instance, who examines the use of metaphors in baby food allergies as a sociological phenomenon in Swedish, while Dobbin-Williams (2024) investigates the use of metaphors in English in mothers with children and teenagers who suffer from life-threatening food allergies. In this case, metaphors are considered from a philosophical-hermeneutics perspective.

As concerns other food-related conditions, to the best of this author's knowledge, no studies are available that consider how expert-expert communication or expert-patients/-laypeople communication proceeds, be it literal or figurative. The present research, therefore, seeks to fill this gap by focusing on the specific condition known as lactose intolerance. In line with another contribution (Cesiri, *forthc.*), this study examines figurative language in four healthcare institutions' websites in English (*Mayo Clinic, the Cleveland Clinic, Johns Hopkins Medicine, the National Institute of Diabetes and Digestive and Kidney Disease*) and four similar websites in Italian (*IRCCS Humanitas Research Hospital, Ospedale Pediatrico Bambino Gesù, Istituto Superiore di Sanità, Fondazione Veronesi*). The aim is to analyze, qualitatively, how these websites – run by clinics and/or hospitals – disseminate medical knowledge on lactose intolerance and how they manage to transmit complex concepts to laypeople. Particular attention is paid to the use of visual and verbal

tropes when specialists describe the condition and its symptoms. Verbal metaphors are identified by means of Lakoff and Johnson's (1980) Conceptual Metaphor Theory (CMT), used as both theoretical framework and operational protocol to identify metaphors, and complemented by Kövecses's (2020) Extended Conceptual Metaphor Theory (ECMT) to interpret findings. Visual tropes are analyzed using Kress and van Leeuwen's (2020) model and then interpreted via CMT and ECMT. This combined approach allows the study to assess whether, and to what extent, the association of visual and verbal figurative expressions in the same communicative space facilitates the transmission of specialized concepts to lay audiences in English and in Italian, respectively.

Finally, considering that the state-of-the-art also presents a gap in the presence of comparative studies investigating food-related conditions, the present contribution interprets the results from the websites in English and those in Italian using Hofstede's (2011) (inter-)cultural dimensions to account for differences/similarities that might exist in the distribution of the tropes chosen to conceptualize lactose intolerance to the two corresponding audiences.

The present paper is structured as follows: Section 2 introduces lactose intolerance, describing it from the medical viewpoint. Section 3 explains the web pages included in the study and the methodology used to analyze them, while Sections 4 and 5 contain the analyses of the visual and verbal tropes. Section 6 elaborates results using the concept of (inter)cultural dimensions. Finally, Section 7 offers some concluding remarks.

2. Lactose intolerance: background information

Lactose intolerance is clinically defined as a “condition characterized by symptoms attributable to lactose malabsorption. This can be caused by a reduced or absent activity of lactase or by a reduced or absent synthesis of the same enzyme” (Catanzaro et al., 2021: 23). There are three types of lactose intolerance (del Carmen Toca et al., 2022): rare congenital primary (genetic, starts in infancy), common late-onset primary (genetic, permanent, starts in childhood), and late-onset secondary (temporary, non-genetic, caused by external factors, regressing with specific dietary changes). Typically, people with lactose intolerance experience symptoms such as pain, abdominal distension, abdominal gas, and diarrhea (*ibid.*).

“Epidemiological survey data show that 70% of the world’s population has some degree of lactase deficiency with ethnic and age differences in incidence” (Li *et al.*, 2023: 1).

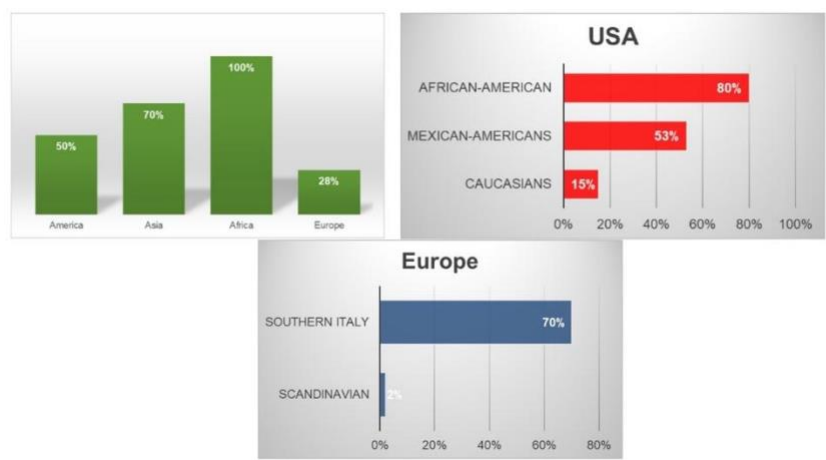


Figure 1. Incidence of Lactose Intolerance on Global Population (Catanzaro *et al.* 2021)

As Figure 1 shows, people with lactose intolerance concentrate on the African continent, with a direct link to the corresponding ethnicity, which also explains the marked presence of African Americans with this condition. Data provided for Europe reveal a predominance of people with lactose intolerance in Southern Italy.

Dekker *et al.* (2019) demonstrate that there has been a +7.5% increase in the number of lactose free dairy products marketed in the years 2017-2022 (Figure 2), which testifies the general interest of the market for these products.

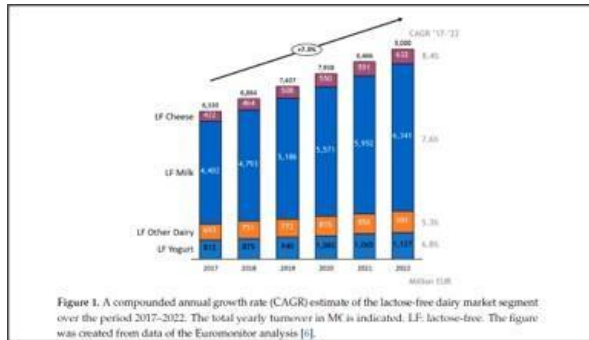


Figure 2. Graph on the production of lactose free products (Dekker et al. 2019)

This trend might be attributed to the global incidence of the condition but also to other diet choices that favor a lactose free diet since it is perceived as a healthier option even when no health-related conditions are present that would justify the elimination of lactose from one's diet (*ibid.*).

The global incidence of lactose intolerance contrasts with a widespread public unfamiliarity with the condition (Di Stefano *et al.*, 2022): this would justify the numerous media outlets addressing the condition; for instance, a manual Google Search revealed more than 400 dedicated blogs and various commercial supplement websites offering medical advice, a significant informative role is played by clinics and hospitals. The present study specifically examines these institutional websites, in line with Cesiri's (forthc.) research concerning the popularization strategies of domain-specific terminology on the condition. While the forthcoming study focuses on phraseology, the present contribution explores how expert websites disseminate specialist knowledge to laypeople with specific attention paid to visual and verbal tropes and how they are used to conceptualize complex medical data into accessible information for lay audiences in English and in Italian.

3. The present study: dataset and methodology

The eight websites from Cesiri (forthc.), four English and four Italian, were also used for the present investigation. Identified via Google searches⁶ for

⁶ To ensure the highest possible degree of replicability and to mitigate the effects of algorithmic personalization, searches were conducted on 13/01/2026 using incognito browsing mode with location services disabled.

lactose intolerance and its symptoms (i.e., ‘lactose intolerance/*intolleranza al lattosio*’; ‘lactose intolerance symptoms/*sintomi intolleranza al lattosio*’, respectively), these hospitals’ and clinics’ websites were the only ones appearing on the first results page for both languages. Consequently, all were included, with the English websites based in the USA⁷:

- the Mayo Clinic (<https://www.mayoclinic.org/diseases-conditions/lactose-intolerance/symptoms-causes/syc-20374232>; MC),
- the Cleveland Clinic (<https://my.clevelandclinic.org/health/diseases/7317-lactose-intolerance>; CC),
- the Johns Hopkins Hospital (<https://www.hopkinsmedicine.org/health/conditions-and-diseases/lactose-intolerance>; JHH),
- the National Institute of Diabetes and Digestive and Kidney Disease (<https://www.niddk.nih.gov/health-information/digestive-diseases/lactose-intolerance>; NIDDK).

The four websites in Italian are listed below. One pediatric hospital was included in the analysis since the web page addresses a general kind of audience composed of children, their families, as well as adult patients. Rather than focusing on isolated sections or specific images, the analysis considers the entire digital document – including headings, body text, and visual elements. This approach ensured that the figurative tropes were identified within their original structural and contextual environment.

- IRCCS Humanitas Research Hospital (<https://www.humanitas.it/malattie/intolleranza-al-lattosio/#:~:text=Il%20processo%20di%20fermentazione%20ricchi>

⁷ The NIDDK website content is copyright-free as specified on the institution’s website (<https://www.niddk.nih.gov/copyright>; last visited 13/01/2026). Despite extensive efforts, other US and Italian institutions have not replied to permission requests at the time of writing this article. The author welcomes notifications regarding copyright corrections for future amendments.

ama, testa%20sposatezza%20ed%20eruzioni%20cutanee; HRH),

- Ospedale Pediatrico Bambino Gesù (<https://www.ospedalebambinogesu.it/intolleranza-al-lattosio-80150/>; BG),
- Istituto Superiore di Sanità (<https://www.issalute.it/index.php/la-salute-dalla-a-alla-z-menu/i/intolleranza-al-lattosio>; ISS),
- Fondazione Veronesi (<https://www.fondazioneveronesi.it/educazione-alla-salute/glossario/lattosio>; FV).

Figures 3 and 4 show the web pages dedicated to lactose intolerance in English and in Italian, respectively, illustrating content organization of the visual and verbal components.

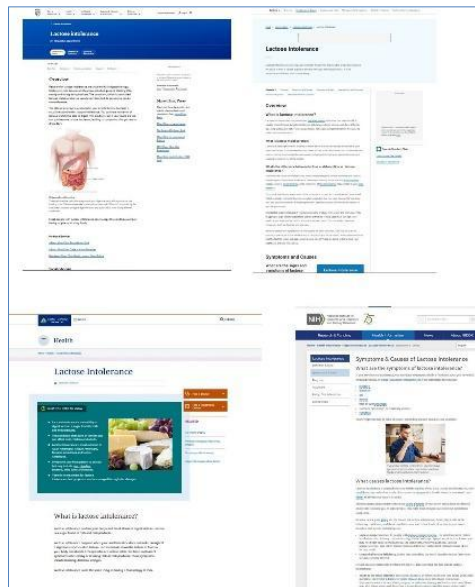


Figure 3. Web pages dedicated to lactose intolerance in English

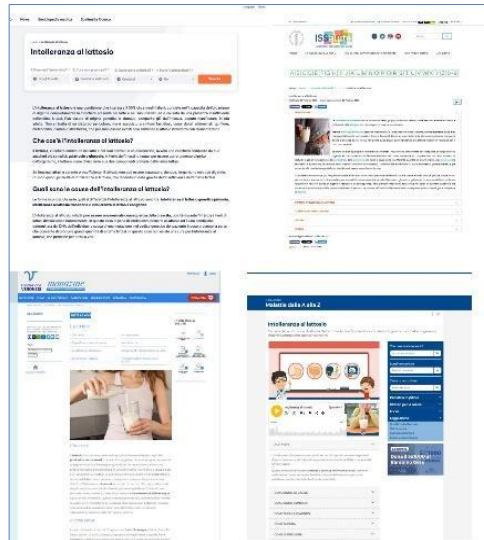


Figure 4. Web pages dedicated to lactose intolerance in Italian

The current analysis is divided into two parts: Section 4 and 5 explore how visual and verbal tropes separately conceptualize the condition. The broader question of how the multimodal organization of this content aids in knowledge dissemination is reserved for future study (see Section 7).

In order to identify the visual tropes, images depicting the condition, its symptoms, and remedies were analyzed using Kress and van Leeuwen's (2020) model. This framework explores how images construct symbolic meanings and metafunctions through a visual grammar. Specific attention is paid to colors and figures as semiotic resources communicating complex socio-cultural meanings. Color is evaluated via six parameters (saturation, luminescence, differentiation, modulation, purity, and hue) that in the model fulfil ideational, interpersonal, and textual functions. Simultaneously, represented participants are categorized into narrative or conceptual structures based on vectors. Narrative processes depict dynamic doing, while conceptual processes represent a stable essence through classificatory or symbolic arrangements, such as carrier and possessive attributes. Finally, the model considers the interpersonal relationship established through the gaze, defining the social and psychological connection between the represented participants and the viewer.

Any instances of tropes identified in the images were further interpreted using Lakoff and Johnson's (1980) CMT and its further elaboration, Kövecses's (2020) ECMT. This ensured the identification of

the domains used to conceptualize the condition in English vs. in Italian. CMT was also employed to identify and analyze the verbal metaphors in the web pages in the two languages.

CMT argues that metaphors are fundamental cognitive tools structuring human thought, maintaining that our conceptual system is inherently metaphorical and facilitates the understanding of abstract target domains through systematic mappings from concrete source domains. This foundational view has later been refined by scholarship, which moves beyond purely cognitive internalism to address the functional and social dimensions of metaphorical language. For instance, Semino (2008) emphasizes the necessity of analyzing metaphors within actual discourse, illustrating how they are not just mental mappings but can be strategically deployed across different genres – such as literature, politics, and science – to shape specific ideological perspectives and emotional responses. Steen (2017) also distinguishes between automatic, subconscious cognitive mappings and those metaphors used intentionally as a communicative device to shift a listener's perspective, thereby highlighting the complex interplay between thought and conscious interaction. In line with these interpretations, Kövecses (2020) further expanded CMT by emphasizing contextual variation. While some metaphors are near-universal due to shared physiology, he postulated that their manifestations are shaped by cultural and personal history through the so-called pressure of coherence. Therefore, ECMT argues that metaphors are both products of the body and reflections of the speaker's specific environment.

As a foundational approach to the study of metaphors, CMT can be used as both a theoretical framework and an operational protocol for investigating cognitive structures (Lakoff and Johnson, 1980). Theoretically, as already explained, CMT posits that metaphors are not merely stylistic creative devices but are fundamental mechanisms of thought that map concrete source domains onto abstract target domains. Methodologically, it functions as an operational protocol, which provides systematic, step-by-step criteria for distinguishing metaphorical from literal language by comparing a lexical unit's contextual meaning against its more basic, concrete, or historically prior sense (Lakoff and Johnson, 1980). This dual nature makes CMT a particularly suitable choice for cross-cultural and intercultural studies as it allows researchers to identify metaphors rooted in shared human experience while providing a standardized system to detect linguistic variations (Kövecses, 2005; Li, 2023).

In fact, to identify a metaphor, Lakoff and Johnson (1980) apply a specific method, which consists in first isolating a Target Domain, which is typically an abstract or complex concept, and then observing how it is described using the vocabulary and logic of a more concrete or physical Source Domain. The operational center of this method involves tracing systematic correspondences, or mappings, where the internal structure of the Source Domain is superimposed onto the Target Domain to allow for reasoning. Subsequently, Lakoff and Johnson (*ibid.*) indicate to look for clustering and consistency in language to prove that these are not isolated instances but part of a pervasive system that shapes how we perceive and act within the world. By analyzing these cross-domain mappings, they demonstrate that the metaphorical nature of an expression is confirmed when the logic of the physical world (the Source) is used to govern the inferential patterns of the abstract world (the Target), thereby revealing the underlying conceptual framework that organizes human experience (*ibid.*).

After the application of this method to identify the verbal metaphors used in the web pages, and to account for the possible distinctions of intercultural communication, this study integrates the findings from the applications of CMT with the use of Kövecses's (2020) ECMT. ECMT expands the traditional CMT's focus on static, pre-stored mappings by emphasizing real-time production driven by the so-called 'pressure of coherence' with one's surroundings. This involves four context types: Situational Context (physical, social, and cultural environments), Discourse Context (linguistic surroundings and topics), Bodily Context (the speaker's immediate physical state), and Conceptual-Cognitive Context (shared ideologies and cultural models). ECMT explains how specific communicative environments creatively influence metaphor selection, connecting universal thought with diverse linguistic applications (*ibid.*).

Therefore, while CMT is used in this study to identify the domains in which visual and verbal metaphors conceptualize lactose intolerance, ECMT is used to identify the contexts to which these metaphors are preferably assigned in English vs Italian. Finally, differences in the results from the English and Italian websites are discussed taking into consideration elements of (inter-)cultural dimensions (Hofstede 2011; see Section 6) to account for differences/similarities that might exist in the distribution of the metaphors chosen to conceptualize lactose intolerance to the audiences in English and in Italian.

4. Visual Tropes⁸

4.1 The Web Pages in English

Starting with the analysis of the visual metaphors in the MC's web page dedicated to lactose intolerance, the only image offered to the audience is the one in Figure 5.



Figure 5. Illustrating lactose intolerance by MC

The image is composed using an abstract modality rather than a naturalistic one (Kress and van Leeuwen, 2020). While colors are not naturalistic, they possess high modality in the medical context through effective color coding for lay audiences. Furthermore, the figure is a stylized human torso: by removing specific individual traits, the designer ensured that the representation remained universal. Even though the figure appears to be a male, this allows readers to project themselves onto the diagram. Consequently, they better understand their own digestive processes and the

⁸ In order to clarify the nomenclature of the tropes used in this study, metaphors are considered as in CMT (Lakoff and Johnson, 1980), which formally defines them as a cross-domain mapping where one conceptual domain (the target) is understood in terms of a different, typically more concrete, domain (the source; see also Landau, 2018 and Müller *et al.*, 2022). Metonymy is defined as a mapping that occurs within a single conceptual domain or Idealized Cognitive Model (ICM). It relies on contiguity, or a 'replacement' relationship where one entity provides mental access to another entity with which it is physically or conceptually associated (Littlemore, 2015). Finally, synecdoche is traditionally viewed as a subcategory of metonymy and is operationalized as a 'part-whole' or 'whole-part' relationship within the same domain (Seto, 1999).

specific mechanisms involved in lactose intolerance. This abstraction facilitates clear knowledge transmission regarding the condition. The image is, in fact, used to represent the organs/system involved in lactose intolerance. However, this is the only image available to illustrate the whole condition, so rather than a visual metaphor, we might consider it a visual synecdoche (Willerton, 2005), namely one image used to indicate the entire condition, i.e., one image representing the system/organs involved in generating the symptoms, where the enzyme is (not) produced, and the location of the condition itself.

The second web page under analysis is the one by the CC, which contains three images that describe different aspects of the condition. They are reported and analyzed in the same order as they are found on the web page.

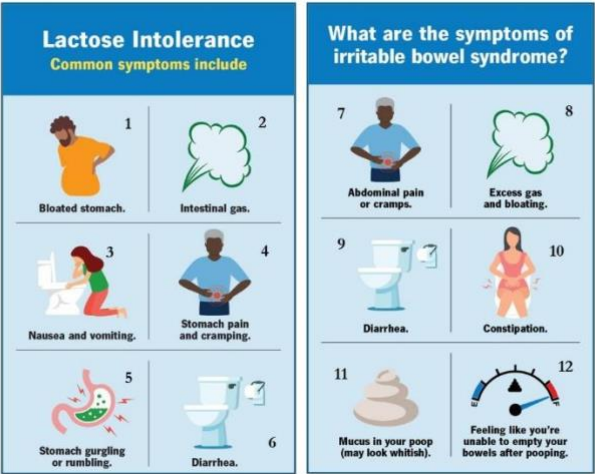


Figure 6. Illustrating symptoms of lactose intolerance (CC)

Figure 6 displays the first two CC images, summarizing lactose intolerance symptoms. The low-saturation, dull colors and blue background may evoke serenity, counteracting negative emotions regarding the condition (Kress and Van Leeuwen, 2002), as confirmed by cross-cultural studies on the impact of this color on human emotions (Güneş and Olguntürk, 2020; Xu, 2025). The human figures utilize abstract modality, while the stylized forms enhance conceptual structures over concrete anatomical details. This abstraction fulfills the Interpersonal Function of Shaping Interaction by creating psychological distance between viewers and participants (Kress and van Leeuwen, 2020). This level of objectivity encourages a detached

experience, allowing the web page to transmit specialist medical content more effectively. Ultimately, these visual choices prioritize the clear communication of underlying concepts rather than realistic surface appearances.

As for the visual tropes, we notice that several rhetorical devices are used to indicate symptoms⁹. Square 1 may be considered a literal representation since it refers to bloated stomach and represents a man with an actual bloated belly, while square 11 displays almost realistically what the audience should expect to see. Squares 2 and 8, 3, 6 and 9 might be considered cases of visual euphemisms that Van Winkle (2024: 54) defines as “a trope [that] enables the depiction of things that, because they are taboo, graphic or unsightly, would otherwise be difficult to show”. In Figure 6, all visual euphemisms are used to refer to products and sounds of the human bowels that, amongst the bodily functions, are generally considered taboos (Chan et al., 2023).

The symptoms shown in Squares 4 and 7, 5, and 12 are cases of visual metaphors. Squares 4, 7, and Square 5 show stomach pain and cramping, and stomach gurgling/rumbling, which are illustrated with symbols of alarm: they can all be conceptualized as LACTOSE INTOLERANCE STOMACH SYMPTOMS ARE THREAT, which is signaled not only by the lightning bolt symbol – typically used to represent danger or high voltage – but also by the posture of the human figures. Their hands are held over their abdomens as if shielding themselves from the onset of cramps and pain. On the other hand, Square 12 displays the feeling of not fully emptying one’s bowels as a tachometer, thereby conceptualizing the symptom as the metaphor INTESTINE IS VEHICLE (ultimately a representation of BODY IS MACHINE metaphor). The interpretation of Square 10 remains ambiguous. Displaying constipation, it might be a visual euphemism, yet alarm symbols appear to conceptualize lactose intolerance symptoms as danger, evoking cramps. A woman on a toilet links it to Squares 6 and 9, despite depicting the opposite phenomenon, thus indicating non-figurative meaning. Consequently, this symptom’s communicative effectiveness fails, appearing redundant or confusing.

According to ECMT (Kövecses, 2020), these tropes can be immediately assigned to the Bodily Context since they describe, figuratively, the physical sensations that lactose intolerance creates in the patients.

⁹ The image in Figure 6 (right) shows Irritable Bowel Syndrome (IBS) symptoms, included because the CC web page links IBS with lactose intolerance due to overlapping symptoms.

However, the metaphors can also be assigned to the Situational Context constituted by the medical environment in which the tachometer is a precision instrument used to measure performance and limits.

Finally, Figure 7 is the last one to appear in the web page and shows the kind of food suggested as viable alternatives that help to reach the daily quota of calcium and other nutrients contained in dairy products.



Figure 7. Plant-based alternatives to dairy products (CC)

The composition of Figure 7 is meaningful, following Kress and van Leeuwen (2020): the milk bottle occupies the center that, in the model, represents the most important element of an image to which all other elements are secondary. The margins of the image are occupied by the representations of the different kinds of vegetable elements that are the dependent elements that provide context and explain the center by showing the various plant-based alternatives to the animal-produced milk. In this representation, the bottle has the highest salience due to its central placement, its larger size, and the contrast of the bright white against the blue background. Colors are saturated, mostly flat with very little shading. Low modulation reduces naturalism and increases the abstract modality (*ibid.*). In this image, both the bottle of milk and the individual plant-based elements can be figuratively considered cases of visual synecdoche, whereby a single image or object is used to represent something else with which it is closely associated or of which it is a part (Hawkins, 2013). This means that the image is not seeking to show viewers specifically milk but represents dairy products in general, while the other plant-based alternatives represent products derived from the corresponding nuts, cereals or legumes, respectively.

The JHH web page contains only one image that is shown in Figure 8, preferring to explain the condition through verbal descriptions. In the

web page this photograph appears next to the text that first defines the condition to the audience.



Figure 8. Dairy products as symbols of lactose intolerance (JHH)

Compositionally speaking, the use of a green background for the whole page might be in association with the natural products of milk. According to Kress and Van Leeuwen (2002), this is the most widespread association of green in many cultures, deriving from its presence in plants, forests, and spring landscapes. It can also symbolize freshness and vitality in contrast with the processed foods that some kinds of cheese might represent and the message to choose healthier and simpler diet options.

JHH chose a real photograph of several kinds of cheese to represent dairy products, which may be interpreted both in its literal, non-figurative sense, since they are the actual kinds of food that trigger symptoms, and as a case of visual metonymy, suggesting an association with the condition as a whole.

The NIDDK web page dedicated to the condition contains seven images to illustrate the condition. The web page is divided into sub-sections that can be accessed via a menu available on the left-hand side of the main page.



Figure 9. Images from the General Introduction (left) and Definition Section (right) (NIDDK)

Figure 9 shows the same image that is, however, displayed in two different sections of the NIDDK web page: the General Introductory Section and the Definition Section, respectively.

Real photographs of dairy products such as milk, yogurt, and cheese appear in a kitchen setting. Highly saturated colors and naturalistic modality anchor these images to reality. While displaying actual trigger foods, they also function as visual metonymies. Positioned in the condition's introduction and definition sections, these pictures serve to create a direct association with the condition.

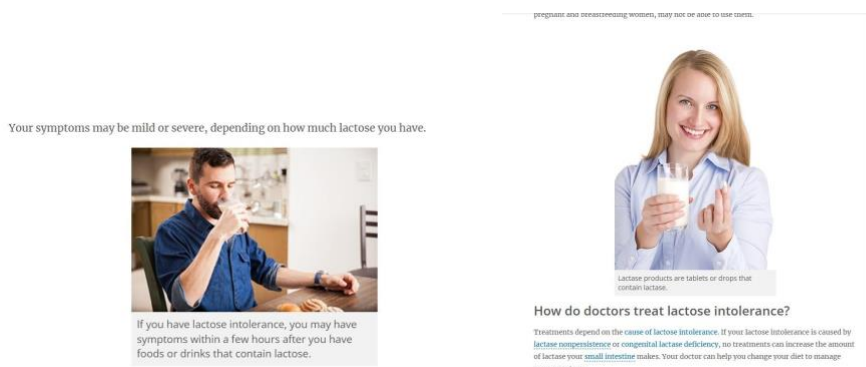


Figure 10. Images from the Symptoms (left) and Treatment (right) Sections (NIDDK)

The two images in Figure 10 are taken, respectively, from the Symptoms and Treatment Sections; they use real photographs, enhancing naturalism. They feature a man and a woman with significant distinctions. Figure 10 (right) displays a so-called offer image (Kress and van Leeuwen, 2020), in which the man avoids direct eye contact with the viewer, focusing instead

on drinking his milk. This style offers the participant to the viewer's gaze without creating direct interaction. Consequently, the viewer remains an objective observer. Such imagery is standard for web pages aiming to provide purely informative content (*ibid.*). The second image (left) in Figure 10 exemplifies demand images. Here, the smiling woman features the represented participant looking directly at viewers to establish immediate relationship. This gaze demands attention, positioning the viewer as a direct recipient. Used to convey intimacy, threat, or appeal, this technique here functions as an invitation (Kress and van Leeuwen, 2020). It encourages people with lactose intolerance to use supplements, promising they can enjoy milk without symptoms, just like her.

Figuratively speaking, both pictures can be considered cases of visual metonymy since the actions symbolized by the participants are associated with the corresponding effect related to the condition. Drinking milk (left image) can be metonymically associated with symptoms, while the sequence Pill-Milk-Smiling Woman (right image) in the section dedicated to Treatment can be a metonymy for the supplements used to integrate the missing enzyme that allow people with lactose intolerance to drink milk.

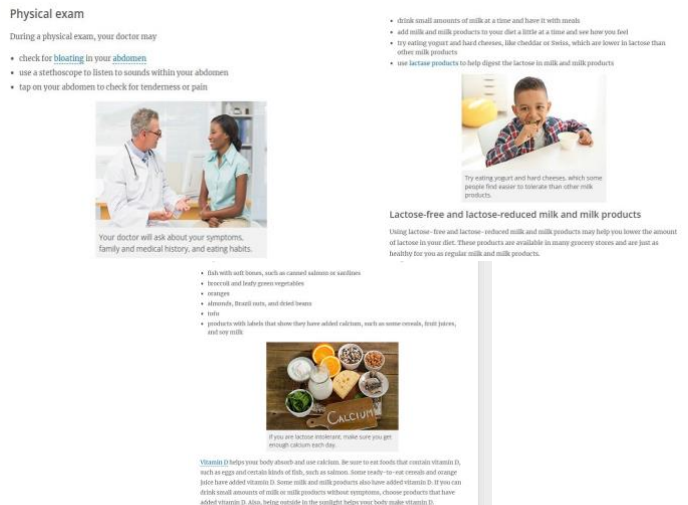


Figure 11. Images from the Diagnosis (left), and Eating, Diet, and Nutrition (center and right) Sections (NIDDK)

The last three images available for the NIDDK web pages are from the Diagnosis section, and from the Eating, Diet and Nutrition Section. The Diagnosis photograph (left) displays a doctor and patient in conversation.

Since neither looks at the viewer, the audience observes an intimate, projected scene. This composition transmits a sense of reassurance, portraying a future medical appointment where patients feel heard. The patient's smile and relaxed posture, alongside the doctor's explanation, symbolize a path toward healing. It can also be considered a visual synecdoche, which uses the clinical interview to represent the entire process of recovery. The central image features a boy gazing at the viewer, building intimacy. His smile implies safety, suggesting the bowl contains lactose-free food. This serves as visual synecdoche, where the bowl represents the specific products listed in the text below. The third image (right) employs both synecdoche and metonymy: specific items represent an entire lactose-free, calcium-rich diet, while the food itself is directly associated with the essential minerals it provides for the body.

4.2 The Web Pages in Italian

The HRH and the FV web pages in Italian do not present any images, pictures or photographs on their websites, so the analysis of the visual metaphors focuses on the images and photographs available on the BG on the ISS web pages.



Figure 12. Images from the BG's website illustrating lactose intolerance

Figure 12 shows the only two images available on BG web page. They are available at the top of the page, immediately after the title "*Intolleranza al lattosio*" (lit., Lactose Intolerance) and a subtitle explaining in two sentences what the condition is. No caption accompanies the images. Even though the page and the textual contents are dedicated to a general, lay audience,

not specifically to children, the pictures are aimed at a younger audience. The use of moderately saturated, not modulated colors increases the level of abstract modality. The human figures, although drawn as comic-like characters, are depicted with enough detail to recognize a boy and a doctor. So, they are naturalistic enough to count as real (Kress and van Leeuwen, 2020) and be understood by an audience of young children.

In terms of figurative language both pictures use visual synecdoche to represent the condition and the process of diagnosis (left), as well as its unpleasant symptoms (right) expressed by means of the photograph representing a seemingly unhappy child while he sips milk with a straw. The connection here is created by the symptoms generated by the whole condition and the sad attitude of the child while drinking one kind of dairy product.



Figure 13. Image from the ISS's website illustrating lactose intolerance

Similar associations are made by the ISS on its web page but in a more direct way. The photograph provided in Figure 13 is the only image present and illustrates a woman holding her belly as if in pain. The composition of the image does not show the represented participant's gaze or facial expression. She wears a grey jumpsuit, and grey has a negative valence, being associated with miserable and bleak emotions (Goodhew and Kidd 2020), in the image to be associated in turn with the negative physical symptoms generated by lactose intolerance, symbolized by the glass of milk that the woman is holding in her hand. The figurative tropes contained in this image are both visual metonymy and visual synecdoche. The former is identifiable in the glass of milk and the hand on the stomach, representing dairy products and lactose intolerance symptoms, respectively; in the latter the single image stands for the whole condition, its symptoms and the cause-and-effect narrative generated by the glass of milk and the hand gesture on the abdomen.

5. Verbal Metaphors

Verbal metaphors were identified manually from eight web pages and categorized into domains. Results are presented in four tables: two for English (Table 1 and 2) and two for Italian (Table 3 and 4), focusing on the condition and symptoms, respectively. Each table displays the conceptual domain (Metaphor columns), the specific textual conceptualization (Conceptualization columns), and the website source (Website columns), using the abbreviations established in Section 3.

Starting from the web pages in English, the literal description of the condition and its symptoms prevails over the figurative one. Over a total of 9,879 words used to present the condition to the lay audience, metaphors were found in expressions that occupy 107 words to describe the condition, while its symptoms are found in expressions that count a total of 30 words. While this study is a qualitative investigation based on multimodal discourse analysis, we might use these raw figures to value the preference for literal expressions that practitioners show to verbally disseminate specialist knowledge on lactose intolerance.

The verbal metaphorical expressions that could be identified in the web pages to describe the conditions are illustrated in Table 1. Occasionally, one sentence contains two metaphorical expressions that were differentiated by adding emphases (bold type/italics) as indicated in the Metaphor column. Then, the corresponding Conceptualization is highlighted with the same type of emphasis in the relative column.

As already mentioned, the examples contained in the Tables are all the metaphorical expressions that could be identified in the texts. The metaphors identified in the web pages reveal a certain preference for the conceptualization of the impact that lactose intolerance has on the human body and the specific organs involved in/by the condition. The prevailing metaphors are BODY IS MACHINE and DIGESTION IS MOVEMENT, which might be identified in greater detail with DIGESTION IS MOVEMENT FORWARD. The former is not a novel concept in medical discourse, being on the contrary a well-established metaphor with conceptualizations found in all medical areas (Navarro I Ferrando, 2021). In particular, the description of how lactose intolerance works is conceptualized by means of the verb ‘to break down’, which transmits the idea of a machine destructing rather than building components. The only exception being the example from NIDDK in which the concept of building something by the body (“your small

intestine **makes** low levels of lactase”) is, however, associated with negative connotations of the low level of the enzyme.

The second identified metaphor DIGESTION IS MOVEMENT expresses the idea of a movement forward, when nutrients are passed from one point of the intestine to the next one. In the example the idea is the movement of nutrients as if along an assembly line. Hence, it might be considered a sub-conceptualization of the BODY IS MACHINE metaphor with a ‘supra-level’ metaphor that we can identify with HUMAN BODY IS FACTORY.

METAPHOR	Conceptualization	Website
DIGESTION IS MOVEMENT/DIGESTION IS MOVEMENT (FORWARD)	What isn’t absorbed by the intestines <u>continues along</u> the digestive tract and is passed as stool during a bowel movement.	MC
BODY IS MACHINE	Lactose intolerance occurs in people who lack the enzyme they need to break down lactose, the sugar in milk	CC
BODY IS MACHINE + DIGESTION IS MOVEMENT (FORWARD)	Your small intestine breaks nutrients down into smaller molecules that <u>can pass through the intestinal wall into your bloodstream</u> .	CC
BODY IS MACHINE	Lactose intolerance is when your body can’t break down or digest lactose.	JHH
BODY IS MACHINE	a condition in which your small intestine makes low levels of lactase and can’t digest all the lactose you eat or drink	NIDDK
BODY IS MACHINE	your small intestine cannot digest, or break down , all the lactose you eat or drink.	NIDDK

Table 1. Verbal metaphors defining the condition in the websites in English

However, the metaphors and their conceptualizations are all presented in a negative context. From the machine that breaks down components, instead of building them, to the production of low levels of lactase, and ending with a long list of nutrients that transmits an idea of unproductive motion, the connotations that are associated with verbal metaphors to describe lactose intolerance seem to conceptualize the condition negatively in contrast with the disseminating aim of the web page that is to spread knowledge on the condition, support patients during the diagnosis, and improve the patients’

general quality of life. The predominantly negative conceptualization of lactose intolerance in these texts is evidenced by the consistent use of negative grammatical constructions and descriptors of deficiency. Expressions such as ‘break down’ are not inherently pejorative, however they are systematically paired with negative polarity (e.g., ‘cannot digest’, ‘can’t break down’, or reference to the production of ‘low levels’ of lactase). This recurring pattern of “negated capacity” (Fairclough, 1992), whereby the biological process is framed not as a neutral variation, but as a mechanical failure of the body-as-machine. Such a persistent focus on what the body cannot do creates a conceptual subtext of dysfunction. This linguistic framing contrasts with the disseminating aim of these web pages, which is to inform patients; instead, the reliance on deficit-based language (what patients cannot do) may inadvertently reinforce a stigmatized view of the condition as a state of permanent biological inadequacy (Zhu and Smith, 2021).

As for the verbal metaphors employed to illustrate the symptoms created by the condition, the metaphors found in the web pages are drawn from different domains, which include descriptions of how the body can change (SYMPTOMS ARE MOVEMENT), connections with the patients’ emotional sphere (SYMPTOMS ARE EMOTIONS) or with the natural world (HUMAN ORGAN IS ANIMAL/HUMAN ORGAN IS WEATHER PHENOMENON).

METAPHOR	Conceptualization	Website
SYMPTOMS ARE MOVEMENT	bloating	MC
SYMPTOMS ARE EMOTIONS	It causes digestive distress when you eat dairy products	CC
<u>SYMPTOMS ARE SOUNDS/HUMAN ORGAN IS WEATHER PHENOMENON</u>	Stomach gurgling or <u>rumbling</u>	CC

SYMPTOMS ARE EMOTIONS/<u>SYMPTOMS ARE PERSONS</u>	Lactose intolerance symptoms can be unpleasant, but they <u>won't hurt you</u>	JHH
HUMAN ORGAN IS ANIMAL/<u>HUMAN ORGAN IS WEATHER PHENOMENON</u>	stomach “growing” or <u>rumbling</u> sounds	NIDDK

Table 2. Verbal metaphors describing symptoms in the websites in English

While terms such as ‘bloating’ and ‘distress’ are embedded in standard medical nomenclature (e.g., Melchior *et al.*, 2025), their conceptual roots are fundamentally metaphorical. As established in by CMT (Lakoff and Johnson, 1980), as well as by Semino (2008), describing a physiological state through kinetic or affective domains – such as in the mappings SYMPTOMS ARE MOVEMENT OR SYMPTOMS ARE EMOTIONS – is a prime example of how abstract bodily sensations are rendered intelligible through concrete source domains. The term ‘bloating’, for instance, does not merely denote a clinical state but metaphorically maps the internal gas pressure onto the domain of physical expansion and outward motion (Gibbs Jr, 2005). Similarly, the use of ‘distress’ to categorize a physical reaction to lactose represents a metaphorical shift from a physiological symptom to a psychological emotion domain. Therefore, they are not merely conventional, literal descriptions but metaphors that structure the way both experts and laypeople conceptualize the experience of illness.

In addition, two metaphorical domains are particularly worth noting. The metaphor HUMAN ORGAN IS ANIMAL/HUMAN ORGAN IS WEATHER PHENOMENON is used to conceptualize the symptoms by associating the sounds that the stomach produces while it processes lactose and natural phenomena or animals in a way that patients process complex, specialized concepts by means of their real-life experience, which is the function that Gotti (2003) assigns to metaphors in popularizing texts.

SYMPTOMS ARE EMOTIONS, on the other hand, bases the description of the symptoms on the patients’ personal interpretation. Conceptualizations of the condition rely on terms such as ‘distress’ and ‘unpleasant’, descriptors whose perception is inherently idiosyncratic and varies from patient to patient. Consequently, from the perspective of

medical dissemination, such terminology introduces a degree of vagueness and interpretive subjectivity that may conflict with the lay reader's expectations. As Callon (1999) suggests, lay readers seek to rely on the authoritative knowledge of experts to reduce uncertainty; however, the use of imprecise affective descriptors rather than concrete clinical indicators may inadvertently undermine this expert-layperson trust and treatment effectiveness (Peter *et al.*, 2024). While arguably a 'user-friendly' strategy, this lack of terminological precision may fail to provide the objective clarity required for practitioners to accurately inform the public on the physiological realities of lactose intolerance.

Applying ECMT to the verbal metaphors in English, we can argue that metaphors identified in the web pages in English can be assigned to Kövecses's (2020) Bodily Context and Situational Context. Kövecses (2020) argues that our physical, embodied experience acts as a prime for metaphor; since most of the metaphors conceptualize the condition in terms of movement, sound, and emotions, they are drawing directly from the physical and physiological state of the patient, while those metaphors that describe the condition associating it with animals and persons can be assigned to the Situational Context. In fact, according to ECMT, the Situational Context refers to the external environment, the participants in the discourse, and the social roles they play. When the web pages use persons or animals, or the natural world in general, they are shifting from what is felt internally by the patients to how the condition behaves as an external entity in a social situation. In more general terms, we could say that all conceptualizations of lactose intolerance are governed by the Conceptual-Cognitive Context since all the metaphors identified are part of a pre-existing, stable knowledge structure and ideological framework within medical discourse, as is testified by the use of the well-established metaphor BODY IS MACHINE.

This type of metaphor also prevails in the web pages in Italian. All the examples provided in Tables 3 and 4 are the metaphors that could be identified in the web pages. The texts in the web pages in Italian emphasizes keywords in bold type. For this reason, the examples reported contain emphases as in the original. The metaphorical expressions are underlined, while the text in Italian is provided in italics, followed by its translation in English. The translation is as literal as possible to help readers appreciate the meaning of the original expression. Occasionally, as in the case of *disturbi* the closest translation would be 'distress'. However, in this case, the

metaphorical force would be lost and the alternative (albeit not perfectly semantically matching) was provided in brackets, i.e., ‘disturbance’.

In Table 3 we observe that, when describing lactose intolerance, practitioners conceptualize it almost exclusively in terms of the metaphor BODY IS MACHINE, already seen in the web pages in English, testifying its well-established role in defining the functioning of the human body in medical discourse, regardless of the national language in which the specialist writes.

METAPHOR	Conceptualization	Website
SYMPTOMS ARE MOVEMENT	bloating	MC
SYMPTOMS ARE EMOTIONS	It causes digestive distress when you eat dairy products	CC
SYMPTOMS ARE SOUNDS/HUMAN ORGAN IS WEATHER PHENOMENON	Stomach gurgling or <u>rumbling</u>	CC
SYMPTOMS ARE EMOTIONS/SYMPTOMS ARE PERSONS	Lactose intolerance symptoms can be unpleasant , but they <u>won't hurt you</u>	JHH
HUMAN ORGAN IS ANIMAL/HUMAN ORGAN IS WEATHER PHENOMENON	stomach “growling” or <u>rumbling</u> sounds	NIDDK

Table 3. Verbal metaphors defining the condition in the websites in Italian

Even when proteins are defined in terms of speed and catalysts, so through the metaphor MOLECULES ARE VEHICLES, this metaphor can in turn be considered a sub-category of the main metaphor BODY IS MACHINE. Describing proteins in terms of ‘speed’ and ‘catalysts’ invokes a specific

conceptual mapping where molecules are conceptualized as vehicles operating within a mechanical system. This framing aligns with established linguistic theories in scientific discourse (Temmerman, 2000; Knudsen, 2003) positing that the use of kinetic descriptors to explain biochemical functions can indeed be considered a sub-category of the overarching metaphor BODY IS MACHINE. By focusing on the velocity of a reaction rather than just the chemical transformation, the discourse implicitly adopts a source domain of transportation and mechanics to render the microscopic processes of the body more tangible. Temmerman (2000), in particular, argues that these metaphors can be considered lexicalized metaphors (i.e., dead metaphors). However, this is not confirmed by Knudsen (2003), so these metaphors may still structure our conceptual understanding of biological functions as figurative mechanical processes.

On the other hand, with the metaphor BACTERIA ARE PERSONS the conceptualization refers to lactose as being digested by bacteria. In this case, bacteria are given attributes that are characteristic of a more complex organ, typical of a human being, hence they are being personified into more complex entities to explain what kind of process they apply to lactose.

As regards symptoms, it is interesting to notice that, again, an inanimate object is being personified and assimilated to a living organism in the metaphor HUMAN ORGAN IS PERSON (*pancia che brontola*/rumbling belly) through which an anatomic part (“*pancia*”) is given the ability of a speaking person (“*brontola*”).

METAPHOR	Conceptualization	Website
SYMPTOMS ARE MOVEMENT	bloating	MC
SYMPTOMS ARE EMOTIONS	It causes digestive distress when you eat dairy products	CC
SYMPTOMS ARE SOUNDS/HUMAN ORGAN IS WEATHER PHENOMENON	Stomach gurgling or <u>rumbling</u>	CC

SYMPTOMS ARE EMOTIONS/<u>SYMPTOMS ARE PERSONS</u>	Lactose intolerance symptoms can be unpleasant, but they <u>won't hurt you</u>	JHH
HUMAN ORGAN IS ANIMAL/<u>HUMAN ORGAN IS WEATHER PHENOMENON</u>	stomach “growling” or <u>rumbling</u> sounds	NIDDK

Table 4. Verbal metaphors defining symptoms in the websites in Italian

Through another metaphor (HUMAN ORGAN IS WEATHER PHENOMENON), the sounds that stomach and bowel movements produce while digesting lactose are associate to natural phenomena such as rumbling (as if during a thunderstorm) and meteorism, whose etymology assimilates flatulence to strong winds (“Meteorism”, 2026).

All remaining metaphors conceptualize the symptoms of lactose intolerance in terms of human emotions (SYMPTOMS ARE EMOTIONS). In particular, it is worth noting the use of “*disturbi*”, which in English is usually translated into distress; in the Italian texts, it is used with the connotation of ‘disturbances’ since in other cases ‘symptoms’ is also used as variant and synonym, as in this example from the ISS’s web page (“*i disturbi (sintomi) dovuti ad una intolleranza alimentare*”/“disturbances (symptoms) of a food intolerance [...]”), illustrative of other instance found in other web pages in Italian. The term appears to carry a more emotionally charged connotation – evoking notions of ‘disturbance’ or ‘affliction’ – rather than serving as a strictly neutral equivalent to ‘symptoms’. While a comparative analysis of patient versus practitioner perspectives is required to validate this hypothesis, the pejorative undertones of the term are supported by its use in sensitive medical categories. For instance, its presence in conditions like ‘*disturbi alimentari*’ (eating disorders) and ‘*disturbi della personalità*’ (personality disorders) links the terminology to conditions burdened by significant social stigma (Aviram *et al.*, 2006; Easter, 2012).

Finally, the use of “*tolleranza*” (“tolerance”) is also worth examining. The term is opposite of *intolleranza* (intolerance, as in lactose intolerance) and is specifically used to indicate resistance to lactose or the ability to digest lactose. However, as in the case of FV, another alternative would be available, i.e., “*tollerabilità*” (lit., tolerance). In the specific web page, under

the section “*Variabilità dell’intolleranza al lattosio*” (“Variability of lactose intolerance”), we find the sentence “In ogni caso, la **tollerabilità può variare** da persona a persona” (“In any case, tolerance can vary from person to person”; emphases as in the original in Italian), offering an alternative in which “tolleranza”, which had been previously used on the web page and was later resumed in the rest of the text. This case testifies the preference for a metaphorical term that is more emotionally connotated when a synonym bearing no figurative sense was available, possibly to maintain the terminological contrast ‘*intolleranza/tolleranza*’ (intolerance/tolerance) and make the term more familiar to the lay audience.

6. Discussion of Results: (Inter-)cultural Dimensions in Metaphors Conceptualizing Lactose Intolerance

The analysis conducted in this study has identified the visual and verbal tropes used to conceptualize lactose intolerance in websites run by clinics/hospitals in English and in Italian. In particular, it has used CMT and ECMT to analyze the situational contexts in which these metaphors are grounded. From the visual point of view, however, actual visual metaphors are used occasionally – except for *INTESTINE IS A VEHICLE* (Section 4.1., Figure 6, square 12), ultimately the one recurring to the well-established metaphor *BODY IS A MACHINE* which prevails in the verbal metaphors both in English and in Italian.

Visually, the web pages in English seem to prefer visual euphemisms, especially when referring to taboo bodily functions, and synecdoche. In this case, they recur to symbolisms of unities to indicate the whole condition or its symptoms, the web pages in Italian, instead, employ more preferably the rhetorical visual devices of visual metonymy and synecdoche, again preferring to symbolize single parts for the whole condition. However, in this case real photographs of dairy products or people in pain are used, which enhanced the naturalistic effect of the images.

Verbally, fewer differences were identified in the two sets of web pages. Both used the metaphor *BODY IS MACHINE*, which prevails in medical discourse to describe the human body and its functions (Navarro I Ferrando, 2021), especially to describe the condition. However, the web pages in English revealed a preference for a more subjective focus on the symptoms, shifting them on the perception of the patients, while the web

pages in Italian played with the reliance on the observation of the natural world and weather phenomena.

This difference – albeit minimal – in the metaphorical distribution between the web pages in English and in Italian can be interpreted as rooted in cultural values, especially as concerns retention of power, as identified using Hofstede's (2011) notion of cultural dimensions. In his model, Hofstede (2011: 1) defines culture as “the collective programming of the mind that distinguishes the members of one group or category of people from others”. Moreover, as Piller (2025) argues, culture is not a static biological essence but a social construction often employed to sustain specific power asymmetries. In this regard, Hofstede (2011) detected six key dimensions: Power Distance Index (PDI), Individualism vs. Collectivism (IDV), Masculinity vs. Femininity (MAS), the Uncertainty Avoidance Index (UAI), Long-Term vs. Short-Term Orientation (LTO), and Indulgence vs. Restraint (IVR). Each dimension indicates how cultures are characterized in terms of authority, social relationships, achievement, tolerance for uncertainty, time orientation, and self-control. More specifically, PDI describes the level of authority that is accepted and followed, IDV indicates the extent of community and individuality, while MAS represents specific values that society and a certain community hold. UAI describes to what extent nations avoid unknown factors, LTO expresses the level of acceptance/rejection of traditions over innovation in a society. Finally, IVR indexes a country's orientation toward instant gratification versus the disciplined pursuit of long-term rewards (Hofstede, 2011).

Among the six dimensions, PDI is the dimension that might explain the similarities/differences found in the web pages in English vs in Italian. PDI, in fact, expresses the degree to which the less powerful members of a society accept and expect that power is distributed unequally (*ibid.*). In the context of this study, doctors can be considered to retain power since they possess the scientific knowledge and, therefore, the ‘power’ to heal patients from the condition, while patients are the less powerful members of the community because they need to rely on the doctors’ knowledge and expertise to find a solution to their condition.

Considering the PDI dimension, the four web pages in English, all based in the USA, appear to prefer an objective and functional presentation of the visual tropes utilizing abstract modality and stylized human figures to represent the digestive system; this universalizes the patient experience and allows for a lower PDI, which seems to encourage patient engagement to manage personal health through objective data. The web pages in English,

in fact, show to employ metaphors referring to the body as a machine to represent bowel function, which aligns with lower uncertainty avoidance by providing clear, performance-based signals rather than emotional ones. Patients, moreover, are empowered in the choice of verbal metaphors that focus on their perceptions of the symptoms rather than on objective medical description.

In contrast, Italian web pages seem to utilize naturalistic imagery – such as photographs of people in visible distress and photographs of food – that prioritize the sensory and emotional reality of the condition. This focus on the emotional impact of the condition reflects a higher PDI and a higher UAI, where patients look to established experts and realistic depictions to reduce ambiguity.

One last aspect worth mentioning is the reliance, in both web pages in English and in Italian on the patients' perceptions of the symptoms. Doctors not only provide lists of symptoms based on medical knowledge, but they also appear to rely on the patients' personal sensory and emotional perceptions, thereby shifting the dynamics of power from their own position as practitioners towards the patients' viewpoint. However, this was seemingly more prevalent in the English web pages rather than in the Italian ones, so we can hypothesize that the English-speaking context of the web pages is anchored more firmly in bodily and emotional states, while the Italian-speaking context of the web pages emphasizes situational and functional coherence (Hofstede, 2011).

7. Conclusions

The findings presented in this study have shown that the web pages in English showed a preference for an abstract modality and stylized diagrams, potentially shifting power to patients through mechanical metaphors. Conversely, the Italian web pages appeared to prefer naturalistic photographs and emotional metonymy, maintaining doctor-centered authority through sensory descriptions of symptoms. While not definitive, and based on the specific dataset observed, these differences seemed to align with Hofstede's (2011) cultural dimensions – particularly Power Distance – providing a conceptual lens through which the culturally different ways in which practitioners navigate professional boundaries could be interpreted.

The study presents, however, some limitations represented by the number of web pages considered for each of the sub-sets of data. This small sample size may not be fully representative of how clinics and hospitals convey information available on the condition in these languages. Moreover, the English-language websites selected are exclusively run by healthcare institutions in the USA. Thus, the findings regarding English cultural dimensions might specifically reflect US cultural norms rather than those of other English-speaking nations. The visual and verbal metaphors were also investigated separately, i.e., without taking into consideration their reciprocal relationship and their organization in the context of the web page. Future research might further expand the number of websites to compare results from this study with those from a larger dataset, which might also include data from other English-speaking countries. A Critical Multimodal Approach may be applied to investigate how images and texts are organized on these web pages, specifically focusing on their reciprocal relationship. This allows for the analysis of how visual and verbal figurative components interact with the rest of the literal content. Furthermore, a critical elaboration of these findings might reveal the power dynamics and hegemonic discourses that influence how figurative language is used to represent lactose intolerance. Finally, since the analysis is restricted to the organization of verbal and visual components on the static web pages, future research will take into account dynamic or interactive elements that are present, such as videos and links to social media as well as the pages and social media accounts by individual practitioners.

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Degrees of Metaphoricity: Conventionality and Creativity in Newspaper Sustainability Discourse

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Abstract

Conventionality and creativity in metaphor use are best conceived as extremes of a cline rather than as a binary opposition, with metaphoricity shaped by factors such as frequency, codification, context, and the degree of interpretive effort required (Goatly, 1997; Müller, 2008). This study analyses figurative language in a specialised bilingual comparable corpus of British and Italian newspaper articles focussing on the notion of sustainability. Drawing on a multi-criteria framework combining dictionary definitions, frequency in reference corpora, correspondence to established mappings, and contextual usage, the analysis proposes a metaphoricity gradient from highly conventionalised metaphors, through extensions of established mappings and topic-triggered expressions, to creative recontextualisations and elaborations. The findings indicate that conventional mappings predominate as carriers of established framings, while creativity emerges through mechanisms such as extending unused mapping slots, sustained metaphorical scenarios, and the recontextualisation of domain-specific expressions.

Keywords: Metaphor, Conventionality, Creativity, Newspaper Discourse, Metaphoricity, Conventional - Creative Cline

1. Introduction

Historically, metaphor was seen as an ornamental figure of speech based on a resemblance between two entities (Charteris-Black, 2004). Such a definition has been criticised and rejected by several scholars (e.g., Black,

1962), whose work provided the theoretical foundations for Lakoff and Johnson's Conceptual Metaphor Theory (hence CMT), which demonstrated that metaphor is ubiquitous in everyday life rather than a peripheral linguistic ornament. Within CMT, a metaphor is the understanding of one conceptual domain in terms of another. Such cognitive mechanisms involve a mapping between a target domain (more abstract) and a source domain (the concrete concept used to represent the target). In this view metaphor is intended primarily as a question of thought and only secondarily as a question of language. While CMT is credited with having established the ubiquity of metaphors, the approach has been criticised for neglecting the discursive dimension and lacking a framework for systematic annotation in authentic discourse (Augé, 2023).

In response to these limitations, corpus-assisted approaches have provided methodological grounding for studying metaphor in naturally occurring data, consolidating the shift from decontextualized examples to the analysis of metaphor in authentic discourse (e.g., Cameron, 2003; Charteris-Black, 2004). Researchers within the CMT tradition sought to address the need for procedural rigour by developing a replicable and systematic method for metaphor identification, resulting in the Metaphor Identification Procedure (MIP; Pragglejaz Group, 2007). At its core, MIP identifies metaphoricity at the word level by comparing a word's contextual sense with its more basic sense (as established through dictionary consultation): if the contextual meaning contrasts with, yet can be understood in terms of, the basic meaning, the lexical unit is coded as metaphorically used. MIPVU (Metaphor Identification Procedure Vrije Universiteit; Steen et al., 2010) is an extended version of the original MIP which, unlike its predecessor, also encompasses the identification of direct metaphors (that is, similes). Yet, despite these refinements, MIPVU ultimately requires a categorical decision on metaphoricity; the WIDLI ("When In Doubt, Leave It In") label in the protocol functions as a holding category for borderline cases, which implicitly acknowledges that metaphor use often resists a neat literal/metaphorical split.

This tension motivates a different perspective: rather than a binary distinction between literal and metaphorical uses, metaphoricity can be more accurately conceived as a gradable phenomenon (Julich-Warpakowski and Pérez Sobrino, 2023). On the one hand, it refers to a static property of linguistic and conceptual structures, with entrenched mappings and lexicalised meanings, while on the other hand, it captures the dynamic contextual activation of metaphor in discourse, where recognition and

interpretation depend on context (Tan, 2023). Müller (2008) argues that linguistic expressions at the system level exhibit potential metaphoricity, but the degree to which this potential is realised depends on concrete usage situations. At the level of the linguistic system, expressions carry potential metaphoricity, determined by the degree of conventionalisation and transparency of the relation between literal and figurative senses. At the level of use, this potential is realised to varying degrees depending on the concrete communicative situation; metaphoricity is thus neither a fixed property of a word nor a purely individual cognitive event, but a phenomenon that emerges from the interaction between systemic potential and contextual realisation.

A recurring challenge in metaphor identification lies in defining the boundaries of conventionality, with the figurative force in the synchronic language system of very conventionalised metaphors being a point of contention. This challenge informs the present case study, which examines how the gradient from conventionality to creativity manifests in sustainability discourse across two languages. Drawing on a comparable corpus of English and Italian newspaper articles, the analysis investigates the distribution and degree of metaphoricity at the lexical and discourse level in press coverage of sustainability. Specifically, the study addresses two interrelated research questions:

1. Can the criteria proposed in the literature for assessing metaphorical creativity be operationalised into a unified framework?
2. To what extent can this framework be used to empirically assess the degree of metaphoricity in discourse?

2. Conceptual Background

Creativity may arise at the level of linguistic expression, through lexical material that elaborates upon an established mapping or at the conceptual level, through novel mappings (Philip, 2016; Semino, 2008). Metaphors become less noticeable the more their figurative meaning becomes lexicalised and socially established (Charteris-Black, 2004); interpreting them requires a mechanism of sense retrieval, as the figurative meaning is already stored in the mental lexicon and easily accessed, requiring less cognitive processing (Bowdle and Gentner, 2005). Conversely, novel

metaphors require sense creation, demanding more interpretive effort and taking longer to process than both literal and conventional metaphorical items (Blasko and Connine, 1993). The framing power of metaphors, that is, their ability to offer an interpretive lens through which the target domain is understood and conceptualised, is therefore particularly relevant in the case of conventional metaphors: their conventionalisation allows them to pass unnoticed (Krennmayr, 2015), inasmuch as, due to them being so familiar, they are processed more rapidly and with less "critical friction" than creative ones (Romano, 2024). Yet their recurrence naturalises particular ways of construing social reality through cumulative effects (Charteris-Black, 2004; Taylor, 2021).

However, conventionality is not a fixed status but the outcome of diachronic and cognitive processes through which metaphors become entrenched. A key mechanism is the gradual development of polysemy: as metaphors are repeatedly used, the figurative sense becomes established alongside the literal one. Repeated use not only entrenches the figurative sense but also diminishes awareness of its origin, inasmuch as "frequency breeds literalness" (Hanks, 2006, p. 21), initiating a process of "semantic drift" (Croft and Cruse, 2004: 204) that may eventually obscure the metaphorical origins of an expression. To deal with the nuances of conventionalisation, various classifications have been proposed, from Goatly's (1997) dead, buried, sleeping, tired, and active metaphors to Müller's (2008) sleeping and waking metaphors, which can be awakened through contextual markers or by being placed in an environment that foregrounds their original literal sense. While with "background usage" (Musolff, 2016: 52) source-lexical material is mentioned briefly, extended metaphorical scenarios provide further elaboration and detail, conveying a more noticeable narrative structure and evaluative bias.

In newspapers, metaphorical language use is predominantly conventional and typical of language use in general (Krennmayr, 2011). However, media language is characterised by features such as topic-triggered metaphors (Koller, 2004), which have been recognised as a productive mechanism in news headlines and media discourse more broadly (Augé, 2024). Topic-triggered metaphors arise when "an aspect of the topic under discussion inspires the choice of the metaphorical source domain" (Semino, 2008: 27), creating expressions in which both the literal and metaphorical meanings are simultaneously relevant. They attract attention and create humorous or playful effects, particularly in headlines where space is limited and impact is paramount (Krennmayr, 2011). Despite these

rhetorical affordances, topic-triggered metaphors, though a characteristic feature of news texts, are not the norm (Krennmayr, 2011).

Conventionality is also strictly related to discourse communities, genres, and languages (Charteris-Black, 2004). Expressions highly conventional within specialised registers may appear novel or striking when transferred to different domains (Fuoli et al., 2021b). Conventionalisation is therefore a genre-sensitive process (Deignan et al., 2013). This relativity extends to cross-linguistic comparison: the metaphors lexicalised in one language may not overlap with those in another (Charteris-Black, 2004). Philip (2016) illustrates this with the Italian BEGINNING IS BIRTH metaphor, which productively uses *nascita* (“birth”) to refer to the beginning of diverse entities. In English, the same mapping is far more restricted in scope and could not be applied in the variety of contexts where it is suitable in Italian, where instead English would draw on other source domains.

3. Methodological Framework and Data

The present study, which adopts corpus linguistics methodologies, addresses how to measure through means other than the researcher’s own intuition the lexical entrenchment, novelty, and the discourse prominence of metaphorical expressions within their situated context. For this case study, a specialised corpus focussing on the notion of sustainability, intended as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987: 37), was chosen. It is composed of all articles from four British and four Italian newspapers across a three-month period (May–July 2022, starting with the introduction of the 8th Environment Action Programme) mentioning the search terms *sustainability* and *sustainable development*. The newspapers were chosen with the aim of providing a reasonably broad spectrum of opinions in the political landscape of both countries, by selecting mainstream daily newspapers. They were collected through two databases, *MyDesk24* for *Il Sole 24 Ore* and *NexisUni* for *Corriere della Sera*, *Financial Times*, *The Guardian/The Observer*, *The Independent* and *The Daily/Sunday Telegraph*, and a web-scraping tool, *Bootcat* (Baroni and Bernardini, 2004), for the two newspapers that could not be retrieved through the databases available, *Il Giornale* and *La Repubblica*. The resulting corpus consists of 1,664,644 tokens, of which 953,133 in the Italian subcorpus and 711,511 in the English subcorpus. Concordances for

sustainability and *sustainable* and the Italian equivalents *sostenibilità* and *sostenibile* were analysed to find sustainability-related metaphors, using MIPVU. Additionally, when the concordance span in AntConc was insufficient to adequately grasp the contextual meaning, the original article was consulted.

The gradient from conventionality to creativity was operationalised through a combination of criteria (Charteris-Black, 2004; Deignan, 2005; Goatly, 1997). The four criteria adopted in this study reflect the two-level structure noted by Müller (2008): criteria (a), (b), and (c), namely dictionary definitions, corpus frequency, and established mappings, provide empirical indicators of potential metaphoricity at the system level; criterion (d), contextual usage, captures the degree of realisation at the level of use, attending to the extent to which the metaphorical framing is elaborated, foregrounded, or signalled in the specific discourse instance.

(a) Dictionary Definitions

As Goatly argues, dictionaries are “the cemeteries and the mortuaries, definitely the dormitories, and generally the resting place for the populations of metaphors” (1997: 29). The main dictionaries considered in this study are the Oxford English Dictionary (OED) for English and GRADIT (De Mauro, 2016) for Italian, although Longman and Treccani were occasionally consulted to obtain a more exhaustive picture. Whether the contextual meaning was present in the dictionary already constituted a notable indication of the degree of entrenchment of the figurative meaning in the language. However, considering that there is a frequency threshold a meaning needs to pass in order to be considered sufficiently conventionalised to be registered in a dictionary (Steen, 2007), dictionaries do not provide a comprehensive representation of contemporary language use, but rather of the meanings that are already established.

Additionally, both dictionaries include a classification of the status of the meanings registered, which is based on extensive corpora. The labels *figurative* or as “extension” (*estens.*, De Mauro, 2016), or absence thereof, reflect the level of entrenchment of metaphorical meanings. Thus, if the meaning is not marked in any way, it is very entrenched; if it is marked as extension, it is still recognised as deriving from a more basic one and differentiating itself from it; if it is marked as figurative, while entrenched enough to be enumerated in the dictionary, it still retains an overtly metaphorical quality. To reprise Goatly's (1997) terminology, such labelling

can be used as a baseline to determine how tired, or even sleepy a metaphor is in synchronic terms. GRADIT additionally catalogues the meanings with usage markers based on register and usage, such as “common” (*comune*, CO), “technical-specialist” (*tecnico-specialista*, TS), or “low-use” (*basso uso*, BU). The status of a meaning as specialised and pertaining to a specific area of discourse can provide an additional indicator of its being less accessible to the average speaker, for whom the figurative sense might have become more salient.

While dictionaries provide a useful baseline for metaphoricity judgements, they reflect editorial choices which can vary across dictionaries and languages; therefore, definitions are complemented by the criteria (b), (c), and (d).

(b) Frequency in reference corpora

Corpus methods provide an important tool to identify gradability via collocational patterns and frequency (Deignan, 2005), which complement the limitations of dictionaries. Figurative usages can be counted within corpora, determining “what frequency of occurrences marks the appropriate cut-off point between conventionalized and novel uses for the purposes of a particular research project” (Cameron and Deignan, 2006: 678). Hence, the current study consulted *enTenTen21* and *itTenTen20*, two comparable corpora, available in Sketch Engine (Kilgarriff et al., 2014), composed of texts in English and in Italian collected from the Internet up to, respectively, 2021 and 2020. The WordSketch tool was used to gain a clearer picture of a lexical item’s collocational patterns, and, when this did not provide sufficient information to discriminate between literal and metaphorical uses, the first 50 concordance lines as returned by the Concordance tool in default corpus order were read to assess contextual usages. This enabled us to obtain a picture of usage patterns and to determine whether metaphorical meanings, while not acknowledged in the dictionary, were nonetheless established in current language use.

(c) Correspondences to established mappings and previous literature

Another relevant factor in establishing conventionality is correspondence to established mappings and previous literature. In this case, the primary reference was Goatly’s *Thesaurus of Metaphors* (2024a), a repository classifying metaphorical expressions from general mappings to specific terms. It

should be noted that the Thesaurus is primarily based on the English language, relying on the frequency of lexical items found in the *COBUILD* corpus of general English (Goatly, 2024b). Additionally, well-established metaphors in previous literature are referenced, acknowledging the disparity of resources for English and for Italian, since the amount of research on the former is considerably more extended than that on the latter.

(d) Contextual usage

A fundamental dimension of creativity emerges at the more granular level of analysis of contextual usage. This includes the amount of lexical material devoted to establishing and developing the metaphor and its role in extending conventionalised expressions beyond their recurrent uses; topic-triggeredness; occurrence within direct speech; and the use of metaphor flags, that is, explicit textual cues that signal a metaphorical framing or invite a non-literal interpretation (Steen et al., 2010: 24).

In order to assess conventionality and creativity for each of the examples discussed below, the criteria were considered in the order in which they have been presented. The information they provide is meant to be combined in order to give a comprehensive picture, and supply evidence where this is missing from one of the criteria. For instance, inasmuch as dictionaries only register sufficiently conventionalised meanings and reflect specific editorial choices, they are supplemented by corpus frequency. Considering established mappings allows for the kind of creativity in action to be identified: whether the linguistic realisation is novel, but relies on an existing mapping, or it draws a new connection. Once (a), (b) and (c) have been considered, establishing the potential metaphoricity at the system level, its realisation in the specific context is considered. Although considered separately, the four criteria interact and provide information about different degrees and aspects of conventionalisation; while more conventional metaphors tend to be registered in the dictionary, or at least be attested in corpus use, more creative ones are developed at the level of contextual usage.

4. Analysis and Results

Building on the rationale discussed in Section 3, Section 4 proposes a gradient proceeding from highly conventionalised metaphors to

increasingly creative ones. It begins with expressions where the figurative meaning is deeply entrenched in the lexicon, though to varying degrees (Section 4.1). The cline then moves to cases where established mappings are extended through additional lexical material that reactivates the source domain (Section 4.2), and subsequently to topic-triggered metaphors (Section 4.3), where the subject matter of the article motivates the selection and elaboration of the source domain, producing a defrosting effect that renders otherwise conventional expressions more vivid. At the creative end of the gradient, expressions such as *clonked round the head*, *trickle down*, and *fad diet* illustrate more marked forms of novelty (Section 4.4). The positioning of each expression along the gradient reflects the features that render it more markedly oriented towards conventionalisation or towards creativity, as assessed through the four criteria presented in Section 3. Figure 1 provides a visual representation of the linguistic expression discussed in Sections 4.1–4.4, illustrating how they are distributed along the gradient from the conventional to the creative end.

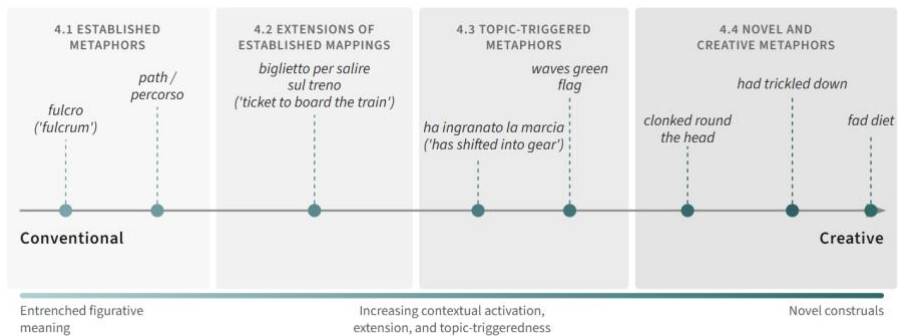


Figure 1. The conventionality-creativity cline of metaphorical expressions

4.1 Established metaphors

This subsection examines metaphorical expressions whose figurative meanings are deeply entrenched in the lexicon, attested in dictionaries, well documented in previous literature, and predominant in reference corpora. The two examples discussed, *fulcro* and *path/percorso*, both occupy the conventional end of the cline, but differ in the degree to which their literal meaning remains salient in contemporary usage.

- (1) Siamo orgogliosi di essere partner del Giro, una manifestazione con gli stessi valori di sostenibilità, qualità e determinazione fulcro dell'attività quotidiana delle nostre persone (*Corriere della Sera*)
 [We are proud to be partners of the Giro, a manifestation with the values of sustainability, quality and determination fulcrum of the daily activities of our people].¹⁰

The word *fulcro* (“fulcrum”) in example (1) might be considered as a very entrenched metaphor. The literal meaning in GRADIT is “TS mech. axis of rotation or support point of a lever”¹¹, while the figurative one is “CO extens., point, factor, essential element, foundation”, with the usage markers TS for the basic meaning and CO for the figurative meaning serving as an indicator of entrenchment. On the one hand, the literal meaning is marked as TS (technical-specialist), suggesting that it is identified as pertaining to a specific area of experience and thus confined to “specialised” use, a feature that can be seen as a marker of lower saliency for average speakers that do not routinely experience that area, while figurative meaning 2 is marked as CO (common). A discrepancy of choices adopted in different dictionaries can be noticed with regard to the labels used to qualify the meaning: while GRADIT uses the label “extens.” rather than “fig.”, signalling a level of entrenchment where figurativity blurs into polysemy, Treccani instead uses the label “fig.” to distinguish the meaning from the literal one, still recognising its figurative status.

Its metaphorical use draws on the overarching metaphor of IDEAS ARE OBJECTS (Dancygier and Sweetser, 2014; Lakoff and Johnson, 1980), and the *Thesaurus* registers *fulcrum* under the “important/powerful is the central part of an object” mapping as the “most important or essential element in an activity” (Goatly, 2024a). The analysis of the WordSketch confirmed that this figurative meaning predominates. The verbs with which the term collocates most frequently are *diventare*, *rappresentare*, and *costituire*, whose general meaning, together with an analysis of the concordances, suggests that the uses tend to be almost exclusively figurative.

In example (1), this is an extremely conventionalised manner of conveying the importance that the values of *sostenibilità*, *qualità* e *determinazione* (“sustainability, quality and determination”) hold for the

¹⁰ Metaphorical expressions in the examples are underlined, both in the original and in translation.

¹¹ All translations from Italian are by the authors.

company in question, lending physicality to the abstract notions. Just as the fulcrum concretely functions as the essential component that allows a lever to lift a heavy load or transmit force, these foundational values are presented as essential components which support the company and around which operations revolve.

- (2) The very first thing companies need to do on their path to becoming sustainable enterprises is to understand their environmental footprint based on facts and figures (*The Guardian*)
- (3) Nel percorso verso la sostenibilità si muove anche la finanza (*Sole 24 Ore*)
[Finance is also moving along the path towards sustainability]

Conversely, *path* and the Italian equivalent *percorso*, respectively in examples (2) and (3), while constituting very established metaphors, nonetheless retain a considerably salient literal meaning. The OED recognises among physical uses “a way or track formed by the continued treading of pedestrians or animals, rather than one deliberately planned and made”, while extended and abstract uses comprise “A course of action; a way of proceeding; a mode of behaviour or conduct; esp. a way of life leading to a spiritual goal. Also: a sequence of events or operations; the course of a person's life; (occasionally) a line of thought, argument, etc”. On the other hand, GRADIT registers a literal meaning qualifying *percorso* as “stretch of road that is travelled”, while no figurative meaning is provided. *Treccani* instead acknowledges the meaning “with fig. use, evolution, process of gradual advancement and transformation”. The broader collocational behaviour of *percorso* shows both collocates pointing to figurative usage (e.g., nouns in the PP with *towards* such as *successo* “success” or *realizzazione* “fulfilment”) and to literal usage (*stop-over*, *km*, *trekking*). For *path*, similarly, both figurative (*career*, *spiritual*, *development*) and literal (*bike*, *pedestrian*, *wood*) collocates are present. The WordSketch collocational behaviour of *path* and *percorso* reveals that both nouns collocate with verbs whose literal or figurative status is difficult to disambiguate; precisely because the JOURNEY metaphor is so deeply entrenched, source domain lexical material can readily be transferred to the target domain. These terms are instantiations of the JOURNEY metaphor, one of the most widespread metaphors in discourse (Charteris-Black, 2004; Fuoli and Beelitz, 2023; Lakoff, 1993), with Goatly defining *path* as “means of achieving something” (2024a).

Thus, while *path* and *percorso* refer to a concrete entity that remains central to everyday experience, and therefore display a basic meaning that is unquestionably widespread, they also have a very established figurative meaning. The two senses co-exist, with the literal remaining highly salient; this already represents a step further along the gradient from a case such as *fulcro*, where the literal meaning, although still present in the current lexicon, is notably less frequent. In (2) and (3), they are used as conventionalised manners of conveying the notion of forward progress toward, aimed, respectively, at companies *becoming sustainable enterprises* and finance embracing sustainability, without providing specific details on the status of development.

4.2 Extensions of established mappings

This subsection examines how established mappings can be extended through additional lexical material that activates elements of the source domain not routinely mapped in conventional usage. Example (4), while relying on an established expression, introduces further lexical items which contribute to a “defrosting” (Kyratzis, 1997: 99) or “revitalization” (Goatly, 1997: 30) of the metaphor in context. Generally, not all elements from the source domain are mapped onto the target domain, resulting in a “used” and an “unused part” of the metaphor (Lakoff and Johnson, 1980: 52–53). The static structures provided by standard, decontextualized conceptual metaphors can be manipulated at the level of communicative situations to select unused elements from a frame that fit their specific communicative goals and introduce novel images that the conventional mapping does not ordinarily include (Kövecses, 2020).

- (4) La tassonomia diventerà il biglietto per salire sul treno, ormai già partito, della transizione ecologica nel Vecchio Continente (*Il Sole 24 Ore*)
[The taxonomy will become the ticket to board the train, which has already departed, of ecological transition in the Old Continent.]

GRADIT registers the basic meaning referring to a convoy of railway wagons hauled by a locomotive, marked as FO (fundamental) and the figurative entry: “CO fig., phenomenon that once started follows its course without interruption, in a regular manner”. The figurative meaning is labelled as such, yet conventionalised enough to be registered in the dictionary with the usage marker CO (common). Additionally, among the multi-word expressions under the voice *treno*, the Italian idiom *perdere il treno*,

meaning “to miss an opportunity”, analogous to the English “miss the boat”, is recorded. The Thesaurus registers under the mapping “Opportunity or means is getting on or riding a vehicle”, the idioms “miss the bus/boat”, conveying the notion of missed opportunity. Hence, the absence of the contextual meaning of train from the *Thesaurus* might be more accurately attributed to a language-specific realisation in Italian of a shared underlying mapping.

An overview of the usage of *treno* through the WordSketch suggests that it often collocates with verbs such as *transitare* (“pass through”), *partire* (“leave”), and *sopprimere* (“abolish”), predominantly describing the functioning of railway services and thus suggesting literal usage. The adjectives similarly point to literal meanings: *puntuale* (“punctual”), *sovraffollato* (“overcrowded”), *sporco* (“dirty”). On the other hand, when *treno* collocates with verbs whose meaning can map onto the notion of seizing or missing an opportunity, a figurative pattern emerges: *perdere* (“to miss”), *agganciare* (“seize”), or *deragliare* (“derail”), where the precariousness of a generally positive ongoing process is highlighted by foregrounding the risk of going off track.

By contrast, *biglietto* (“ticket”) does not appear to have an established figurative extension on its own, as neither Treccani nor GRADIT provide one; rather, it acquires figurative meaning here by functioning as a component of the entrenched figurative expression with *treno*. This represents a cross-linguistic asymmetry in the distribution of figurative conventionalisation: whereas in Italian it is *treno* that carries the established figurative extension, in English it is *ticket* that has the more entrenched figurative meaning. The Thesaurus defines *a ticket to* as “means of succeeding or attaining”, and the OED lists among the senses for *ticket*: “figurative. With complement. A means of achieving a specified desired outcome”. The Italian WordSketch indicates a mostly literal collocational profile. The most frequent verbs with which it collocates as object are transactional verbs tied to physical ticket-handling, such as *acquistare* (“to purchase”), *emettere* (“to issue”), or *obliterare* (“to validate”). Although some figurative uses can be found, for instance, with *biglietto di sola andata* (“one-way ticket”) conceptualising irreversibility, they appear to be a minority. With regard to the specific expression *biglietto per salire sul treno*, this appears in iTenTen in 10 instances, which constitute a negligible minority of cases (6.890e-8%), with only one instance referring to the notion of seizing an opportunity.

Example (4) deploys the TRAIN scenario to frame the ecological transition as an ongoing process, a *treno* (“train”) already in motion across Europe. The actors meant to board the train are businesses, and the implicit notion of the possibility of missing the train mapped onto missing an opportunity is rendered explicit by stating that the train “has already departed” (*ormai già partito*). The requirement of a ticket to board, while part of common-sense knowledge about trains, is not routinely activated in the figurative use of *treno*. This unused part of the metaphor is exploited here to depict the EU taxonomy as the indispensable element for businesses to board it, explicitly signalled by the flag *diventerà* (“will become”).

4.3 Topic-triggered metaphors

This subsection examines two examples in which the subject matter of the article directly motivates the selection of the metaphorical source domain, producing a defrosting effect that reactivates the resonance of otherwise conventional expressions: a sustained DRIVING scenario in an article about the road haulage sector (5), and racing imagery in coverage of the Indy 500’s sustainability initiatives (6).

- (5) Autotrasporto, inizia il viaggio verso la transizione ecologica [...] Il mondo dell'autotrasporto e della logistica ha “ingranato la marcia” e ormai viaggia verso il futuro, un sistema integrato vitale per l'economia del Paese che mostra la nuova strada imboccata (*Il Giornale*)
[Road haulage, the journey towards ecological transition begins [...] The world of road haulage and logistics has “shifted into gear” and is now travelling towards the future, an integrated system vital to the country's economy that shows the new road taken]

The expression *ingranare* has a well-established figurative meaning, with GRADIT providing both the basic meaning “CO TS automatic gear shifting of a motor vehicle, to engage” and the figurative one of “CO fig., to start well, to begin to perform satisfactorily”. Although the basic meaning is TS, given that it refers to a specific area, both are marked as common, and the figurative meaning is recognised as such by its label. The WordSketch reveals the clearly dominant collocation *ingranare la marcia*, whose concordance lines display both literal and figurative meanings. Other collocates, such as *quarta*, *quinta*, and *retro* (referring to specific gears), point to straightforwardly literal usage, confirming that the verb retains its technical sense alongside its well-entrenched figurative one. Goatly (2024)

classifies the related English expressions *step up a gear* or *move up a gear* to indicate that increasing speed through gear changes corresponds to improved performance or intensified effort, closely matching the OED definition of the expression.

The figurative meaning, denoting the successful initiation or acceleration of a process, is thus an entrenched usage, exploiting a conventional JOURNEY metaphor with a specific DRIVING scenario. What makes this passage creative is the sustained exploitation of the source domain across the text through several related metaphors (cf. Semino, 2008), motivated by the material reality of the subject matter of the sector of road haulage. The metaphorical scenario is established in the title *Autotrasporto, inizia il viaggio verso la transizione ecologica* (“Road haulage, the journey towards ecological transition begins”), immediately establishing the conceptual frame through which the sector’s transformation is presented. The scenario is then developed through *ingranare la marcia* (“shifted into gear”), a metaphor that is signalled through the inverted commas, and extended with *viaggia verso il futuro* (“is now travelling towards the future”) and *la nuova strada imboccata* (“the new road taken”). This metaphorical elaboration proves especially effective given the referent: discussing vehicles that literally undertake journeys renders the JOURNEY schema immediately more resonant. What ordinarily constitutes a conventional metaphor signalling ongoing progress becomes here a topically motivated manner of discussing the transition, since trucks do in fact engage gears, travel roads, and embark upon journeys.

- (6) Indy 500 waves green flag on sustainability. The series is taking more and more steps - some bigger than others - toward holding carbon-neutral races by 2050 ... “It’s baby steps,” longtime IMS President Doug Boles said “It’s like hundredths of a second for the cars. It doesn’t seem like much, but when you add up four or five changes, then all of sudden you’ve got a tenth of a second.” That’s where we are. It’s lots of little things that at the end of the day hopefully make a big impact.”
[.] Firestone has been working on a renewable tire since 2012 and is nearing the finish line to getting it on track. (*The Independent*)

The expression *wave the green flag* is not registered as an idiom in any of the dictionaries consulted. It does not appear in the OED, Longman, or Goatly (2024) as a figurative expression, though related mappings are well established. The OED defines *green light* as “a green-coloured light (on a railway line, a road-traffic signal, etc.) giving permission to proceed”, noting that it is frequently figurative as “permission to proceed on a course of action”, and Goatly (2024) similarly registers this established idiomatic

expression. Corpus evidence indicates that *wave green flag* operates mostly literally, with examples in the concordances referring to the actual waving of a green flag in motorsport or other racing contexts.

Example (6), which discusses the famous auto race Indy 500, deploys racing imagery to frame the beginning of sustainability efforts, with the headline *Indy 500 waves green flag on sustainability* and extended metaphorical elaboration throughout the article. The creativity of this headline operates at multiple levels in context. At the most basic, it substitutes the conventionalised green light with the contextually motivated green flag, exploiting the racing context to select an element from the same conceptual frame that is more topically apt and evoking the same associations with permission. Additionally, *green* takes on an additional meaning: it does not only refer to approval, but, in the context of sustainability discourse, also carries metonymic association with environmental responsibility. The more conventional metaphor of *taking more and more steps* is used to create a scenario of incremental adoption of measures of varying reach (*some bigger than others*). This is further elaborated through a simile drawn from the racing domain: *It's like hundredths of a second for the cars*, which reframes incremental sustainability measures in terms of the marginal gains typical of motorsport. The comparison foregrounds how changes that might appear negligible in isolation can, when accumulated, produce significant outcomes, thus exploiting the contextual connotations to frame the adopted measures positively. The article concludes with the expressions *nearing the finish line* on a renewable tyre and *getting it on track*, further revitalising the conventional metaphor for approaching completion through the connection with racing.

4.4 Creative elaborations and recontextualisations

In this subsection, at the creative end of the gradient, examples (7–9) illustrate three distinct mechanisms: a novel lexical instantiation of an entrenched mapping (7), the recontextualisation of a domain-specific expression (8), and a sustained elaboration explicitly announced and extended across the article (9).

- (7) This year you could barely move without being clonked round the head by a massively important message. Of the show gardens, I counted 16 with some kind of sustainability or climate change angle (*The Telegraph*)

This constitutes a remarkably creative extension of the entrenched mapping EFFECT IS IMPACT, where emotional or cognitive effects are conceptualised as physical strikes. This mapping is widely attested in conventionalised expressions catalogued by Goatly (2024), such as *hit* (“have a strong emotional effect on”) or *bludgeon* (“persuade or force”). The verb *clonk*, however, does not have any recorded figurative sense in either the OED or in the *Thesaurus*, and represents a markedly more colloquial and vivid instantiation. Corpus evidence confirms the novelty of this figurative use. A proximity search for *clonk* within six words of *head* in the enTenTen corpus yields 274 concordance lines, which appear to be overwhelmingly literal.

Example (7) thus conveys the notion that the *massively important message* is not simply transmitted; it is something with which people can be *clonked round the head*. Through this expression, sustainability and climate change are reconfigured as blunt objects deployed against attendees of the Chelsea Flower Show. The metaphor frames the communicative act as physical assault, with the designers of the gardens brandishing an instrument and flinging it at the heads of the unsuspecting victims attending the event. The verb suggests forceful, repetitive striking that is inescapable (*could barely move without*), constituting an unwelcome intrusion imposed on visitors rather than being integrated in the show gardens.

- (8) We couldn't decide whether it was just the travel industry that was tying itself in knots over the issue, or if a sustainable consciousness had truly trickled down to the average holidaymaker (*The Independent*)

The verb *to trickle* normally selects liquid entities; the OED defines it as “to flow in a very scanty and halting stream”, with an established figurative extension “transferred and figurative. Also used facetiously for “to make one’s way, go”. However, the co-occurrence with *down* activates a fixed expression from economic discourse: the trickle-down theory. The OED defines the compound as: “Of or based on the theory that economic benefits to particular groups will inevitably be passed on to those less well off”. Corpus evidence confirms the conventionalised status of the economic expression, with the combination *trickle down* + *effect* yielding 65 figurative concordance lines. The WordSketch for *trickle* followed by *down* (with up to two intervening tokens) indicates literal uses through collocate subjects such as *tear*, *blood*, and *sweat*, and objects such as *cheek*. On the other hand, figurative uses are indicated by terms such as *wealth*, *benefit*, *profit*, or *worker*.

While this is a highly conventionalised metaphor within economic discourse, in example (8) it is revitalised: by being adapted and inflected, its metaphorical creativity is enhanced (Fuoli et al., 2021a). It is the notion of a *sustainable consciousness* that is construed as something that spreads in this specific manner. Proponents of the trickle-down theory contend that policies benefiting wealthy individuals or businesses will ultimately transmit advantages to less affluent social groups in the form of employment and economic growth (Koerting, 2023). This metaphor builds on the deeply entrenched vertical representation of strata of society as hierarchical levels, with economic elites positioned at the top. However, the theory has been widely criticised for failing to actually deliver meaningful benefits to lower-income groups, rendering its effectiveness a matter of sustained debate among economists and policymakers. The very label of the theory carries arguably negative connotations, inasmuch as trickling down implies that those at lower levels experience only negligible and delayed effects. Transferred to the domain of sustainability, awareness itself is reified as a liquid resource that can trickle down. The movement thus retains the defining properties of the source metaphor: vertical, top-to-bottom trajectory combined with an uneven and scant flow. This construal suggests that the spread of sustainability awareness is partial and hesitant rather than transformative.

- (9) “I finally found the **perfect metaphor**,” wrote NYU Stern School of Business’s Alison Taylor in a LinkedIn post last month. She had been looking for a set of rules *comparable to* corporate climate reporting - and the UK’s new calorie labelling requirements for large restaurants provided an example. *Just like* corporate climate reporting, publishing calories on menus can be seen as a big step, says Taylor, who is executive director of Stern’s Ethical Systems research platform. It can also take time to make an impact. She points to the US, where chain restaurants have been displaying the caloric value of meals since 2018, and customers now consume only eight fewer calories per day. *Similarly*, climate disclosures in an annual report can look good, she argues, without achieving rapid change. However, there is also *a telling difference* between the rules: unlike calorie counts, companies’ environmental data does not come in a universally accepted unit of measure. [...] The risk, she says, is that relying on climate reporting without other policy measures *would equate to* “embracing another fad diet”, while “the world will keep getting fatter - and hotter”. (*Financial Times*)

The expression *fad diet* is not recorded neither in the OED nor in the Longman, and the Thesaurus does not mention it. The OED defines *fad* as “a crotchety rule of action; a peculiar notion as to the right way of doing something; a pet project, esp. of social or political reform, to which

exaggerated importance is attributed”, a notion that is applied to a type of diet in this expression. The Word Sketch points to a literal dietary reading, with collocates such as *low-carbohydrate*, *high-protein*, *low-carb*, *weight-loss*, *restrictive*, *unhealthy*, *low-fat*, *crazy*.

Example (9) shows how the metaphor is explicitly announced and then repeatedly extended throughout the article, through to the final paragraph, contributing to the establishment of textual cohesion across sentences and paragraphs (Krennmayr, 2011). The metaphor articulates a fundamental critique of ESG market premises, questioning whether climate and sustainability disclosures alone can effectively address climate change and highlighting limitations that should be acknowledged. The speaker explicitly announces the analogy by stating that she found *the perfect metaphor*, establishing *the UK's new calorie* labelling as *an example*. The correspondences of elements between source and target are overtly delineated here and repeatedly signalled through various metaphor flags. Just as beginning a fad diet can initially appear to yield meaningful progress, so can adopting climate disclosures in annual reports look like an important step forward. Conveniently, in both cases the consequences are not expected to be manifest immediately: impact in the form of, respectively, weight loss and lowering of global temperatures, requires time to become evident (*takes time to make an impact*). Taylor deploys this metaphor to warn that, like a fad diet, depending only on voluntary climate disclosures might seem like an effective solution temporarily, yet it fails to resolve the underlying problem. This risk is encapsulated in the statement that *the world will keep getting fatter - and hotter*, explicitly positioning on the same level the figurative consequences in the source domain (*fatter*) and the literal consequence in the target domain (*hotter*). Interestingly, the analogy is exploited both because of the similarities, and because of the differences. Metaphorical frames typically function in argumentation by foregrounding the aspects of the target that are mappable onto the source and conducive to the argument being made. In this example, however, the metaphor also serves to highlight a *telling difference*, marked with the flag *unlike*: whereas calorie labelling can rely on a universally accepted unit of measurement, climate reporting lacks any comparable standard, as environmental data does not come in a single, agreed-upon metric.

5. Concluding remarks

The analysis has demonstrated how a multi-criteria approach combining dictionary definitions, corpus frequency, correspondence to established mappings, and contextual usage can be operationalised into a framework to assess the degree of conventionality and creativity in metaphorical expressions. The multi-criteria approach aims to establish a more complete picture of language use. For instance, expressions not registered in any dictionary as figurative may nonetheless emerge as established in external corpora, as was the case with several collocational patterns identified through the WordSketch. Conversely, dictionaries may diverge in their treatment of the same expression, as in the different labels for *fulcro* (“fulcrum”) and *percorso* (“path”) in GRADIT and Treccani. These discrepancies are reflections of the gradable nature of the phenomenon under investigation; the multi-criteria framework adopted here does not eliminate this inherent indeterminacy, but rather provides a more empirically grounded basis for positioning expressions along the gradient than any single criterion can offer in isolation.

The cross-linguistic dimension highlights a disparity in the availability of resources. For English, Goatly’s *Thesaurus of Metaphors* (2024a) and a substantial body of previous research on metaphorical mappings provide a relatively robust basis for judgements of conventionality. For Italian, by comparison, there is a dearth of resources, resulting in an asymmetry that has direct consequences for the empirical grounding of metaphoricality judgements. In various cases, the two languages show convergent patterns: for instance, *path* and *percorso* function as highly conventionalised instantiations of the JOURNEY metaphor, with comparable collocational profiles spanning literal and figurative uses. In others, however, the patterns diverge. The analysis of *biglietto per salire sul treno* (“the ticket to board the train”) revealed an asymmetry in the distribution of figurative conventionalisation across the two languages: the figurative meaning of *treno* (“train”) is more entrenched in Italian, while in English it is *ticket* that carries the more established figurative extension. Conventionality cannot be assumed to transfer between languages, even relatively close ones: the metaphors lexicalised in one language may not overlap with those in another (Philip, 2016).

The analysis has shown that creativity in metaphor use is a remarkably heterogeneous phenomenon. Through extending, the exploitation of unused mapping slots introduces elements that are available

within a source-domain frame but not routinely activated in figurative usage, as in example (4). Through composing, the clustering of multiple expressions from the same source domain produces sustained metaphorical scenarios that foreground the source domain and reactivates its literal resonance, as in example (5) and (6), producing a defrosting effect whereby conventional expressions reacquire vividness, additionally reinforced by their topic-triggeredness. Example (7) illustrates creativity through a novel lexical instantiation of an entrenched mapping; example (8) through the recontextualisation of a domain-specific expression into sustainability discourse, importing its evaluative charge; and example (9) through explicit elaboration sustained across the entire article, deployed for argumentative purposes. Hence, the analysis demonstrates how metaphoricity emerges discursively, in a complex interplay of system-level degrees of conventionality and creativity and contextually grounded elements. The cline proposed here offers one way of examining how these mechanisms operate in practice across two languages with varying degrees of visibility and persuasive force.

The limitations of the present study should be acknowledged. The corpus is restricted to sustainability discourse, and the findings should be interpreted as reflecting patterns specific to this domain and genre rather than as claims about metaphoricity in newspaper discourse more generally; the methodological framework, however, is not inherently tied to this object of study and may be applied to other discourse contexts. Additionally, while the four criteria provide a more empirically grounded basis for metaphoricity judgements than intuition alone, the positioning of expressions along the gradient ultimately still involves a degree of analytical interpretation. Future work could explore the application of the framework to broader corpora, investigate the extent to which the findings generalise beyond sustainability discourse, and examine the feasibility of incorporating inter-rater agreement to strengthen reproducibility.

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The Roads We Take: The Metaphor of the Journey in Lenin's Works and Their Finnish Translations

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Abstract

*This corpus-based study examines the JOURNEY metaphor in Vladimir Lenin's political writings and their Finnish translations. Using conceptual metaphor theory, it analyzes data from the parallel corpus ParVLen compiled at the Languages Unit of Tampere University (Finland). A semi-automatic method combines concordance searches with manual metaphor annotation. The analysis focuses on four lexical triggers: **put'** 'way', **doroga** 'road', **povorot** 'turn', and **pohod** 'expedition'. Results show that JOURNEY metaphors systematically conceptualize political struggle, social change, and historical development. Finnish translations largely preserve these metaphors, although standardization, demetaphorization, metaphorization, and lexical differences occasionally modify their expression and interpretation.*

Keywords: political metaphor, parallel corpora, Marxist discourse, translation of metaphors

1. Introduction

Vladimir Lenin is one of the most contradictory figures in Russian history (Tumarkin, 1983) and the most translated political writer in the world (Index Translationum, n.d.). Lenin's numerous works cover multiple topics and genres. His influence on political discourse in Russia and socialist countries as well as on leftist movements worldwide was substantial. Lenin wrote in an aggressive style, attacking his opponents, accusing them of ignorance, short-sightedness, and naivety, and sometimes even calling them names (Prihod'ko, 2012). His writings are full of metaphors of all kinds. The existence of translations of Lenin's works into many languages makes it possible to study not only original metaphors but their translations as well. This makes Lenin's texts an interesting source of data for studying the use of metaphors in political discourse and their circulation via different languages and cultures.

In this paper, a corpus-based study of the JOURNEY metaphor in Lenin's writings will be presented. This metaphor is very typical for the human conceptual system (Lakoff and Johnson, 1980: 44-45; Ritchie, 2013). We compare many things to a journey: human life (Dante: *Nel mezzo del cammin di nostra vita*), marriage (John Steinbeck: *A journey is like marriage*), learning (Isaac Asimov: *Learning is not a destination but a lifelong journey*), and the movement of astronomical bodies (Walt Whitman: *I believe a leaf of grass is no less than the journey-work of the stars*). This metaphor works very well in the world of politics: states, governments, political parties, and the national economy are subject to processes and activities that can be explained and made clear by introducing the allegory of a journey.

The metaphor of the JOURNEY was important for Lenin; he is often portrayed in numerous statues, pictures, and posters with his right arm extended forward, possibly showing the way to communism. One of the most popular of Lenin's quotes/slogans is *Vernoj dorogoj idëte, tovariši* ('Comrades, you are going the right way')¹² (Fig.1).

¹² Short Russian examples in text are transliterated by the ISO 9 standard, while longer examples are left untransliterated.

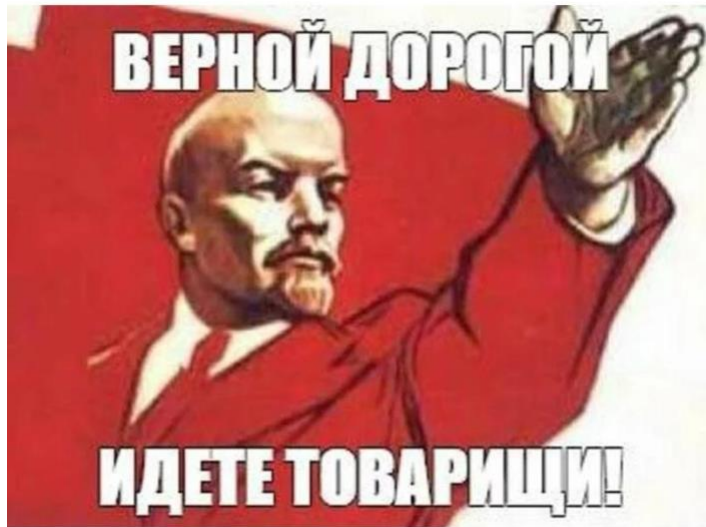


Figure 1. A Soviet poster with the slogan “Comrades, you are going the right way”.

This study not only examines the functioning of this metaphor in the writings of a particular author but also traces its journey from one language to another. The research data come from ParVLen, a multilingual parallel corpus of Lenin’s works compiled by our research group at the Languages Unit of Tampere University (Finland). The corpus currently covers three language pairs (Russian–Finnish, Russian–English, Russian–Spanish), but this mini-study will be based on the Russian–Finnish data only (at the moment of performing the case study, the corpus consisted of 419 text pairs with about 1.8 million running words per language). Many texts in this corpus are presented with multiple translations; for example, there are six different translations of the pamphlet *State and Revolution* into Finnish. This was done deliberately to make it possible to study variation in translations, which can provide interesting findings both in linguistics and translation studies. We also use the LenCor corpus, the corpus of Lenin’s works from the 5th edition of Collected Works (2,300 documents, 4,4 M running

words).¹³ The corpora are processed and queried with the corpus manager No Sketch Engine. To ensure the reasonable interpretation of the findings, the authors comprise a Russian native speaker and a Finnish native speaker. The research questions are:

- How is the JOURNEY metaphor represented in Lenin's works?
- How is this metaphor represented in the Finnish translations? What kind of variation is observed?
- Do the JOURNEY metaphors from Lenin's writings still function in present-day Russian and Finnish?

2. Metaphors in political discourse

According to Lakoff and Johnson, metaphors are not just 'a matter of words' but they are everywhere and even '[o]ur ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature' (Lakoff and Johnson, 1980: 3). Metaphors occur not only in poetry; they also appear in everyday communication, in technological and scientific discourses (Caballero and Suárez-Toste, 2008; Haddad *et al.* 2023; Papadoudi, 2014), in business (Vandenberghe *et al.*, 2014), as well as in political discourse (Silaški and Đurović, 2014, Chilton, 2004: 52).

Metaphors are one of the important means of convincing the audience, and therefore they can easily be found in any political speech or publication. 'Metaphor is effective in public communication because it draws on the unconscious emotional associations of words and assumed values that are rooted in cultural and historical knowledge' (Charteris-Black, 2018: 202). Metaphors have at least the following purposes: persuasive (gaining attention and establishing trust), heuristic (simplifying issues), predicative (implying positive and negative evaluations), empathetic (arousing feelings), aesthetic (creating textual coherence), ideological (creating a world view), and mythic (framing participant roles) (*ibid.*: 248).

¹³ See https://puolukka.rd.tuni.fi/lenin_project/ for more information on the research group and the corpora. The corpora are currently under construction and will be made publicly available upon their completion.

Many researchers study metaphors across languages and cultures and notice that not all metaphors can be easily transferred from one language environment to another. For example, many animal metaphors are language-specific (Fernandes, 2021) and the same applies to colour metaphors (Kalda and Uusküla, 2019). Therefore, metaphors can present problems for translators (Schäffner, 2004).

Recognizing metaphors and working out solutions for their translation is an important issue in translator training (Hanić *et al.*, 2016; Meyers, 2019; Ramadan *et al.*, 2020). On the way from one language to another, the structure and meaning of metaphoric expressions may change due to the influence of the vocabulary, structure, semantics, and cultural differences of the target language (Oncins-Martínez, 2003; Papadoudi, 2003). Translators should be aware of this, since the incorrect handling of metaphors in political discourse may even lead to political scandals (Bullut, 2013).

The same metaphors can even take on a slightly different tone in different languages (Musolff *et al.*, 2014; Kela, 2011). An easy example is *arms race*, where the word *race* is associated in English in the first place with a running competition (this can be seen, for example, in the caricatures of the time of the Cold War). The Finnish equivalent *kilpavarustelu* ‘arms competition’ is more general and the Russian *gonka vooruženij* ‘arms rally’ is based upon a car rally metaphor. The metaphors are similar and functional, but they are not identical.

The literature on translating metaphors is dealing in most cases with finding translation solutions for single metaphors, and the researchers seem to be more interested in solutions for creative metaphors. In this paper, we will collect as many metaphorical contexts as possible, including novel, entrenched, and conventional metaphors, and we will try to get a general view of translation solutions used by Finnish translators of Lenin.

3. Collecting and annotating the data

3.1 Methods of extracting metaphors from corpora: state of the art

A metaphor is not just one word with a changed meaning. It might be one word, but more often it is an expression. What is essential is that it is a unit that is not used in its customary meaning and offers some other interpretation (Ritchie, 2013: 12). In fact, a metaphor is not a concrete word

or phrase, but a concept (Lakoff and Johnson, 1980: 6), and for this reason metaphors are very flexible; the same metaphors may be built with the help of different lexemes using different language constructions. This presents the main challenge when looking up metaphors in a text and that is why a search for metaphors is difficult to automate (see, e.g. Papadoudi, 2014; Charteris-Black, 2018: 205-206).

However, it is evident that close reading is not effective either, especially when working with large datasets. To collect metaphors from corpora, it is therefore important to develop a method that makes it possible to identify candidate expressions without reading all the texts. There exist studies on the automatic extraction of metaphors (see, e.g. Mason, 2004; Hong, 2016, Mohler *et al.*, 2016). The rapid development of generative AI makes it possible to use LLM applications for extracting metaphors, and the idea seems to be very promising (Haddad *et al.*, 2023). In all cases, the methodology depends on the definition of metaphor and on the distinction of metaphoric usage from non-metaphoric, which is often problematic (Coll-Florit and Climent, 2019). Many researchers therefore prefer semi-automatic methods of extracting metaphors (Ureña Gómez-Moreno and Faber, 2011). The fuzziness of the concept of metaphor makes it difficult not only to extract metaphors from corpora but also to evaluate the effectiveness of the methods. As a result, there are still relatively few publicly available metaphor extraction tools, and it is difficult to say how reliable those that exist are. For this reason, the semi-automatic approach looks more practical, at least at present.

As was mentioned above, metaphors have a flexible structure, but we suggest that they usually have a stable core part: a lexeme that triggers the metaphor and becomes the central part of the metaphoric expression (hereafter the term **lexical trigger** will be used). For example, the metaphor *to come to a journey's end* = 'to die' is built upon the lexeme *journey* and this lexeme would be the element that can be used to define a search query.

To extract metaphors from a corpus, we performed the following procedures: 1) compiling a list of lexical trigger candidates, 2) collecting concordances of all occurrences of lexical trigger candidates from the corpus, 3) removing non-metaphorical examples, 4) getting full metaphoric expressions, and 5) finalizing the list of metaphoric expressions. The procedure would have been very time-consuming had the task been to extract all metaphoric contexts: we would have had to go through at least all medium-frequency words from the frequency list of the corpus. However, in this study we were interested in only one group of metaphors,

and this made it possible to define a relatively short list of lexical triggers and obtain moderate-size concordances for the analysis. Only some low-frequency lexemes from the thematic field might have been forgotten or passed unnoticed.

3.2 Searching for the JOURNEY metaphors in Lenin's works

The compilation of the list of metaphors started, as it was shown in the previous section, with setting up a list of lexical triggers. These were Russian nouns¹⁴ from the thematic field JOURNEY: 'road' (*put'* 'way', *doroga* 'road', *tropa* 'path', *tunnel* 'tunnel', etc.), 'journey' (*putešestvie* 'trip', *poezdka* 'trip', etc.), 'means of transportation' (*poezd* 'train', *parovoz* 'locomotive', *korabl'* 'ship', *lodka* 'boat', etc.), 'travelling item' (*kotomka* 'knapsack', *posob* 'walking stick', etc.), and 'traveller' (*putešestvennik* 'traveller', *strannik* 'wanderer', *poputčik* 'fellow-traveller', etc.). Next, concordance searches in the LenCor corpus were performed. The concordances were checked, and non-metaphoric contexts were removed. A complete list of our findings can be found in the Appendix.

Surprisingly, many words that could be used metaphorically either did not occur at all or occurred once or twice in our data, for example, *tropa/tropinka* ('path'), *tunnel* ('tunnel'), *putešestvennik* ('traveller'), *putnik* ('traveller'), *strannik* ('traveller'). Although Lenin travelled a lot in his life, and he did travel by ship, by rail (once even as a stoker), and by car, it appears he was not particularly keen on using these images in his writings, and these words mostly occur in their direct meaning. In the LenCor corpus, there are only three metaphorical contexts involving travelling by ship, one context involving a train, and one context involving a car.

The lexemes with a relative frequency higher than 10 instances per million words (ipm) were checked with the ParVLen.FI corpus (the Russian-Finnish subcorpus of ParVLen). The results of the search are displayed in Table 1.

Word	Meaning	Freq. (LenCor)	ipm	Freq. (ParVLen.FI)	Freq. metaphors (ParVLen.FI)
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¹⁴ In this particular semantic group it was possible to get along with nouns only, although we were ready to check verbs, adjectives, and adverbs as well.

put'	way	2578	454,6	975	588
doroga	road	947	167,0	390	139
povorot	turn	412	72,6	90	89
pohod	expedition	212	37,4	60	51
gora	mountain	172	30,3	15	15
boloto	swamp	151	26,7	58	54
koleso	wheel	70	12,3	40	28

Table 1. Checklist for extracting journey metaphors from ParVL_{en}.FI corpus

Checking of the contexts has shown that some of the words of the list were used in other metaphorical models. The word *gora* 'mountain' was used five times in the expression *Gora rodila mys'* 'A mountain gave birth to a mouse'. Although the remaining ten contexts deal with mountain climbing, the amount of data is not sufficient for our research. About half of the contexts of the word *boloto* 'swamp' are metaphors of NATURE (swamp = 'a place where everything is bad and rotten') and the remaining contexts are about getting lost in a swamp. The word *koleso* 'wheel' is much more often used in the model MECHANISM (e.g. *koleso istorii* 'wheel of history') and only three contexts concern the wheels of vehicles.

As a result, only the first four words in Table 1 are both frequent enough and are consistently used in JOURNEY metaphors: *put'* 'way', *doroga* 'road', *povorot* 'turn', and *pohod* 'expedition/crusade'. In our paper, we will therefore concentrate on the metaphorical usage of these words.

4. The case studies

4.1 *Put'* - 'way'

The Russian word *put'* can mean: 1) a route of a journey (*dal'nij put'* 'long way'), 2) a road (*uhabistyj put'* 'bumpy way'), 3) rails (*železnodorožnye puti* 'railway tracks', usually plural), and 4) a means of doing something (*puti rešeniâ problemy* 'ways of solving the problem').

Meaning (4) is problematic, because although it is a language metaphor (a process of obtaining a result is compared with a journey), still, it is a ‘dead’ metaphor that has lost its idiomaticity. Among the contexts from Lenin’s works there are many occurrences of the word *put’* with meaning (4); for example, *socialističeskij put’*, *kapitalističeskij put’* and the like. They can, with some effort, be interpreted as journey metaphors, but they are more likely to have a non-metaphorical meaning of means and methods (and that is why it is impossible to replace the word *put’* with the more concrete *doroga* ‘road’: **socialističeskaâ doroga*, **kommunističeskaâ doroga*). For this reason (following Lenin’s advice *Better fewer, but better*), the contexts in which *put’* had meaning (4) were removed from the concordance. Still, among the remaining contexts many are on the borderline between metaphors and non-metaphors.

All contexts we found in the concordance relate to the processes of the state and society: developing from feudalism to capitalism and from capitalism to socialism, preparing revolution and carrying it out (Table 2).

Category	F
Choose the way	245
Lead astray	60
Obstacle on the way	35
Road construction	1
Show the way	70
Travel	177
Grand Total	588

Table 2. Metaphorical models in the concordance for the word put’

According to Table 2, the most frequent model used with *put’* is ‘choose the way’ (245 contexts): ‘What is the right way?’, ‘Is a short track the right one?’, and ‘Where does this road go?’. These are the questions that repeatedly occur in many of Lenin’s writings. The ‘right way’ is usually straight, long, and/or hard. An ‘easy way’ usually leads nowhere.

After choosing the way a guide is needed. Somebody is showing the way (70 contexts), however, there are many false guides who do not know the way or are deliberately trying to lead the people astray (60 contexts). The next phase after choosing the way is actual travelling (177 contexts) and overcoming obstacles (35 contexts). Only one context is about ‘road

construction'; evidently using the word *put'* with meaning (2) is not typical for Lenin's language.

In general, the contexts are not very creative; they are rather standard clichés with changes in society shown as a kind of journey (cf. Charteris-Black, 2018: 222).

- | | | |
|--|---|---|
| (1) Мы убеждены, что таким образом мы будем <u>идти по пути</u> , намеченному "Российской социал-демократической рабочей партией" в изданном ею "Манифесте". | Olemme vakuuttuneita, että siten tulemme <u>kulkemaan tietä</u> , jonka "Venäjän sosialidemokraattinen työväenpuolue" on julkaisemassaan "Manifestissa" viitoittanut. | We are convinced that in this way we shall <u>tread the path</u> which has been indicated by the Russian Social-Democratic Labour Party in its published <i>Manifesto</i> . ¹⁵ |
|--|---|---|

(*Our programme*, 1899)

However, we also came across lines that sound almost like poetry, for example (2).

- | | | |
|--|--|---|
| (2) Мы идем тесной кучкой <u>по обрывистому и трудному пути</u> , крепко взявшись за руки. | Me kuljemme <u>jyrkänteistä ja vaivalloista tietä</u> tiiviinä ryhmänä käsi kädessä. | We are marching in a compact group <u>along a precipitous and difficult path</u> , firmly holding each other by the hand. |
|--|--|---|

(*What is to be done*, 1902)

In most contexts the Finnish equivalent for *put'* is *tie* 'way'. The Finnish word has a very broad meaning and can mean any area of a surface (land, water, air) prepared and marked up for the movement of persons and/or vehicles. Unlike the Russian word *put'* and the English word *way*, the word *tie* does not have the meaning 'means of doing something'. As a result, the above-mentioned Russian contexts like *put' kapitalizma* 'capitalist way', *reformatorskij put'* 'way of reforms' etc. that are not metaphorical in Russian are translated into Finnish as *kapitalistinen tie*, *reformistinen tie* and are metaphorical, thus metaphoricalness is expanding in the translations.

Another possible Finnish equivalent for *put'* in meaning (3) 'railway' is *raide* 'railway track'. It occurs in our data only in seven contexts. The search for *raide* in the Finnish part of the corpus yields 14 hits, 7 of which are the

¹⁵ The English translations of the examples are taken from the English edition of the *Collected Works* by Progress Publishers, Moscow (1960–1970).

above-mentioned occurrences with *raide* as equivalent to *put*’, 5 with *raide* as equivalent to *koleä* ‘track’, and 3 with *raide* as equivalent to *rel’sy* ‘railway tracks’.

- | | | |
|---|--|--|
| (3) Марксизм учит, что общество, основанное на товарном производстве, стоящее в обмене с цивилизованными капиталистическими нациями, на известной ступени развития неизбежно становится и само на <u>пути капитализма</u> . | Marxilaisuus opettaa, että yhteiskunta, joka perustuu tavaratuotantoon ja joka on vaihtosuhteissa kapitalististen sivistyskansojen kanssa, siirtyy määrätyllä kehitysasteella itsekin kiertämättömästi <u>kapitalismin raiteille</u> . | Marxism teaches that a society which is based on commodity production, and which has commercial intercourse with civilised capitalist nations, at a certain stage of its development, itself, inevitably takes the <u>road of capitalism</u> . |
|---|--|--|

(*Two Tactics of Social-Democracy in the Democratic Revolution*, 1905)

In example (3), the Finnish translation is more concrete than the Russian original and the English translation, as it presents the development of the society as a journey by train. Although the Russian word can be interpreted both as ‘road’ and ‘railway’, the first is preferred, and indeed train metaphors are not typical for Lenin. Obviously, the use of *raide* in Finnish translations comes from the 1930s to 1950s, a time of the dominance of railways.

In most of the contexts of the concordance, the translators try to preserve the metaphors from the source text, and non-metaphorical translations are rare.

- | | | |
|---|---|--|
| (4) Подобная политика может лишь, в конце концов, привести партию на <u>ложный путь</u> . | Tuollainen politiikka voi ajan pitkään vain johtaa oman puolueen <u>harhaan</u> . | In the long run such a policy can only lead one 's own party <u>astray</u> . |
|---|---|--|

(*State and Revolution*, 1918)

In example (4), the ‘leading to the wrong way’ of the original is replaced by just ‘getting lost’ in the Finnish and English translations. However, in the other five Finnish translations of the pamphlet, this context is translated metaphorically: *johtaa väärälle tielle* ‘lead to the wrong way’ (1919), *viellä valheelliselle tielle* ‘take to the false way’ (1926), *johtaa harhatielle* ‘lead to the misleading way’ (1946), and *johtaa harhateille* ‘lead to misleading ways’ (1960

and 1972). The different translations of this sentence are relatively similar and differ only in the translations of the metaphor where the translators were trying to find the closest equivalent. The only non-metaphoric translation of example (4) was published in 1935, during Stalin's purges, and probably the translators were trying to make the translation more neutral (see also Mikhailov and Koskinen, 2026).

Example (4) demonstrates a lot of variation in the translations of metaphors, but it is not always the case. Some of Lenin's metaphors have been translated into Finnish using the same equivalent metaphors in Finnish. For example, *idti Adj putem* 'to go by the Adj way' has been translated in most cases as *kulkea Adj tietä/teitä* 'go Adj way/ways' (the word *tie* is in singular or plural, depending on the context); see example (2). Another example is the phrase *rasčistit' put'* 'to remove obstacles from the way', which has been translated into Finnish in almost all the cases as *raivata tie* 'to remove obstacles from the way'. Only in one of the translations of the 1930s has it been translated as *puhdistaa tie* 'to clean the way', which is unidiomatic and rare in this context. In modern Finnish it usually means the actual cleaning of the road, such as the removal of fallen leaves or snow.

(5) Успех крестьянского восстания, победа демократической революции лишь <u>расчистит путь</u> для действительной и решительной борьбы за социализм на почве демократической республики.	Talonpoikaiskapinan onnistuminen, demokraattisen vallankumouksen voitto <u>puhdistaa vain tietä</u> todelliselle ja ratkaisevalle taistelulle sosialismin puolesta demokraattisen tasavallan pohjalla.	The success of the peasant insurrection, the victory of the democratic revolution will merely <u>clear the way</u> for a genuine and decisive struggle for Socialism on the basis of a democratic republic.
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(*Two Tactics of Social-Democracy in the Democratic Revolution*, 1905)

Some variation can be seen in the translations of the expression *pokazyvat'/ukazyvat' put'* ('show the way'). Finnish translators use the following equivalents: *näyttää tie*, *osoittaa tie*, and *viitoittaa tie*. They give different interpretations. *Näyttää tie* is the most general and usually this means 'to guide a group', *osoittaa tie* means 'to point the direction', and *viitoittaa tie*, 'to mark the route, to set signs on the way'. The most common is the equivalent *osoittaa tie*.

4.2 *Doroga* - 'road'

The word *doroga* is much less frequent than *put'*. While the word *put'* is about the journey, the word *doroga* is more about the road, although both words have both meanings. We have shown in the previous section that Lenin's metaphors with the word *put'* only occasionally relate to the road and its condition.

Category	F
Choose the way	25
Find the way	3
Get off the road	8
Give way	4
Obstacle on the way	9
Road construction	30
Show the way	11
Take the road	22
Travel	27
Grand Total	139

Table 3. Metaphorical models in the concordance for the word *doroga* 'road'

We can see from Table 3 that the metaphor of 'road construction' is the most frequent, while there were not many examples of using this metaphor with the word *put'*. Evidently *doroga* is more materialized, more connected with the road surface, with the weather conditions, and with the landscapes, while *put'* is more abstract and is about reaching the destination.

- | | | |
|---|---|---|
| (6) Монополия <u>пролагает себе</u>
<u>дорогу</u> всюду и всяческими
способами, начиная от
"скромного" платежа
отступного и кончая
американским
"применением" динамита к
конкуренту. | Monopooli <u>raivaa itselleen</u>
<u>tien</u> kaikkialle ja kaikin
keinoin, alkaen
"vaatimattomista"
luopumismaksuista ja
päätyen amerikkalaiseen
dynamiitin "käyttämiseen"
kilpailijaa vastaan. | Monopoly <u>hews a path</u>
<u>for itself</u> everywhere
without scruple as to
the means, from paying
a "modest" sum to buy
off competitors, to the
American device of
employing dynamite
against them. |
|---|---|---|

(*Imperialism, the Highest Stage of Capitalism*, 1916)

However, the two words are very close and occur in similar contexts with similar meanings, cf. *dal'nââ doroga/dal'nij put'* 'long way', *obhodnoj put'/obhodnaâ doroga* 'roundabout route', *po puti/po doroge* 'on the same way', etc. The word *put'* is sometimes used in the materialized meaning as well, as we can see in examples (2) and (5) in the previous section. The slogan *Vernoj dorogoj idete, tovariši* ('You are going the right way, comrades', see Fig. 1), also exists in the form *Vernym putëm idete, tovariši*.

In Lenin's works, the contexts with *doroga* contain more often descriptions of the road conditions.

- | | | |
|---|--|--|
| <p>(7) Ну, а если согласны
встать на эту <u>дорогу</u>, так
потрудитесь уже
самостоятельно двигаться
по ней вперед, не
заставляйте тащить вас,
не робейте по поводу
"необычного" вида этой
дороги, не смущайтесь
тем, что во многих
местах вы и вовсе
никакой <u>проторенной</u>
<u>дороги</u> не найдете, а
должны будете и по краю
обрыва проползти, и
через чащу продираться,
и через ямы перескочить.</p> | <p>Jos kerran suostutte
<u>lähtemään tätä tietä</u>, niin
olkaa hyvä ja kulkekaa
itsenäisesti sitä
eteenpäin, älkää
pakoittako vetämään
itseänne, älkää arastelko
tämän tien
"epätavallista" näköä,
älkää hämmästykö sitä,
että monin paikoin ei
laisinkaan löydy <u>tallattua</u>
<u>tietä</u>, vaan teidän täytyy
ryömiä jyrkänteen
reunaa, pujottautua
tiheikön läpi ja loikkia
kuoppien yli.</p> | <p>Well then, if you do agree <u>to</u>
<u>follow this road</u>, make an
effort to proceed along it
independently; don't make it
necessary to drag you; don't
let the "unusual" appearance
of this road frighten you,
don't be put out by the fact
that in many places you will
find no <u>beaten track</u> at all,
and that you will have to
crawl along the edge of
precipices, break your way
through thickets, and leap
across chasms.</p> |
|---|--|--|

(*The Agrarian Programme of Russian Social-Democracy*, 1902)

However, Lenin's dream is not the swampy and rocky way of the previous example, but a straight and broad highway: *stolbovaâ doroga, prâmaâ doroga*.

- (8) В эту дверь прежде всего Siitä ovesta on käytävä We must first pass
надо выйти для того, ennen kaikkea siksi, että through this door in order
чтобы идти дальше, для voitaisiin mennä to go farther, to march
того, чтобы по eteenpäin, siksi, että along the wide and open
открытой, по широкой voitaisiin avointa, leveää road to the very end, to the
дороге идти до самого tietä kulkea aivan perille, complete emancipation of
конца, до полного koko työtätekevän kansan all working people in
освобождения всего täydelliseen vapautukseen Russia.
трудящегося рабочего Venäjällä.
народа на Руси.

(*To the Rural Poor*, 1903)

In Finnish, the equivalent for the two Russian words, *put'* and *doroga*, is the same – *tie*. This means that in the Finnish translations the difference between the ‘more abstract’ *put'* and ‘more material’ *doroga* disappears. This does not cause any great losses in meaning, because, as we have shown, the differences between Russian words are very subtle and difficult to interpret.

4.3 *Povorot* - ‘turn’

As we know, the most important moments of the journey are the crossroads when the traveller must choose whether to take a turn or not, and if so, in what direction. The words *perekrestok* ‘crossroads’ and its old-fashioned synonym *rasput'e* do not occur in our corpus, but the word *povorot* ‘turn’ occurs 89 times and all contexts are metaphorical. They all belong to the same semantic category, which is ‘Choosing the way’.

- | | | |
|---|---|--|
| (9) Мы должны идти своим
путем, неуклонно делать
свою систематическую
работу, и, чем меньше
будем мы рассчитывать на
неожиданности, тем
больше вероятия, что нас
не застанут врасплох
никакие <u>"исторические
 повороты"</u> . | Meidän on kuljettava
tietämme, tehtävä
järkkymättä järjestelmällistä
työtämme, ja mitä
vähemmän rakennamme
laskelmiamme yllätysten
varaan, sitä uskottavampaa
on, että mitkään
<u>"historialliset käännteet"</u> eivät
meitä yllätä. | We must go our own
way, and we must
steadfastly carry on
our regular work, and
the less our reliance
on the unexpected,
the less the chance of
our being caught
unawares by any
<u>"historic turns"</u> . |
|---|---|--|

(*Where to begin?*, 1901)

Example (9) demonstrates typical contexts for this metaphor. Although the word is used metaphorically and is clearly connected with the JOURNEY metaphor, it remains in most contexts rather abstract, and there is no image of a road with a turn and a sign. In example (9), the phrase *istoričeskij povorot* ‘historic turn’ is used together with *idti svoim putem* ‘to go our own way’, but still it is not clear who or what will be turning, nor how the turn would happen.

The expressions with *povorot* occurring in the corpus include, for example, the following: *povorot nastroeniä* ‘turn in mood’, *povorot v politike* ‘turn in politics’, *ishodnyj punkt povorota* ‘starting point of the turn’, and *povorot sobytij* ‘turn of the events’. The metaphoricalness we see here is a kind of second-

order metaphoricalness: the word *povorot* adds the meaning of a journey to the main word that has nothing to do with a journey (politics, mood, events).

The Russian word *povorot* ‘turn’ has two Finnish equivalents *käännö* and *käännös*. Both are used in the translations. The word *käännös* is more typical for traffic while *käännö* more often means ‘change’. The equivalent *käännö* is dominant and this is evidently connected with the above mentioned low metaphoricalness of the Russian contexts. The word *käännös* is only used in the expressions *rezkij povorot* / *jyrkkä käännös* ‘sharp turn’. In a few contexts the non-metaphorical equivalent *muutos* ‘change’ is used.

Among the contexts with *put* ‘way’ there are expressions with the meaning of changing the direction, like *svernut’ s puti* ‘to take a turn from the road’, which are more materialized than the expressions with *povorot*.

4.4 *Pohod* - ‘expedition’

The word *pohod* combines in its meaning journey and war and has the following meanings: ‘expedition’, ‘tour’, ‘military operation’, and ‘military campaign’. Lenin uses the word exclusively in the second sense and combines two metaphors: WAR and JOURNEY.

There are 47 examples with this word in our data, and they all deal with political struggle. Sometimes the Bolsheviks are under attack, sometimes they are on a march themselves, and sometimes there is a clash between other forces. The military component is visible in all the examples; it is often difficult to filter out non-metaphorical examples that are dealing with real warfare.

- | | | | |
|------|--|--|---|
| (10) | И новые ратники <u>шли</u>
<u>в поход</u> с удивительно
первобытным
снаряжением и
подготовкой.
(<i>What is to be done?</i> , 1902) | Uudet soturit <u>lähtivät</u>
<u>sotaretelle</u>
hämmästyttävän
alkeellisin varustein ja
valmennuksin. | These new warriors
<u>marched to battle</u> with
astonishingly primitive
equipment and training. |
|------|--|--|---|

In example (10), Lenin is describing the activities of early Marxists as a poorly organized military campaign with an unhappy end; the whole paragraph is built on this metaphor. It is interesting that the English translation uses an equivalent *battle*, i.e. a single military clash, while the Finnish translation is closer to the original text and uses *sotaretki* ‘campaign or crusade’.

The use of this noun in Lenin's works is somewhat old-fashioned, as some collocations are not used in present-day Russian: *podnât' pobod* 'to raise an expedition', *otkryt' pobod* 'to open an expedition', and *dvinnut' pobod* 'to move an expedition'.

The main Finnish equivalent for *pobod* is the word *sotaretkei*, which has always the meaning of military campaign: *sota* 'war' + *retkei* 'trip' (cf. *tutkimusretkei* - 'research + trip' - expedition). The word *retkei* 'trip' usually means 'excursion' or 'picnic' and is not used as an equivalent for *pobod* in our data.

- | | | |
|---|--|--|
| (11) Угнетающие классы при
жизни великих
революционеров платили
им постоянными
преследованиями,
встречали их учение
самой дикой злобой,
самой бешеной
ненавистью, самым
беспабашным <u>походом</u>
<u>лжи и клеветы</u> . | Suurten
vallankumousmiesten
eläessä sortajaluokat ovat
maksaneet heille alituisilla
vainoamisilla, ottaneet
heidän oppinsa vastaan mitä
raivokkaimmalla kiukulla,
hurjimmalla vihallä,
irvokkaimmalla <u>valhe- ja</u>
<u>parjausryöpyllä</u> . | During the lifetime of
great revolutionaries,
the oppressing classes
constantly hounded
them, received their
theories with the most
savage malice, the most
furious hatred and the
most unscrupulous
<u>campaigns of lies and</u>
<u>slander</u> . |
|---|--|--|

(*State and Revolution*, 1918)

The Russian context *pobod lži i klevety* 'a crusade of lies and slander' that occurs in *State and Revolution* (11) is difficult to interpret as a military expedition, so the Finnish translator changes the metaphoric model from 'journey' to 'flood'. The Finnish words *ryöppy* and *tulva* mean a 'gush/rush of water' and 'flood'. Both nouns can be used figuratively: *kysymysryöppy* 'a flood of questions' and *kysymysten (kyyneelten) tulva* 'a flood of questions/tears'. In the Finnish translation, *ryöppy/tulva*, the translator probably has sought to find a metaphorical expression that is more familiar to the Finnish reader. It is also possible that the translator confused two Russian nouns: *pobod* 'expedition' and *potok* 'flood'.

In many cases, the translators use the words *hyökätä* 'to attack' or *hyökkäys* 'attack'; these words have a very general meaning of any kind of aggression, and the translation becomes less metaphorical than the original. This happens in example (12), and the word *campaign* that appears in the English translation has the original meaning of a military campaign, but nowadays it can be any kind of organized activity. As a result, the JOURNEY metaphor disappears from both translations.

- | | | |
|--|---|---|
| (12) Сегодня мы должны воспользоваться тем обострением политического положения, которое создало правительство походом на земство.

(<i>Where to begin</i> , 1901) | Tänään meidän on käytettävä hyväksemme sitä poliittisen tilanteen kärjistymistä, jonka hallitus on saanut aikaan <u>hyökkäyksellään zemstvon kimppuun</u> . | Today we must take advantage of the tense political situation arising out of the government's <u>campaign against the Zemstvo</u> ... |
|--|---|---|

5. Lenin's metaphors in modern usage

The survival of political metaphors depends on historical and social circumstances: some remain exclusively in the speeches of their author, while others start to circulate from one politician to another, crossing cultural and language barriers and remaining in active use for many decades. What is the fate of the journey metaphors from Lenin's works and their Finnish translations? Did they expand beyond Marxist discourse? Are they still used in modern language? To check this, we took some of the most frequent metaphors from our data as well as their most common Finnish equivalents and checked their use with the web corpora Araneum Russicum Maius and Araneum Finnicum Maius, both about 800 M running words (Benko, 2024). These are corpora of language for general purposes crawled from the Internet and consisting largely of mass media and social media texts. They represent well current language usage. The corpora are of the same size and are compiled along the same lines, which makes them comparable.

5.1 Vybrat'/vybirat'/izbrat' + put' vs. valita + tie 'choose the way'

The Russian expression *vybrat'/vybirat'/izbrat' + put'* is relatively frequent: 3,231 occurrences, 2.69 ipm. The Finnish equivalent *valita + tie* has a

comparable frequency: 2,044 occurrences, 1.7 ipm. A considerable number of examples is metaphorical in both corpora.

The Russian expression occurs in the contexts dealing with different issues: developing society, politics, business strategy, religion, or careers.

- (13) Как известно, Германия выбрала путь отказа от использования ядерной энергетики. [As is known, Germany has chosen the path of abandoning the use of nuclear energy.]

Most of the Finnish examples are connected with religion, politics, developing society, and careers.

- (14) Humanistinen ammattikorkeakoulu on valinnut positiivisuuden tien. [The Humanities University of Applied Sciences has chosen the path of positivity.]

5.2 *Probit'/probivat'/rasčistit'/rasčīsat' dorogu/put'* vs. *raivata tie* 'to clear the way'

The Russian expression *probit'/probivat'/rasčistit'/rasčīsat' dorogu/put'* occurs in the corpus 800 times, 0.6 ipm, while the Finnish equivalent *raivata tie* is more frequent: 2,300 occurrences, 1.9 ipm. Most of the examples are metaphorical in both languages, although contexts of construction works are also present.

Russian contexts are usually connected with careers, progress, or personal development.

- (15) Он пробивает дорогу бренду и делает фирму лидером. [He paves the way for the brand and makes the company a leader.]

Finnish contexts are very similar.

- (16) Koko ryhmä on raivannut tiensä suomalaisten sydämiin. [The entire group has made its way into the hearts of Finns.]

5.3 *Vernyj put'*, *vernaâ doroga* vs *oikea tie* 'correct way'

The expressions *vernij put'* and *vernaâ doroga* occur in the corpus 1,990 times, 1.66 ipm, while the corresponding Finnish *oikea tie* is much more frequent: it occurs 3,150 times, 2.63 ipm. In both languages, the expressions are used in most cases metaphorically.

The Russian expressions are fairly often used in marketing slogans, and probably these are built upon Lenin's slogan. Other contexts have a general meaning of doing something right.

- (17) Если Вы решили купить игрушки оптом в Москве, то Вы на верном пути. [If you decide to buy toys wholesale in Moscow, then you are on the right track.]
- (18) Позитив есть, мы идем верной дорогой. [There is positivity, we are on the right path.]

Some of the Finnish contexts relate to politics, but there are far more religious contexts, and this explains the difference in frequencies. (In Russian, the expressions *vernij put'* and *vernaâ doroga* are almost never used in religious contexts because there is a special expression for choosing the correct path to God – *istinnyj put'*. This expression occurs in the Russian corpus 1,200 times, 1 ipm.)

- (19) Demokratia on ainoa oikea tie. [Democracy is the only right way.]
- (20) Jumalallakin on omat merkkinsä, joita seuraamalla pysymme oikealla tiellä. [God also has His own signs, which we follow to stay on the right path.]

5.3 *Povorot istorii* vs *historian käänne* 'historical turn'

The expression *povorot istorii* occurred in the corpus 50 times, 0.04 ipm. The Finnish equivalent *historian käänne* is in the same frequency band: 85 occurrences, 0.05 ipm.

All contexts are metaphorical and are used in contexts dealing with radical changes in society.

- (21) ... карьера молодого специалиста на крутых поворотах истории часто складывается удачнее, чем в период стабильности ... [A young professional's career often turns out better during sharp turns in history than during periods of stability.]
- (22) Suomen historian käännteissä on usein vaikuttanut ns. suurmiehiä. [The turning points in Finnish history have often been influenced by so-called great men.]

5.4 *Pobod* vs *sotaretki* 'expedition'

None of Lenin's expressions with *pobod* were found in the corpus. The word is generally used in the meaning of military expeditions. The other meaning, 'collective trip in nature on foot or on ski', is a sovietism and has almost disappeared from the language. In a random sample of 200 examples with the word *pobod*, 38 metaphorical contexts were detected: shopping (*pobod po magazinam*, *pobod za produktami*), entertainment (*pobod v muzej*, *pobod v kino*), wellness and fitness (*pobod po procedurnym kabinetam*, *pobod v sportzal*), and public services (*pobod v sud*). No contexts of political confrontation like in Lenin's works were detected.

- (23) И все-таки, именно походы по магазинам обуви, одежды и аксессуаров оказывают такое чудесное воздействие, и искать им альтернативы – пустая трата времени. [And yet, it is precisely shopping for shoes, clothes and accessories that has such a wonderful effect, and looking for alternatives is a waste of time.]

The Finnish word *sotaretki* is expectedly used only in contexts connected with warfare. At least in the random sample of 200 examples from the corpus there were no metaphorical contexts, and all the examples were about military campaigns.

- (24) Muualla Euroopassa Afganistanin sotaretken epäonnistuminen ymmärretään ja monet harkitsevat jo vetäytymistä. Elsewhere in Europe, the failure of the Afghan campaign is understood and many are already considering withdrawal.]

6. Conclusions

Let us try to imagine what ‘Lenin’s way’ looks like. It is not a motorway, nor is it a railway. Motorways were almost non-existent at that time, and railroads are mentioned many times but never metaphorically. So, it is a paved way that one can travel on foot. It makes turns and goes through changing terrain: moors, woods, hills, and mountains. It is long and hard. It is difficult to travel alone; you need a group of people, armed and well-equipped, ready to help fellow travellers. There might also be obstacles of all kinds, making the journey even harder, and besides there are evil people blocking the way or trying to lead travellers astray. One must constantly remove obstacles from the way.

Potentially, there might be more than one way leading to the destination, but it is believed that there should be a main route. There are many roads leading to dead ends or wrong destinations, some of them look attractive, and they might seem to be easier and/or shorter. One needs to find the way, to take the right road. Even when one finds the right way to go, it is still easy to get lost, so one needs a guide. The problem is that there are also crooks trying to fool the travellers and lead them astray. There might also be companions that travel the same route only to a certain point, after which they might take another road. Sometimes the travellers must first build the way and only after that are they able to start the journey.

Finally, the ultimate destination is not visible and can only be imagined. How long will the journey last? How many travellers will reach it? Who knows? One just has to go...

This is how it looks in the original. What about the translations? Translating metaphorical contexts into another language may be easy or challenging. It is relatively easy if the metaphorical model of the original text is compatible with the target language. In this case, a direct translation works well. Otherwise, the translator has two options: a direct unnatural translation or a naturally looking free translation. In our data, we come across both cases.

The analysis of the Finnish translations shows various tendencies: (1) the same translations for different metaphors, (2) variability of translation equivalents in early translations and their unification in later translations, (3) demetaphorization of some metaphorical contexts, (4) and metaphorization of some non-metaphorical contexts. Russian vocabulary is larger than Finnish: Kiselev *et al.* (2015) report about 250,000 single words in Russian while the standard dictionary of the Finnish language,

Kielitoimiston sanakirja, contains about 100,000 words (Kielitoimiston sanakirja, n.d.) and the largest dictionary of Finnish, *Nykysuomen sanakirja*, contains around 200,000 words (Nykysuomen sanakirja, n.d.), many of which are composite words. As a result, there are often multiple Russian words for the same Finnish equivalent. This leads to different Russian metaphorical expressions having the same Finnish translation, e.g. *očistit' / očišat' dorogu / put'*, *rasčišat' / rasčistit' dorogu / put'*, *probivat' dorogu*, etc. → *raivata tie*. The translation thus simplifies the original text and makes it more straightforward.

At the same time, as we have mentioned in sections 4.1 and 4.2, the Finnish word *tie* only has the meanings ‘road’ and ‘route’ and does not have the meaning ‘method, means’. This makes the non-metaphorical expressions like *sosialističeskij put'*, *revolúcionnyj put'* sound quite metaphorical in the Finnish translations: *sosialistinen tie*, *vallankumouksellinen tie*.

Finally, the expressions with the word *pohod* are obviously problematic for Finnish, because the equivalents like *sotaretki* are too straightforward and do not have metaphorical potential. Therefore, some contexts are translated with more neutral words, like *hyökätä / hyökkäys* ‘attack’.

The corpus contains many of Lenin’s works with alternative translations, and this makes it possible to compare different translation solutions. In earlier translations there is usually more variability in the translation solutions, whereas in later translations, especially in collections of works, they are calibrated and standardized (Mikhailov et al., 2025: 294). In our data, in the first translations of *State and Revolution*, the expression *etap na puti* ‘a milestone on the way’ was translated as *majapaikka tiellä* ‘a stopover on the way’ (not exactly the same), which changed to the more straightforward and literal *etappi tiellä* in the later translations.

The metaphors in the translations cannot be exactly the same as in the original texts. Some changes are inevitable. Sometimes translation offers a more concrete metaphor (*put'* ‘way’ → *raide* ‘railway track’), in other cases the translation is more generalized (*probivat' dorogu* ‘crush a road (through a mountain)’ → *raivata tie* ‘clean the way (of smth)’). In any case, it is obvious that translators usually pay attention to metaphors and understand their importance. The cases when the metaphor was weakened are few, usually the metaphors are preserved. Quite often in later translations, the translators work on equivalents for metaphors, try to improve translations,

and make them more exact, more natural. The inadequate solutions of early translations are noticed and replaced by more adequate choices.

The statistics do not provide an exact picture, because the ParVLen.FI corpus is composed of whole texts. Another problem is that more important works are represented with multiple translations and thus receive more weight, and besides, the same Russian contexts are repeated for multiple translations. The corpus is still under construction, and many important texts are still to be included. However, we try to add new texts from different chronological periods, thus maintaining some balance. Regardless, the numbers only reflect the tendencies existing in our data; they do not report the final truth.

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Appendix. Word candidates for JOURNEY metaphor in Lenin’s Complete Works (LenCor corpus)

Word	Meaning	Freq. (LenCor)	ipm	Metaphors
put’	way	2578	454,6	Yes
doroga	road	947	167,0	Yes
povorot	turn	412	72,6	Yes
poezdka	trip	293	51,7	No
pohod	expedition	212	37,4	Yes
gora	mountain	172	30,3	Yes
karta	map	171	30,2	No
vagon	train car	169	29,8	No
boloto	swamp	151	26,7	Yes
poezd	train	140	24,7	Yes

koleso	wheel	70	12,3	Yes
tupik	deadlock	53	9,3	Yes
bilet	ticket	50	8,9	No
avtomobil'	car	48	8,5	Yes
poputčik	fellow traveller	36	6,3	Yes
bagaž	luggage	27	4,8	Yes
putešestvie	journey	25	4,4	No
čemodan	bag	22	3,9	No
maršrut	route	16	2,8	No
bezdorož'e	off-road	11	1,9	Yes
pereprava	river crossing	9	1,6	No
strannik	wanderer	7	1,2	No
kotomka	knapsack	4	0,7	No
povozka	carriage	4	0,7	Yes
stranstvovat'	to travel	4	0,7	Yes
stranstvovanie	travelling	3	0,5	Yes
plavanie	sea voyage	3	0,5	Yes
kompas	compass	3	0,5	Yes
proselok	back road	2	0,4	Yes
putešestvennik	traveller	2	0,4	Yes
pereval	mountain pass	1	0,2	Yes

uhab	pothole	0	0	
putnik	traveller	0	0	
posoh	walking stick	0	0	

Conceptual Metaphor Change in Popular Science Translation: Understanding Mathematics in English, Polish and Italian

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Abstract

Metaphor plays a crucial role in communicating with non-specialist audiences, presenting abstract concepts in a way that is easier to understand by means of familiar, everyday experiences (Semino, 2008). Although English has become a global language of science and scientists, translation into other languages remains essential for disseminating knowledge among non-expert audiences. This paper examines how conceptual metaphors change in the process of translation of popular science texts from the domain of mathematics. Drawing on a Cognitive Linguistics framework, the Conceptual Metaphor Theory and its later developments, and using the MIPVU approach (Steen et al., 2011) for identifying metaphors, this pilot study applies corpus linguistics methods to a parallel unidirectional translation corpus of popular science articles originally published in English in the “Scientific American” magazine, and their translations into Polish and Italian (from the official Polish and Italian editions, “Świat Nauki” and “Le Scienze”). Adopting a qualitative approach, the paper analyses examples of metaphorically used words in three languages and conceptualisations on the cognitive level. The findings show different degrees of metaphoricity across the source and two target languages. Translations reproduce the source text metaphors and/or introduce new metaphors based on different source domains. Insights from this type of comparative translation study can contribute to a better understanding of how scientific metaphors are processed and adapted.

Keywords: metaphor translation, popular science, scientific metaphor, mathematics

1. Introduction

*Soon the **hat led** to "**turtles**," "**spectres**," and other **wonders** that **yielded** more insights than we could have expected at the **outset*** (Kaplan, 2024)

What might seem like a very original piece of poetry or creative fiction is taken from a popular science article from the field of mathematics. It is well recognised that the use of metaphors in science is “both pervasive and essential” (Semino, 2008: 131). Dealing with complex and abstract phenomena that cannot be perceived directly, scientists use metaphors (Niebert and Gropengiesser, 2015) and analogies to create and communicate knowledge, both to fellow scholars and to non-expert audiences.

Popular science is sometimes referred to negatively, as a simplified, distorted version or a “dumbing down” of science, which is reflected for example, in terms like “vulgarisation” (Olohan, 2016). It is accused of offering simplified, sensationalised and inaccurate information to a less educated audience. However, Hyland (2010: 119) argues that it “represents phenomena in different ways to achieve different purposes”. The main message is adapted to the readers by avoiding specialist terminology, or if that is not possible, adding glosses and explanations, and linking new information to their existing knowledge, presenting complex scientific phenomena and processes in terms of everyday life experiences.

In that regard, scientific and popular science texts are no exception to our general cognitive abilities – to talk about, understand and make sense of the surrounding world, humans frequently use metaphors. In this study, following the Conceptual Metaphor Theory (CMT, Lakoff and Johnson, 1980), metaphor is understood as a cognitive device that helps people understand complex, abstract phenomena “in terms of” more familiar, concrete and tangible everyday experiences. For example, we talk about the target domain (TD) of ideas in terms of the source domain (SD) of food. The underlying cognitive metaphor is represented on the surface through linguistic expressions such as

What he said **left a bad taste in my mouth**.

All this paper has in it are **raw facts, half-baked ideas and warmed-over theories**.

There are too many facts in here for me to **digest** them all (Lakoff and Johnson, 1980: 46).

One of the main tenets of CMT posits that our understanding of the world is embodied, in other words that we understand the world through our bodies and how they interact with the outside reality – e.g. the erect position of our bodies gives rise to the orientation metaphors (e.g. UP IS GOOD and DOWN IS BAD), and our body can be treated as a container, which allows us to understand “in” and “out” relationships. Following this assumption in its extreme would lead to the conclusion that all metaphors are universal and should be common across languages and cultures.

There has been a lot of debate on the cultural variation of metaphors, which, according to Kövecses (2005), appears to be just as important and common as universality. Examples from many languages prove that “there is a large number of nonuniversal metaphors as well, and that they may be just as numerous as the universal ones, if not more so” (Kövecses, 2005: 3). The more recent development of the Conceptual Metaphor Theory admits that metaphors can be influenced by a variety of contextual factors including the bodily, but also discourse, conceptual-cognitive and situational contexts (Kövecses, 2020).

The problems of metaphors can be most clearly seen and defined when comparing two or more languages, for example in the process of translation. Putting too much emphasis on the universal elements of the conceptual metaphors “may play down on culture- or language-specific differences that may make a difference between a quality translation and an unacceptable one” (Rizzato, 2021: 2). It is therefore crucial to consider various factors that can influence translators’ choices when translating conceptual metaphors.

In this study, two major European languages from different families, namely Polish (Slavic) and Italian (Romance) translations are compared with the English source text. Of particular interest for this study is how metaphors change in the process of translation, and whether the conceptual content differs in these three linguistic versions. A growing body of literature on the translation of metaphors in popular science covers domains of technology (Papadoudi, 2010), neurobiology (Shuttleworth, 2017), astrophysics and astronomy (Merakchi, 2020) and cosmology (He, 2025). To date, mathematics has received relatively little attention. Most of the studies (except for Shuttleworth) are bilingual.

This study adopts a multilingual approach, comparing two target language versions, produced at approximately the same time (avoiding, therefore, the possibility of one of them being a retranslation). Following Munday (2008: 185), “[comparing] two translations of the same ST, even

though they are into different TLs, allows some triangulation of findings and helps to avoid jumping to conclusions based on a single isolated study”. To this end, the paper aims to answer the following research questions: Research Question 1: What can be inferred about the strategies translators use when translating scientific metaphors? Is the way in which they are translated influenced by the genre of popular science?

Research Question 2: How do metaphors change (on the linguistic and conceptual level) in the process of translation?

2. Theoretical Frameworks for Metaphor Translation

Metaphors have been considered a challenge in translation, “perhaps the most significant translation problem” (Newmark, 1988: 9). Various aspects from the very (in)translatability of a metaphor to both prescriptive (Newmark, 1988), and descriptive (van den Broeck, 1981; Toury, 1995) linguistically oriented approaches were proposed, dealing with translating a non-literal, metaphoric expression, understood as an embellishment, a special feature of the text. After the so-called cognitive turn, a cognitive approach to metaphor translation was proposed and further developed by a number of scholars (e.g. Mandelbit, 1995; Al-Harrasi, 2001; Schäffner, 2004; Schmidt, 2015; Shuttleworth, 2017). These approaches take into consideration both the linguistic and conceptual levels. In terms of pinpointing translation procedures, Schmidt (2015) developed Toury’s (1995) six-part model, adapting it to the CMT view of metaphor, and proposed the following possibilities:

1. CM → CM

- a. $m \rightarrow m$ a metaphorical expression is translated by a metaphorical expression of the same conceptual metaphor with the same mapping and the same meaning
- b. $m \rightarrow m'$ a metaphorical expression is translated by a metaphorical expression of the same conceptual metaphor with a different mapping and a similar meaning

2. CM → CM¹

- $m \rightarrow m_1$ a metaphorical expression is translated by a metaphorical expression of a different conceptual metaphor with a different mapping and a similar meaning

3. $m \rightarrow non-m$

a metaphorical expression is translated by a non-metaphorical expression with a similar meaning (also known as a paraphrase)

4. $m \rightarrow \emptyset$

a metaphorical expression is translated by a zero-element (also known as deletion, omission or zero-translation)

5. $non-m \rightarrow m$

a non-metaphorical expression is translated by a metaphorical expression with a similar meaning

6. $\emptyset \rightarrow m$

a zero-element is translated by a metaphorical expression (Schmidt, 2015: 256-257)

A similar approach, based on Toury's typology, can be seen in Nacey and Skogmo (2021), who also acknowledge the possibility of metaphors appearing in the TT, even when they were not present in the original. The spontaneous appearance of new metaphors in translation, as in (6) above, is in some models explained by means of compensation, e.g. Włosowicz (2023) in her study of translations of Lakoff and Johnson's "Metaphors We Live by" includes "addition" as a translation procedure that often occurs in proximity of non-metaphorical expressions (conversion to sense) or omissions.

Drawing on these various models of metaphor translation, it is possible to see the difficulties arising from the ambiguous labelling of various strategies/procedures (e.g. non-metaphorical, literal translation and conversion to sense). It is also important to consider the difference between cognitive (CM) and linguistic metaphors (LM) (or metaphorical expressions) and include both levels in the analysis, since "translators encounter the linguistic realisations of conceptual metaphors in the texts they are dealing with, and not the mappings as such" (Schäffner, 2016: 251).

Additionally, metaphor translation studies on literary texts draw attention to the importance of the global context of the text, the communicative and rhetorical function of metaphor and the coherence created as a result of using metaphors. For example, Dorst (2018) shows that basing metaphor translation strategies solely on local decision patterns may disrupt the text's stylistic coherence. In her analysis of the English original and the Dutch translation of Bromden's "One Flew over the Cuckoo's Nest", she notices how some metaphors are "sacrificed" for the sake of fluency and acceptability in the target language. For example, ICE metaphors, such as *frozen* are translated as *verstenen* ['turn to stone'] to express the meaning of 'to stop moving' (Dorst, 2018: 12). Although this translation

makes sense both from linguistic and cognitive point of view (realising an overarching SOLIDIFICATION metaphor), changing source domains entails a different vision of the world and the loss of the Author's idiosyncratic style.

Moreover, all the abovementioned models propose theoretically possible solutions or examples found in texts, without taking into account conscious translators' choices (e.g. related to the text coherence, stylistic conventions and to the perceived knowledge of the target audience, crucial in case of popular science texts), and translators' behaviour is often determined by the context in which they operate (Schäffner, 2016). Translation is a complex process of communication, whose first step is understanding the source text. Translators assume a double role in this process: first as a receiver (or first reader) and then as a sender (Hejwowski, 2004: 55). While it is not possible to directly observe translators' thinking processes, translation strategies based on the linguistic evidence can be indicators of decisions that produced them (Chesterman, 2020: 32).

In case of popular science texts, where there is a knowledge asymmetry (Engberg, 2023) between the writer and the audience, the understanding process is fostered by a variety of means, including the use of metaphors, which serve as tools for both knowledge organization and knowledge communication. Metaphor translation in popular science texts presents unique challenges. Translators must decide whether metaphorical expressions can be transferred directly, adapted to target-language conceptual frameworks, or replaced with alternative metaphors or non-metaphorical paraphrases. Scientific accuracy must be balanced with the accessibility of knowledge and readability of the text, which apart from being informative, should also be enjoyable to read. The active role of the translator, as well as the textual and the cognitive dimension, needs to be considered in producing a new text.

3. Corpus and Methods

This qualitative pilot study is based on a small corpus consisting of three popular science articles from the field of mathematics, originally written in American English and their translations into Polish and Italian, taken from the official Polish and Italian editions of the "Scientific American" magazine – "Świat Nauki" and "Le Scienze". Both the original articles and the translations were published in 2024. The overall details of the corpus are given in Table 1, and a full list of texts can be found in the Appendix.

	English subcorpus	Italian subcorpus	Polish subcorpus
Publication source	<i>Scientific American</i>	<i>Le Scienze</i>	<i>Świat Nauki</i>
Publication time span	Jan – Apr 2024	Mar – Jun 2024	Feb – Jul 2024
Language	English (US English)	Italian	Polish
Status	Original	Translation	Translation
Authorship	Experts in the scientific field	Translators – experts in the scientific field	Translators – experts in the scientific field
Subject field	Mathematics	Mathematics	Mathematics
Genre	Article in a popular science magazine	Article in a popular science magazine	Article in a popular science magazine
Size in number of words	8,713	9,424	6,815
Size in number of texts	3	3	3
Corpus annotation	Manually annotated for linguistic metaphors and metaphor flags.	Not annotated	Not annotated

Table 1: Summary of the design features of the corpus

From a methodological point of view, the study started with a word list analysis in the three languages under examination to reveal potentially metaphorically used words. First 150 most frequent lemmas in each language were analysed (see Table 2), and words which are not typically associated with the common (non-expert) understanding of mathematics were identified.

ENGLISH	ITALIAN	POLISH
12. tile	21. cappello	14. kapelus
14. hat	24. tassellazione	19. płytk
17. tiling	27. tassello	29. parkiet
42. way	55. piano	55. krata
56. secret	59. segreto	65. klucz
67. solve	61. reticolo	104. tajny
69. proof	92. chiave	111. kafelkowanie
87. lattice	94. ammettere	113. siatka

113. break	110. riflesso ¹⁶	132. składnik
139. ingredient	119. arrivare	137. ciasto
150. admit	150. tartaruga	138. zółw

Table 2: Potentially metaphorically used words based on a word list analysis of the first 150 most frequent lemmas in English, Italian and Polish

Although the three languages share some words (e.g. *bat/cappello/kapelusz; tile/płytką, klucz/chiave*), taking into consideration two target languages allows us to identify additional potential Metaphorically Related Words, e.g. *ciasto* [cake or dough] in Polish and *riflesso* [reflection] in Italian.

Subsequently, a close reading of the source texts revealed chains and clusters of linguistic metaphors. The corpus was manually tagged for Metaphor-related words (MRWs), including indirect and direct metaphors, and Metaphor flags (or signals), following the MIPVU procedure (Steen et al., 2011).

Following Steen and colleagues, a metaphor-related word (MRW) is any word whose contextual meaning in the text contrasts with its basic meaning, found e.g. in dictionaries. Direct metaphor is a word which maintains its basic meaning, but a cross-domain mapping is established using signalling, e.g. *like on a **clock***. Finally, a Metaphor flag is a word or expression that functions as a signal of cross-domain mapping, e.g. *like, as if, imagine*, or a punctuation mark such as inverted commas.

Both *direct* or *signalled* (i.e. containing words *like, similar to*, etc.), sometimes called similes and *indirect* metaphors are analysed in the following section of the paper. Since the focus of this study is on metaphor change in translation and culturally specific translation difficulties, it focuses only on lexical words, and functional words like prepositions (e.g. *in* which could suggest a container metaphor) were excluded from the analysis.

Using the parallel concordance function of *SketchEngine* (Kilgarriff et al., 2014), the linguistic metaphors identified (and tagged) in the source text (ST) were retrieved using a Corpus Query Language (CQL) search <MRW/> and then put side by side with the translations, as shown in Figure 1.

¹⁶ Keywords only found in one of the languages but not in the other two are indicated in **bold**.

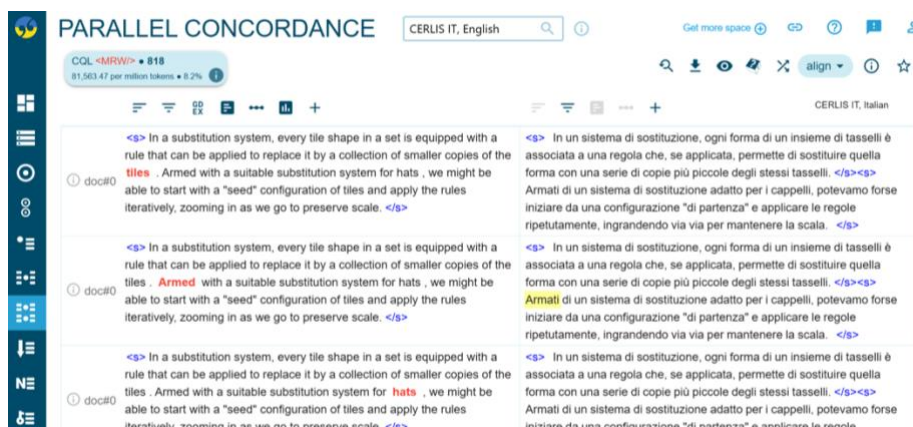


Figure 1: Example of parallel concordances in ENG - IT pair

Subsequently, linguistic metaphors were examined in three linguistic versions, and the underlying source domains were identified. The following part of the paper presents examples of translation procedures found in the corpus, with a particular focus on metaphor change in the process of translation.

4. Discussion

Due to space constraints of this paper, only a few of the most prominent examples of metaphor change in translation are presented. Both *direct* and *indirect* metaphors are analysed. A few cases of the most creative translations are also examined and discussed, pointing out that theoretical models for metaphor translation do not account for all procedures found in real-life, authentic translation products.

4.1 Translating culture-specific metaphors

Popular science texts often employ metaphors relating to commonly used objects. Physical, tangible objects such as *paper*, *tabletop*, *playing cards*, *key*, *machines*, *clock*, and *chandeliers* did not pose major difficulties to the translators and were all rendered with equivalent expressions in both translations (same CM, same mapping). However, a few items could be considered culture specific.

- (1) One of the simplest **looks like a pegboard** –dots arranged in a square grid.

Uno dei più semplici **somiglia a un pannello forato**: punti disposti in una griglia quadrata.

Jedna z najprostszych **przypomina tablicę perforowaną** – punkty umieszczone w **węzłach siatki** kwadratowej.

For example, a *pegboard* seems to be much more common in English than in the target languages. Both Italian and Polish translators provide a literal translation (*pannello forato/tablica perforowana* [perforated panel/board]). In Polish, a new metaphor *węzły siatki* [knots of a net] is introduced, perhaps in an attempt to compensate and help readers visualise the main cognitive content (i.e. the spatial distribution of the points). This is essential for the metaphor to be effective, in case the readers were not familiar with a prototypical pegboard.

Another cultural difference is exemplified by the role that sport – and more specifically American football – plays in American culture. Differences in salience of the source domains are one of the two possible reasons for cross-linguistic differences in metaphors discussed by Deignan (2003). While those differences may exist, translation as “an inherently pragmatic activity” (Rizzato, 2021: 7) aims at finding solutions. A *playbook* is a specific kind of manual containing descriptions and diagrams of the football plays that a team has practiced. It does not, however, exist in the common knowledge of Italians or Poles, as the following example shows:

- (2) In the aperiodicity **playbook**, the standard **move** at this point is to show that any tiling bears the imprint of the substitution rules.

Nel **manuale** dell'aperiodicità, a questo punto la cosa da fare normalmente è dimostrare che in qualsiasi tassellazione si trova traccia delle regole di sostituzione.

Standardowym, **podręcznikowym posunięciem** jest w tej sytuacji wykazanie, że każdy układ podlega regułom podstawiania.

Interestingly, both Italian and Polish translators independently find a similar solution: *manuale* and *podręcznik* both refer to a textbook, which, while preserving some part of the original meaning of a book, is much more

familiar than the American football image. Since the sports domain is not present in the translation, *move* is no longer directly coherent with the image. In Italian, it is translated as *la cosa da fare* [the thing to do]. In Polish, *move* is reintroduced with reference to a different sport – *posunięcie* typically refers to a move (horizontal, diagonal, etc.) in a game of chess.

Yet another example of culture-specific linguistic metaphor is *bake in*, used to express the meaning of ‘including a feature’, English ST uses an expression belonging to the SD of FOOD AND COOKING. It is widely used in programming language in the English-speaking context.

- (3) There is no way to **bake** this restriction **into** the outline of the tile without introducing a trick, such as extruding the hexagon into three dimensions or breaking it into disconnected pieces.

Non c'è modo di **integrare** questa restrizione nella forma stessa del tassello senza usare un artificio di qualche genere, per esempio estrudendo l'esagono nella terza dimensione oppure rompendolo in parti sconnesse tra loro.

Nie ma sposobu na **wplecenie** tego warunku w kształt płytki bez uczynienia sześciokąta trójwymiarowym lub rozdzielonym na odrębne fragmenty.

However, in Italian or Polish, a similar translation (*?wpiec*) would sound very unnatural. Two solutions are offered by the translators: in Italian *integrare* [integrate] – to make something complete by adding necessary elements, is used, conceptualising the shape in terms of an object or a machine that needs a specific part for a correct functioning. In Polish, a different metaphor is introduced, *wpleść* [weave in or braid in], which can refer to weaving a fabric or making braids. It also preserves an important aspect of the original metaphor, i.e. the potential difficulty of removing a part once it has been put in (as it is impossible to separate or remove ingredients once the cake is baked). The source domain of baking is not seen in any of the translations, although potentially available in all three cultures, due to the different effect such an unconventional metaphor would produce.

4.2 Metaphor repetition, clustering and extension: coherence in translation

A shortcoming of analysing metaphors and their translations at a word level is that it fails to capture that texts can be structured by metaphors, which

extend into larger clusters, sometimes stretching over a whole paragraph, or repeat throughout the article. In the following “brownie recipe” example, taken from an article entitled “Quantum-Proof Secrets”, cryptography is understood in terms of mixing ingredients and delivering a baked cake. Unlike the specific linguistic realisations discussed in the previous section (*bake in*), the process of following a recipe, mixing ingredients and baking a cake is common to all three cultures.

- (4) [...] let's imagine that two friends, Alice and Bob, own a bakery with a top-secret brownie recipe. It's so secret that even Alice and Bob don't know the full recipe. They each add a special ingredient known only to the person who adds it. [...] Sometimes Alice mixes up basic ingredients with her secret one and sends the batter to Bob, who adds his secret ingredient and bakes it. Other times Bob first combines the basic ingredients with his secret one before shipping it to Alice, who mixes in her secret ingredient and bakes the brownies. Alice and Bob always end up with the same brownies—but they never share the full, exact ingredients with anyone, including each other. Even their conniving delivery driver, Eve, can't figure out the recipe. (In cryptography, the two people exchanging secrets are traditionally named Alice and Bob, and a potential spy is often named Eve.) Eve can't deduce the secret ingredients, because whenever she transports them, they're mixed in with all the basic ingredients—it is impossible to separate them.

[...], immaginiamo che due amici, Alice e Bob, abbiano una panetteria che ha una ricetta segretissima per i brownie. È così segreta che nemmeno Alice e Bob conoscono la ricetta completa: ognuno dei due aggiunge un ingrediente speciale noto solo alla persona che ne fa uso. [...] A volte Alice mescola gli ingredienti di partenza con il suo ingrediente segreto e manda l'impasto a Bob, che aggiunge il proprio e cuoce il tutto. Altre volte è Bob a unire gli ingredienti di base a quello che conosce soltanto lui, per poi spedirli ad Alice, che unisce il suo ingrediente segreto e prepara i brownie. Alla fine Alice e Bob ottengono gli stessi brownie, ma non comunicano mai tutti gli ingredienti esatti a nessuno, compreso l'altro dei due. Neppure la loro subdola fattorina, Eve, può scoprire la ricetta. (In crittografia, le due persone che si scambiano segreti sono tradizionalmente chiamate Alice e Bob, e una potenziale spia si chiama spesso Eve.) Eve non riesce a dedurre gli ingredienti segreti perché quando li trasporta sono mescolati con tutti quelli di base: è impossibile separarli.

[...] wyobraźmy sobie, że dwie osoby, Alicja i Bob, prowadzą piekarnię ze ściśle tajnym przepisem na brownie (amerykańskie ciasto czekoladowe) – tak tajnym, że nawet Alicja i Bob nie znają pełnego przepisu. Każde z nich dodaje specjalny składnik znany tylko temu, kto go dodaje. [...] Czasami Alicja zaczyna mieszanie podstawowych składników ze swoim tajnym i pozostawia ciasto Bobowi, który dodaje swój sekretny składnik i piecze. Innym razem najpierw Bob łączy podstawowe składniki ze swoim sekretnym, a potem Alicja dodaje swój tajny składnik i kończy wypiek. Efektem jest zawsze takie samo ciasto, którego pełnego składu Alicja i Bob nie znają, a o tym, co sami wiedzą, nikogo nie informują, nawet

siebie nawzajem. Nawet przebiegła Ewa, zajmująca się dostawą ciast do sklepów, nie może odkryć sekretnych składników, bo w cieście są one wymieszane z innymi i nie sposób ich rozdzielić (w opisach kryptografii osoby przekazujące sobie tajemnice tradycyjnie są zwane Alicją i Bobem, a potencjalnym szpiegiem jest często Ewa)

This bakery scenario structures the whole article. As explained by a short parenthesis, names Alice, Bob and Eve are commonly used in cryptography. They come from the first letters of the alphabet (Person A – Alice, communicating with person B – Bob etc)¹⁷. The name Eve is also meaningful as it could be short for *eavesdropper*. In this popular science article, they are put in a new context of a more familiar scenario of baking a cake with a secret recipe and protecting it from a nosy delivery person. The short story then becomes an analogy to cryptographic message sending. The name *Eve* and *unmixing* reappear throughout the text, this time as indirect metaphors, linking the cryptography back to the baking scenario.

Similarly, the article “The Missing Piece: The quest for the einstein tile-a shape never seen before in Mathematics”, starting from its very title, is structured by one main metaphor, that of a quest, a long journey in search for something. Research is understood in terms of a journey, an exploration in search of a physical object – “einstein”, which, apart from being a pun on the surname of the famous Albert, means “one rock” in German. Table 3 below presents a few examples from the corpus that illustrate the CM RESEARCH IS A LONG JOURNEY/EXPLORATION. Metaphorically used words in each language are marked in bold.

ENGLISH ST	ITALIAN TT	POLISH TT
As we explored the new landscape of ideas revealed by this shape	Esplorando il nuovo panorama di idee	Analizując nowe pomysły związane z tym kształtem
Soon the hat led to "turtles," "spectres," and other wonders that yielded more insights than we could have expected at the outset .	Nel giro di poco tempo il cappello ci ha portati alle "tartarughe", agli "spettri" e ad altre meraviglie che ci hanno offerto molte più idee e intuizioni di quanto potessimo aspettarci in partenza .	Niebawem kapelus doprowadził nas do "zółwi", "widm" i innych cudów, które dostarczyły więcej odkryć , niż mogliśmy się na początku spodziewać.

¹⁷ They were first used by Rivest et al. (1978) in “A method for obtaining digital signatures and public-key cryptosystems”.

Penrose's work left us one step short of an obvious finish line	Il lavoro di Penrose si fermava appena un passo prima di un traguardo evidente	Stąd był tylko krok do mety
In the hands of a skilled explorer like Smith, a shape will disclose its tiling secrets in short order	Nelle mani di un esploratore esperto come Smith, una forma rivela i suoi segreti in poco tempo.	Utalentowanemu odkrywcy , takiemu jak Smith, kształt szybko ujawnia swoje parkietażowe sekrety.
I had some inkling of how that step might play out , but I felt as I imagine Smith had the previous November: close to the limits of my mathematical expertise.	Avevo un'idea di come poteva andare a finire, ma mi sentivo come immagino si fosse sentito Smith il novembre precedente: al limite delle mie competenze matematiche.	Miałem pewne przeczucie, jak wykonać ten krok , ale czułem się jak zapewne Smith w listopadzie minionego roku, czyli na granicy mojej wiedzy matematycznej.

Table 3: Examples of metaphor-related words realising CM RESEARCH IS A JOURNEY/EXPLORATION.

As the examples in the table show, a series of ontological correspondences can be established:

- Scientists are explorers
- Research is a quest, a long journey
- Beginning of the research is the outset of the journey
- Various stages of the research are steps
- The shape (“hat”) is the guide
- Obtaining the result is the final destination

Since the experience of a journey and physical movement from point A to point B, walking, taking *steps* is universal, all linguistic versions share the same conceptual metaphor. However, the realisations on the linguistic level do not always reproduce the same LMs. Exploring the landscape is reproduced with the same metaphor in Italian translation. The shape is conceptualised in terms of a guide, a person who leads the way and shows the explorers (researchers) a new landscape (new ideas). In Polish this image is converted to sense: *Analizując nowe pomysły związane z tym kształtem* [lit. analysing new ideas linked to this shape]. A different metaphor can be observed in the second part, *związany* literally means ‘tied’, therefore the ideas and the shape are conceptualised as two objects linked or tied together, perhaps as an attempt to compensate for the loss of the original metaphor.

The metaphor SHAPE IS A GUIDE can also be seen in the use of the verbs *lead* in English and *doprowadzić* in Polish, Italian *ci ha portati alle* [took us to] could also be considered a more direct image of taking inanimate objects and transporting them from point A to point B. The journey is also conceptualised as a route from point A to B, from the *outset*, *partenza* in English and Italian (in Polish conversion to sense *na początku* [at the beginning]) to the *finish line*/*traguardo*/*meta* in all three languages. Arguably, the *finish line* also shifts the focus to a sports event/race. The Italian seems to follow the original text more closely, while the Polish one introduces different metaphors, however the main CM of journey is maintained (in line with Schäffner, 2004 findings on political texts in German, English and French).

4.3 Translating mixed metaphors

In the article “The Missing Piece: The quest for the einstein tile-a shape never seen before in mathematics”, research is also structured in terms of a military conflict or battle, using words such as *reinforcements*, *armed*, *strategy*, *withstand*, and *force*. There are examples of recreating the same image in the target texts, as shown in (5), e.g. *strategy*/*strategia*/*strategia*, *force*/*costringere*/*wymusić*, *call in reinforcements*/*chiamare rinforzi*/*wezwać posiłki*.

(5) It was time to **call in reinforcements**

Era il momento di **chiamare rinforzi**

Nadeszła pora wezwać posiłki.

An additional metaphor can be seen in the Polish translation *nadeszła pora* [time came]. It is most likely caused by the translator’s efforts to find an expression that sounds most natural. It could also be a result of a subconscious choice, as much of the translation process is automatic and subconscious (Alves and Albir, 2012). Introducing an additional metaphor coming from a different source domain could be considered a case of a mixed metaphor. Metaphor coherence and consistency have been taken up already in “Metaphors we live by” (Lakoff and Johnson, 1980: 91–96), where the Authors discuss cases of “permissible” and “impermissible” metaphor mixing. Some metaphors “fit together” because they overlap and

share metaphorical entailments. For Kimmel (2010: 98), mixed metaphors need to satisfy two conditions in order to be called such:

1. they occur in textual adjacency, i.e. within a single metaphor cluster, and
2. they do not (for the most part) share any imagistic ontology or any direct inferential entailments between them (Kimmel, 2010: 98).

Generally, they do not cause problems unless they occur within one clause. In that case, there are no grammatical boundaries to set the ontological planes apart, and the cognitive pressure to process them together is stronger.

One example of the RESEARCH IS A BATTLE conceptual metaphor is particularly interesting as it combines more than one source domain (see example 6). *Armed* is rendered with the same image *armati* in Italian, but in Polish, even though a theoretical possibility exists (*uzbrojeni*), and is frequently used (e.g. in idiomatic expressions such as *uzbroić się w cierpliwość* [lit. arm oneself with patience]), translator opted for *wyposażeni* [equipped], causing the mathematical substitution rules to be conceptualised as tools or pieces of equipment rather than weapons.

- (6) **Armed** with a suitable substitution system for hats, we might be able to start with a "**seed**" configuration of tiles and apply the rules iteratively, zooming in as we go to preserve scale.

Armati di un sistema di sostituzione adatto per i capelli, potevamo forse iniziare da una configurazione "**di partenza**" e applicare le regole ripetutamente, ingrandendo via via per mantenere la scala.

Wyposażeni w odpowiedni system podstawiania kapeluszy moglibyśmy zacząć od "**załączkowej**" konfiguracji płytek i zastosować iterację, powiększając obraz, aby zachować skalę.

This could be a conscious stylistic choice, considering that the metaphor that follows (*seed*, *załączkowa*), referring to parts of a plant, could clash and be incoherent with the image of war/military conflict. In the Italian translation, a different strategy is used: the first metaphor is maintained, but the second one is changed to a JOURNEY one: *di partenza* [outset]. Interestingly, none of the translations retains the original mixed metaphor, which could prove that the claim about the commonness of mixed metaphors might be limited to English-speaking contexts, while in other languages mixed metaphors may cause problems, such as grammatical or

stylistic errors in translation, in line with He et al. (2022) findings on English to Chinese translations.

4.4 Changes in terminological metaphors and the importance of genre

The article “The Missing Piece: The quest for the einstein tile—a shape never seen before in Mathematics” contains many terminological metaphors referring to specific shapes discussed in the tiling theory, such as *bats* and *turtles*. Shapes are named based on their perceived resemblance to real-life objects. They are translated reproducing the same image in the target languages (*bat* – *kapelusze*, *cappello*, *turtle* – *żółw*, *tartaruga*, *comet* – *kometa*, *cometa*, *kite* – *latawiec*, *aquilone*, *dart* – *strzałka*, *freccia*).

Basic vocabulary related to the mathematical branch of tessellation or tiling theory comes from physical tiles (such as ceramic tiles used for mosaics) used to cover a surface without gaps or overlaps. Interestingly, in the original article, only two terms are used: *tile* (both as a noun and a verb) and *tilings*. Italian translation uses variants of *tassello*, *tassellazione* and the verb *tassellare*. In the Polish translation *tile* and *tilings* are rendered in a multiplicity of ways, such as: *parkietaż* (which originally comes from *parkiet* [parquet] – floor covered in wooden tiles), *plytka* (a more generic word that could be equivalent to a *tile*), *kafielek* (a ceramic tile used on floors or bathroom walls), a related noun which describes the action of tiling *kafelkować*, and a neologism *?pokafelkowanie* (possibly an attempt to create a perfective aspect of the verb *kafelkować*), or more generic *pokryć płaszczyznę* [cover the surface]. Arguably, the Polish version offers a wider variety of mental images that can be employed to understand the concept.

Interestingly, other terms created on the basis of *tile*, such as *monotile*, *metatile* or *nontiler* are dealt with differently in the process of translation. In Italian, the original English term *monotile* is used (but *metatile* becomes *meta-tassello*). This could be considered a new translation procedure, “borrowing” or retaining the original metaphor. This is an even more acute proof of English “spreading its metaphors”, as hypothesised already in Monti (2009: 216), who noticed that the influence of hegemonic languages on other cultures can be seen in “exporting” their metaphors through literal translation. Here, not only are the metaphors “exported”, but they are also kept in their original form. Since it is primarily the reader who attributes

meaning to the metaphoric expression (Hull and Lampert, 2025), these English metaphors may not be recognised as such and may consequently not be accessible to the non-specialist audience. In Polish both are translated word-by-word, and become *monophytka* and *metaphytka*, respectively.

Short and elegant *nontiler* and *tilability* proved to be more of a challenge for translators and were rendered through more descriptive expressions/paraphrases.

- (7) *nontiler*
 forme non tassellanti [non-tiling shapes]
 nieukładny kształt [unfitting shape]

- (8) *tilability*
 che la forma ammetta la tassellazione [that a shape admits a tiling]
 możliwy parkietaż [a possible tiling]

Some of the terminological metaphors are then further conceptualised as human beings, through the use of typically human vocabulary referring to free will and possibility to decide about one's actions, such as *behavior*, *reveal*, *secrets*, social interactions (*come to an agreement*, *accordarsi*, *współdziałać*), human personality traits (e.g. *deceptive*) and relationships (*family*, *related*).

- (9) Hat's **behavior**
 il **comportamento** del cappello
 funkcje kapelusza

- (10) a shape will **disclose** its tiling **secrets**
 una forma **rivela** i suoi **segreti**
 kształt szybko **ujawnia** swoje parkietażowe **sekrety**

In some cases, the translations are a bit vaguer than the original. Let us consider verbs *to conspire* and *come to an agreement*. In Italian, the collaborative and secretive aspect of the first one is lost, substituted by *riescano a* [succeed in], while the second one is translated as *accordarsi tra loro* [agree among them], which maintains the social interaction aspect of human communication.

- (11) The catch is that for copies of this hexagon to **conspire** to force all tilings to be aperiodic, nonadjacent tiles must **come to an agreement** about their relative orientations.

Il problema è che, affinché le copie di questo esagono riescano a costringere tutte le tassellazioni a essere aperiodiche, i tasselli non adiacenti devono **accordarsi tra loro** sui relativi orientamenti.

Haczyk polega na tym, że aby kopie tego sześciokąta **współdziałały** w celu wymuszenia nieokresowego charakteru całego układu, niesąsiadujące ze sobą płytki powinny **współdziałać** w zakresie ich względnej orientacji.

In Polish, both are rendered as *współdziałać* [collaborate], which maintains the conceptualisation of shapes as people working together but, similarly to the Italian translation, takes away the aspect of communicating verbally and having secret agreements (usually do to something illegal). This is also potentially due to the negative connotations the verb *konspirować* has in the Polish culture.

Another fruitful terminological metaphor, coming from the article “Quantum-proof secrets”, is *lattice*. Its Italian and Polish equivalents, *reticolo* and *krata*, have a different status. Although *reticolo* comes from *rete* [net], its basic meaning is limited to a graphic representation of a net, a grid¹⁸ used for example in reproducing images or maps in scale. In Polish, the basic meaning of *krata*¹⁹ is intersecting metal rods, used as protection (e.g. in windows). It can also refer to bars (in the context of a prison). It is, therefore, a much more concrete and vivid image. Both are adopted as part of terminology, in Italian this branch of algebra is commonly referred to as *matematica dei reticoli*, and in Polish as *matematyka krat*.

In the majority of cases, *lattice* is translated using these commonly used equivalents (in Italian 18 out of 18 occurrences of *lattice* are translated as *reticolo*), in Polish 17 out of 18, with one exception where *lattice* becomes *siatka* [net].

- (12) But that would be possible only because the **lattice** on the paper is two-dimensional.

[...] ma questo sarebbe possibile solo perché il **reticolo** sul foglio è bidimensionale.

Jest to jednak możliwe tylko dlatego, że **siatka** na kartce jest dwuwymiarowa.

¹⁸ disegno in forma di rete o una struttura che abbia aspetto di rete Dizionario Treccani <https://www.treccani.it/vocabolario/reticolo/>

¹⁹ krzyżujące się pręty, najczęściej metalowe, służące jako ochrona, ozdoba itp Słownik Języka Polskiego PWN <https://sjp.pwn.pl/sjp/krata:2474941.html>

Siatka is a diminutive of *sieć* ([net] e.g. fishing net, volleyball net), but in a mathematical context is used in the same way as *reticolo* and *grid* (i.e. a regular distribution of lines used for example in drawing of maps in scale). In the following example, discussed at the beginning of this article, an interesting phenomenon can be observed.

- (13) **Krata** jest układem rozmieszczonych regularnie punktów. [...] – punkty umieszczone w **węzłach siatki** kwadratowej.

It combines two terminological metaphors, *krata* and *siatka*, but the second metaphor is “re-opened” (Knudsen, 2003) by the preceding *węzły* [knots, nodes]. “Re-opening” a “closed” metaphor means explicitly stating and explaining the metaphor that is commonly used as ordinary scientific concepts between experts (Knudsen, 2003: 1254–1255). Here, introducing the physical knots (*węzły*) links *siatka* [net] back to its basic meaning of a physical net, made by tying string into knots. This allows the non-expert reader to visualise and grasp the abstract concept.

4.5 Addition of new metaphors in the T'T

As already mentioned in the previous section, shapes are conceptualised as people through words referring to human relationships such as *family* and *related*. Interestingly, in “The Missing Piece: The quest for the einstein tile-a shape never seen before in mathematics”, “the same” is translated into Polish as *bliźniacze* [twin-like], which is a case of a spontaneous use of a metaphor that is not present in the ST.

- (14) Myers showed that nearly all shapes of the form Tile (a,b) are aperiodic monotiles with the same tilings

Myers ha dimostrato che quasi tutte le forme del Tassello(a,b) sono monotile aperiodici con lo stesso tipo di tassellazione.

Myers wykazał, że prawie wszystkie Plytki(a,b) są aperiodyczne i dają **bliźniacze** parkietaże.

It could be considered another example of the same underlying Conceptual Metaphor SHAPES ARE MEMBERS OF A FAMILY, where the resemblance between the tilings is understood in terms of the almost identical appearance

of twins. It could be hypothesised that new linguistic metaphors appear in the proximity of others, belonging to the same CM, because the translators are primed by the discourse context. Kövecses (2020), in his extended version of the CMT, argues that the metaphor choice can be influenced by contextual factors—social, cultural, and situational—people are exposed to. In this case, textual factors, such as the presence of various metaphors relating to FAMILY in the neighbouring parts of the text, may have influenced or “primed” the translator to use the same source domain in his translation. The role of contextual priming in the translation of metaphors is also discussed in the following section 4.6.

4.6 Original and creative metaphor translations

This section presents a few more examples of the most original and creative translations. The first case in point is the verb *derail*, used to say that the objection stands in the way of reaching its desired destination, causing the train to leave its tracks accidentally.

- (15) Mathematically, this objection does not **derail** our result: the accepted definition of a monotile has always allowed reflections as legal moves in tilings.

Dal punto di vista matematico questa obiezione non **intacca** il nostro risultato: la definizione comunemente accettata di monotile permette da sempre la riflessione come trasformazione ammessa nelle tassellazioni.

Matematycznie wspomniane obiekcje nie są uzasadnione, bo przyjęta definicja monopyłek dopuszcza odbicia lustrzane przy ich układaniu.

In Italian, a different metaphor is proposed. *Intaccare* has two meanings: to engrave/scratch or to rust. Both interpretations seem equally plausible, referring to physically damaging the surface of an object. However, once again, it is interesting to see how the context of other metaphors might have influenced the translation. *Intaccare* could be linked to the *scratch* mentioned in the near vicinity, as shown in (16).

- (16) It's important to remember that the work has not yet **emerged** from the **crucible** of peer review, although it has **withstood** a great deal of scrutiny from experts with barely **a scratch**.

È importante ricordare che il nostro lavoro non ha ancora **superato il crivello** della revisione tra pari (peer review), anche se è stato ampiamente scrutinato dagli esperti **senza mostrare alcun cedimento**.

Należy pamiętać, że praca nie **przeszła** jeszcze przez etap recenzji, chociaż **przetrwiała** wiele analiz ekspertów prawie **nietknięta**.

The process of peer review is described as difficult, a challenge, by means of different metaphors in the three linguistic versions. The original text proposes an image of a crucible; a vessel used for melting substances that require high heat. It is a conventional metaphor; its second meaning in English dictionaries is a severe test²⁰, possibly giving rise to connotations of adverse conditions, fire and extreme heat difficult to endure. It is enforced by the verb *emerge*, which gives the idea of something coming out of the pot of liquid, melted metal. A military metaphor is introduced in the second part, through the verb *withstood*. Finally, the research is conceptualised as an object *with barely a scratch*, almost intact, except for a tiny incision.

In the Italian version, the military metaphor is realised through the expression *senza mostrare alcun cedimento* [without showing any weakness]. At the same time, a different view of peer review is transmitted – rather than a hellfire, an image of a filter or sieve is proposed – *crivello* [sieve, sifter] works as a barrier to any impurities, only letting through the good quality grain.

Finally, in the Polish version, some of the original metaphors are omitted, perhaps in an attempt to create a more coherent text. The translator uses the same metaphor of surviving (*przetrwiała*) an attack, or severely adverse conditions (such as extreme weather events) in an unaltered state (*nietknięta* [untouched, intact]).

5. Conclusions

As a way of answering the first research question, namely: *What can be inferred about the strategies translators use when translating scientific metaphors and does the genre of popular science influence the translation of metaphors?*, in the analysis of the original English text and two (Italian and Polish) translations, all theoretical procedures of metaphor translation (as proposed e.g. by Schmidt, 2015) were found in the corpus. The dominant procedure was reproducing the

²⁰ <https://www.merriam-webster.com/dictionary/crucible>

original metaphor in the target text using the same CM and the same mapping. Overall, the Italian translation seems to follow the original more closely than the Polish one.

In terms of new translation procedures, an increasing dominance of English “spreading its metaphors” (as noticed already by Monti, 2009) can be seen in the Italian translation, as some of the translations “borrow” the original English term, especially in the case of terminological metaphors (*monotile*, *password*). Taking into consideration a larger unit of analysis and looking at metaphors at sentence level, mixed strategies, for example literal translation + addition, seem to be frequent, as a way of making unfamiliar familiar and more accessible to a non-expert reader in the popular science genres, rather than only as means of a compensation for previous omissions to preserve the overall stylistic value of the text.

The study also proves that metaphors must be analysed in a broader context, sometimes the whole text can be structured by a common metaphor on the conceptual level, for example, in “The Missing Piece: The quest for the einstein tile-a shape never seen before in Mathematics” is structured by the underlying conceptual metaphor RESEARCH IS A JOURNEY and “Quantum-proof secrets” is woven around a baking scenario. Some translators’ choices, although apparently illogical when analysing expressions singularly, can be explained by taking into consideration the discourse context (Kövecses, 2020) of the whole text.

As regards the second research question *How do metaphors change (on linguistic and conceptual level) in the process of translation?*, differences can be observed in the levels of conventionality of terminological metaphors across languages (e.g. the original *lattice* vs Italian *reticolo* and Polish *kerata* in examples (12) and (13)), where the Polish one is more vivid and easier to imagine. An asymmetry between the two target languages can also be seen, for example, in the abundance of terminology for the tiling theory in Polish, compared to Italian (and the English ST).

The results indicate that culture-specific metaphors are rarely translated with the same metaphor. Translators often resort to non-metaphorical paraphrases or introduce a different metaphor. Interestingly, a case was identified in which both translators independently used the same metaphor (playbook > textbook example (2)).

The findings suggest that a non-metaphoric expression becoming metaphoric in translation may be a result of finding the most natural-sounding expression in the TL, or perhaps a subconscious choice of the translator (see example (5) *nadeszła pora*, rather than **był czas*). It could also

be hypothesised that new metaphors appear in the proximity of other linguistic metaphors influenced by the fact that they belong to the same Conceptual Metaphor (as in the case of *bliźniaczy* in section 4.5 or *intaccare/scratch* in section 4.6) and that discourse context primes translators to use metaphors coming from the same source domains, creating a coherent image.

However, changing or omitting metaphors could also be a conscious choice and an attempt to correct the stylistic clashes of the original text, for example avoiding mixed metaphors (see Polish translation of the *armed* – “seed” *configuration* in example (6)), improve the coherence of the text (e.g. *peer review* example (16)) or facilitate the process of communicating knowledge (see example (1) *pegboard*) in the genre of popular science.

Examples from the corpus also highlight metaphors’ sensitivity to context and the active role of the translator in navigating metaphorical meaning in the source and target cultures. Culturally sensitive terms such as *armed* and *conspire* were changed to more neutral words in the Polish translation, possibly to avoid negative connotations, while preserving part of the original conceptual metaphor.

The study contributes to metaphor research by providing empirical evidence of the interaction between conceptual metaphor theory and contextual and discourse-based approaches. It shows that metaphors cannot be fully understood without considering the communicative goals of the text and the cognitive frames activated in both source and target languages.

The results highlight challenges posed by culture-specific linguistic realisations of metaphors, the importance of analysing textual patterns of metaphors and coherence in metaphor translation. Terminological metaphors and their further metaphorisation and re-opening (Knudsen 2003) in popular science texts underline the importance of genre in metaphor translation.

However, several limitations should be considered. Firstly, the corpus size, while sufficient for qualitative analysis, may limit the generalizability of the results to broader genres or language pairs. Additionally, translation choices were examined through comparison of translation products, without direct input from translators, which significantly limits insight into the decision-making process.

Nevertheless, this multilingual study offers insights into ways in which translators negotiate metaphorical meaning across languages. The

findings show comparative perspectives on the effectiveness of different translation strategies and demonstrate how metaphor translation influences reader interpretation. By integrating cognitive linguistics and translation practice in an under-investigated genre of popular science, the study strengthens interdisciplinary perspectives on metaphor transfer.

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Appendix. List of texts included in the corpus

ID	Title	Author (translator – if known)	Language	Published in	Publication date
ENG_00 1	“The Missing Piece: The quest for the einstein tile-a shape never seen before in Mathematics”	Kaplan, Craig S.	English	<i>Scientific American</i> vol. 330 (1)	Jan 2024
ENG_00 2	“Quantum-Proof Secrets”	Houston- Edwards, Kelsey	English	<i>Scientific American</i>	Feb 2024

ENG_003	“New Math”	Bischoff, Manon	English	Vol. 330 (2) <i>Scientific American</i> Vol. 330	Jan 2024
IT_001	“Il pezzo mancante”	Kaplan, Craig S. Francesca Bernardis	Italian (translation)	(4) <i>Le Scienze</i> n. 667	March 2024
IT_002	“Segreti a prova di quanti”	Houston-Edwards, Kelsey Daniele Gewurz	Italian (translation)	<i>Le Scienze</i> n. 668	April 2024
IT_003	“Matematica nuova”	Bischoff, Manon Alfredo Tutino	Italian (translation)	<i>Le Scienze</i> n. 670	June 2024
PL_001	“Brakujący element”	Kaplan, Craig S.	Polish (translation)	<i>Świat Nauki</i> 2024 nr 2 (390)	February 2024
PL_002	“Problemy postkwantowe i kryptografii”	Houston-Edwards, Kelsey	Polish (translation)	<i>Świat Nauki</i> 2024 nr 7 (395)	July 2024
PL_003	“Nowa matematyka”	Bischoff, Manon	Polish (translation)	<i>Świat Nauki</i> 2024 nr 5 (393)	May 2024

Metaphor and Prompting Effects in AI Translation of Specialised Financial Discourse: A Spanish–English Case Study

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Abstract

This study evaluates the performance of neural machine translation (NMT) systems and large language models (LLMs) in translating financial metaphors from Spanish to English. A corpus of 26 Spanish financial metaphors from shareholder letters was translated under six system–prompting conditions: Google Translate, DeepL, ChatGPT (zero-shot and few-shot), and Deepseek (zero-shot and few-shot), yielding 156 translation instances. Translations were assessed using Toury’s (2012) and van den Broeck’s (1981) classification frameworks, alongside a four-dimensional quality matrix (semantic precision, metaphorical equivalence, register appropriateness, and clarity and fluency). Results show that LLMs with zero-shot prompting achieve scores at the top end of the scale and tend to preserve figurative framing, while NMT systems often preserve metaphor formally but with reduced figurative adequacy and register fit. Few-shot prompting produces divergent outcomes: ChatGPT remains stable, whereas Deepseek’s performance declines sharply, suggesting model-specific sensitivity to example-based priming. The findings indicate that AI translation of specialised figurative language is strong but prompting choices and genre constraints remain decisive for reliable deployment in financial communication.

Keywords: financial metaphors, machine translation, neural machine translation, large language models, translation quality assessment, Spanish–English translation

1. Introduction

Financial discourse relies extensively on metaphorical language to frame economic events, shape stakeholder perceptions, and construct persuasive narratives. Metaphors drawn from war, health, architecture, and navigation domains pervade corporate communications, particularly in shareholder letters where companies must explain negative results while maintaining investor confidence (Vargas-Sierra and Moreno-Sandoval, 2021). The translation of such metaphors presents a complex challenge: translators must preserve not only semantic content but also figurative force, cultural resonance, and institutional register.

Traditional machine translation (MT) systems have historically struggled with figurative language, often defaulting to literal renderings that strip away metaphorical meaning. However, recent advances in neural machine translation (NMT) and the emergence of large language models (LLMs) based on transformer architectures have dramatically improved translation quality across multiple dimensions (Vaswani et al. 2017). Systems such as DeepL, Google Translate, ChatGPT, and Deepseek now process vast multilingual corpora and generate contextually appropriate translations that extend beyond word-level correspondences.

Despite these technological advances, systematic evaluation of AI translation quality for specialised metaphorical language remains limited. Most translation quality assessment research focuses on general-purpose texts or technical terminology, leaving a critical gap in our understanding of how AI systems handle the intersection of domain-specific knowledge and figurative expression. Financial metaphors represent an ideal test case: they combine specialised vocabulary, cultural conventions, and rhetorical strategies that demand both linguistic competence and domain expertise.

This study addresses this gap by conducting a cross-linguistic assessment of financial metaphor translation quality across six system-prompting conditions: two NMT systems (Google Translate and DeepL), and two LLMs with different prompting strategies (ChatGPT and Deepseek, each tested with zero-shot and few-shot prompts). Building on previous research by Vargas-Sierra and Moreno-Sandoval (2021) that documented metaphor patterns in Spanish financial discourse, we evaluate 156 translation instances using established translation studies frameworks (Toury 2012; van den Broeck 1981) and a multi-dimensional quality assessment matrix.

The research questions guiding this investigation are:

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1. How do NMT systems and LLMs differ in translating financial metaphors in terms of quality and strategy choice?
 2. What metaphor translation strategies (Toury; van den Broeck) are most characteristic of each system?
 3. How does prompting strategy (zero-shot vs. few-shot) affect LLM translation quality and metaphor handling?
 4. What system-specific tendencies emerge in the treatment of figurative language within an institutional financial register?

By answering these questions, this study contributes to translation studies, computational linguistics, and professional translation practice. The findings have implications for translation workflow design, quality assurance protocols, and the evolving role of human expertise in AI-augmented translation environments.

2. Literature Review

2.1 Theoretical Foundations of Metaphor Translation

The translation of metaphors has long been recognized as one of the most challenging aspects of interlingual communication, requiring translators to navigate the intersection of linguistic structure, cultural knowledge, and conceptual systems (see Lakoff and Johnson, 1980; Mandelblit, 1995; Schäffner, 2016). Drawing on her overview of metaphor translation research, Schäffner (2016) identifies a persistent tension between source-image fidelity and target-culture accessibility, a tension this study operationalises empirically in a specialised financial genre.

Within translation studies, several theoretical frameworks have emerged to guide metaphor translation practice. Toury's (2012) descriptive translation studies approach emphasizes the target-oriented nature of translation, recognizing that metaphor translation involves negotiating between source text fidelity and target culture conventions. Van den Broeck's (1981) classification system distinguishes between metaphor-to-

metaphor translation (M:M), metaphor-to-different-metaphor (M1:M2), metaphor-to-paraphrase (M:P), and metaphor elimination (M:0), providing a taxonomy that enables systematic analysis of translation strategies. Nida's theory of formal versus dynamic equivalence (1964) offers another lens, with formal equivalence prioritizing structural fidelity and dynamic equivalence emphasizing functional effect on target audiences.

Recent research has extended descriptive approaches to the specific difficulties posed by metaphor translation between linguistically and culturally distant languages (Sato, 2015: 2183). Drawing on a descriptive analysis of multiple English translations of Japanese literary texts, Sato argues that metaphors are "open expressions" that may be left open, eliminated, or altered through translation, and that choices along the faithfulness/naturalness axis become particularly visible in metaphor treatment, creating what she calls "translation prisms" (ibid.: 2191). This prism metaphor can be read as suggesting that translation does not simply transfer figurative language but reshapes conceptual framing across languages.

2.2 Financial Discourse and Metaphorical Language

Financial discourse constitutes a specialised register characterized by extensive metaphorical language that serves both cognitive and rhetorical functions. Metaphors in financial communication enable abstract economic concepts to be understood through concrete experiential domains, while simultaneously shaping stakeholder perceptions and constructing persuasive narratives about corporate performance (Charteris-Black 2000: 136). Research on financial metaphors has identified several dominant conceptual domains that structure economic discourse across languages (see, among others, Charteris-Black, 2004; Muelas, 2018; Nicolae 2015; Vargas-Sierra and Moreno-Sandoval, 2021). War metaphors frame economic competition as armed conflict, with companies "battling" competitors, "defending" market positions, and "conquering" new territories. Health metaphors conceptualize economic entities as living organisms that can be "healthy" or "sick," "growing" or "deteriorating." Architectural metaphors present economic structures as buildings with "foundations," "pillars," and potential for "collapse." Nautical metaphors draw on maritime experience to represent business as a journey by sea, with companies "navigating" challenges and "steering" new courses.

In earlier work (Vargas-Sierra and Moreno-Sandoval, 2021), we analysed financial metaphors in Spanish corporate communication and showed how prominently war and health framings surface in shareholder letters issued after negative results. We found that these metaphor choices are rarely decorative: war metaphors cast downturns as external aggression and competition, whereas health metaphors frame them as a diagnosable episode—serious, but potentially reversible through care and recovery. Read in this light, the translation of financial metaphors cannot be treated as a purely linguistic operation, since shifting or diluting the figurative frame can also shift the communicative stance a company projects to its investors.

2.3 Machine Translation Evolution: From SMT to NMT to LLMs

Machine translation has been repeatedly redefined by what counts as “context” for the system. In phrase-based statistical MT, translation was largely driven by phrase pairs learned from word-aligned parallel data and scored with relatively local models; figurative language becomes a stress test in this setting because metaphorical uses are often sparse, non-compositional, or weakly supported by the training evidence, which can push the system toward overly literal renderings or cautious neutralization (Koehn et al., 2003). Neural machine translation shifted the problem from recombining discrete units to learning continuous representations that condition each choice on a wider textual environment. Attention-based encoder–decoder models directly addressed the fixed-length-vector bottleneck by letting the model focus on different parts of the source sentence during generation (Bahdanau et al., 2015), and the transformer later consolidated these gains by relying on self-attention, improving parallelization and shortening the path between distant dependencies (Vaswani et al., 2017). Large language models build on the transformer architecture but differ in training objective and interface: instead of being used strictly as dedicated MT systems, they can be prompted to translate, rewrite, or preserve rhetorical features on demand. Empirical work on ChatGPT-style systems indicates that translation quality is sensitive to how prompts are formulated, and that in-context demonstrations can be beneficial—although their effect depends on the selected demonstrations and how well they match the task (Jiao et al., 2023; Zhang et al., 2023).

Research on NMT and LLM translation of figurative language has documented both progress and persistent challenges. Recent work shows

that strong transformer-based systems and LLMs can preserve metaphor when conventional mappings or established equivalents support the transfer, yet performance becomes less reliable as figurative expressions become more novel, culturally anchored, or tightly bound to domain conventions, where errors and flattening remain common (Wang et al., 2024; Karakanta et al., 2025). At the same time, process-oriented evidence suggests that metaphor is not only an “accuracy” issue: machine-translated metaphors can raise cognitive effort during post-editing, which makes their handling consequential in professional workflows (Koglin and Cunha, 2019). Against this background, prompting has opened a controllable interface for LLM translation, but results remain sensitive to prompt formulation and to the choice of in-context demonstrations, so metaphor translation is a useful diagnostic site for making differences between NMT output and prompted LLM behavior methodologically visible (Jiao et al., 2023; Zhang et al., 2023).

2.4 Challenges in Translating Figurative Language

Translating metaphor rarely begins at the point of “finding an equivalent”: it begins with deciding whether a given expression is metaphorical at all. Work on metaphor identification stresses how easily analysts diverge unless they follow explicit criteria, and even then disagreement persists, because judgments depend on how contextual meaning is distinguished from a more basic sense (Pragglejaz Group, 2007: 31). This is also why metaphor is difficult to operationalize computationally; even when cross-domain mappings are intuitively accessible to humans, as Shutova notes, “labeling source and target domains consistently appears to be a challenging task” (Shutova, 2015: 584). Once metaphoricity is established, translatability is further shaped by culture and context: conceptual patterns may be widely shared, but their salience and associations vary with historical and environmental experience, so the “same” metaphor can cue different frames across languages (Kövecses, 2014; Schäffner, 2004). In this setting, translators and systems face a recurrent dilemma: preserving the source image can retain intended effect, while paraphrase may avoid comprehension problems at the cost of figurative and emotive force (Schäffner, 2004: 1264).

Genre constraints make these choices non-trivial in specialised discourse. Financial communication depends on an institutional register

that must remain controlled even when it uses imagery, and a metaphor that is acceptable in the source genre may become sensational, evasive, or simply odd in the target genre. Empirical MT research continues to report that metaphor translation remains error-prone even for strong systems, and that adaptation to the relevant domain/genre is crucial for improvement (Karakanta et al., 2025). The issue also matters downstream: process-oriented evidence shows that machine-translated metaphors can affect cognitive effort in post-editing, so figurative choices have a cost beyond “accuracy” measured in isolation (Koglin and Cunha, 2019: 42). Finally, LLM prompting introduces a controllable interface for steering metaphor handling, but results can be sensitive to prompt formulation and to the quality of demonstration examples, with systematic prompting for MT still relatively under-explored (Jiao et al., 2023; Zhang et al., 2023).

2.5 Quality Assessment Frameworks for Metaphor Translation

Assessing metaphor translation quality requires stepping outside standard MT evaluation routines. Metrics such as BLEU are designed around n-gram overlap between a candidate and one or more reference translations (Papineni et al., 2002: 311), which means they can reward lexical proximity even when the figurative frame has been diluted—or penalize a rhetorically successful solution precisely because it departs from the surface form of the reference (Reiter, 2018: 393). This limitation has been discussed more broadly in MT evaluation, where improvements in BLEU are not always necessary or sufficient to reflect perceived translation quality (Callison-Burch et al., 2006: 249); in the specific case of metaphor, the gap becomes sharper because the “right” solution may involve reframing, not matching.

Metaphor-sensitive assessment therefore tends to treat quality as a question of what is preserved beyond propositional meaning: whether the metaphor is recognized, whether it is maintained or strategically shifted, and whether its communicative effect remains plausible in the target discourse. Recent work in MT evaluation has begun to operationalize this explicitly. Wang et al.’s MMTE framework, for example, proposes a human evaluation protocol designed to foreground figurative quality, with scores that include metaphorical equivalence alongside affective and authenticity-related dimensions (Wang et al., 2024: 11343). In parallel, translation-oriented models such as House’s TQA remain useful because they keep register and genre at the center of evaluation, insisting on detailed textual analysis and

culturally informed contextual comparison before any judgement of “quality” is made (House, 2015).

Automatic metrics can still play a supporting role, especially those that move beyond surface overlap by using contextual representations. BERTScore is a clear example of this shift, replacing exact matching with similarity computed over contextual embeddings (Zhang et al., 2020: 1), and neural evaluators such as COMET explicitly exploit both the source and a reference translation to predict quality (Rei et al., 2020: 2685). Yet even these metrics are not designed to decide whether a metaphor is rhetorically well-placed for a given institutional genre, which is why figurative evaluation typically remains hybrid: it uses automatic signals for semantic adequacy but retains human assessment for metaphor handling and register fit.

2.6 Recent Advances in AI Translation of Metaphors

Recent benchmark-oriented work on LLMs used as translators suggests that part of the recent “progress” is not only architectural, but interactional: translation quality can vary with the prompt, and the same system can be instructed to privilege different textual constraints. Jiao et al. explicitly treat “translation prompt” as a variable, report only minor differences across candidate prompt templates, and show that performance increases substantially when ChatGPT is run with GPT-4, becoming comparable to commercial MT even for distant languages (Jiao et al., 2023). What prompting adds, then, is a new kind of leverage—but it also introduces a new source of instability. Zhang et al. (2023) note that prompting for MT is still under-explored and demonstrate, in a controlled study, that the number and quality of in-context examples matter: suboptimal demonstrations can degenerate translation rather than improve it. For metaphor translation this point is methodological, not anecdotal: an illustrative example can steer the model toward an image that “fits” the prompt but not the next input, the target genre, or the domain conventions the translation is meant to respect. Empirical studies focused on figurative language keep expectations calibrated. In a literary setting, Karakanta et al. (2025) report that metaphor translation remains challenging and uneven across systems, with human evaluation revealing persistent metaphor-related errors and accuracy levels that still leave substantial room for improvement, while also stressing the importance of domain adaptation (Karakanta et al., 2025: 276). In parallel, Wang et al. (2024) argue that mainstream MT evaluation tends to

underweight figurative quality and propose MMTE, combining a multilingual metaphor corpus with a human protocol that isolates figurative dimensions (Metaphorical Equivalence, Emotion, Authenticity, and overall Quality), and they observe that figurative translations show traits that diverge from literal ones. Together, these lines of work support a cautious conclusion: recent advances are real, but the evidence base for when prompting reliably improves metaphor translation—across domains and language pairs—remains thinner than the enthusiasm around LLM translation might suggest (Zhang et al., 2023).

2.7 Research Gaps and Study Motivation

Despite growing interest in AI translation of figurative language, the evidence base remains uneven in contexts where metaphors are part of institutional framing rather than stylistic ornament. Much evaluation still relies on literary or general-purpose texts, leaving less clarity about how systems behave in specialised financial discourse, where metaphor choices can carry rhetorical consequences for investor-facing communication. An exception is Zhang et al. (2024), who probe the bilingual Spanish-English competence of financial LLMs and find meaningful variation across models and tasks; their work, however, focuses on general financial language capabilities rather than figurative language or translation quality, which leaves the handling of metaphor in investor-facing texts as an open empirical question.

A second gap concerns comparability: studies often report single-system results without a shared analytical lens, and prompting effects are frequently treated as an implementation detail rather than an object of evaluation. This study responds by comparing NMT and prompted LLM output on a controlled set of Spanish financial metaphors, classifying metaphor treatment with Toury/van den Broeck and scoring quality along semantic precision, metaphorical equivalence, register appropriateness, and fluency.

3. Methodology

3.1 Corpus Design

The corpus used in this study was built from the set of financial metaphors identified in Vargas-Sierra and Moreno-Sandoval (2021), where war- and health-related framings were shown to be recurrent in shareholder letters issued by Spanish companies reporting negative results. From that line of work, we selected 26 Spanish phrases that contain metaphorical language used to frame financial performance and managerial decisions.

All source items come from shareholder letters in annual reports. This genre is particularly suitable for metaphor research because it combines an institutional register with a persuasive communicative purpose: metaphors are often mobilised to shape how decline, risk, and recovery are interpreted. Working with authentic excerpts therefore supports ecological validity, since the translation of metaphor in this context is not a purely stylistic matter but part of investor-facing communication where rhetorical framing can matter.

Each of the 26 phrases was translated by six systems (Section 3.2), producing 156 translation instances (26×6). This design keeps the source input constant while allowing systematic comparison of how different technologies and prompting conditions handle the same metaphorical material. The 26 items retained for this study are primarily drawn from the war and health domains, the two most recurrent conceptual domains identified in Vargas-Sierra and Moreno-Sandoval (2021), which together account for 21 of the 26 source phrases. The remaining 5 items instantiate adjacent figurative domains—nautical, architectural, personification, and structural/stage—that were retained because they appear in the same shareholder-letter corpus and are equally subject to the genre constraints under investigation (see Table A1). Alternative sources—such as financial reporting in other Romance languages or earnings call transcripts—were considered but set aside: shareholder letters issued after negative results offer a well-bounded, authentically produced genre in which metaphorical framing is both recurrent and rhetorically consequential, and the availability of a prior systematic annotation (Vargas-Sierra and Moreno-Sandoval, 2021) ensures that source-item selection is not ad hoc. Metaphors from other conceptual domains identified in that study were excluded to preserve thematic coherence and to enable focused comparison within a well-documented figurative register. Table A1 in the Appendix lists all 26 source items with their conceptual domain and originating company.

3.2 Translation Systems and Prompting Design

We evaluated two widely used NMT systems (Google Translate and DeepL) and two LLM-based systems (ChatGPT and Deepseek). For the LLMs, outputs were generated under two prompting conditions to test sensitivity to instructions and demonstrations: a zero-shot condition with instructions only, and a few-shot condition where the same instruction was followed by a single example.

For zero-shot prompting, both LLMs received the following instruction:

- “You are a professional translator. Translate the following phrases from Spanish to English, taking into account that they are extracts from financial texts.”

For few-shot prompting, the same instruction was used, followed by one demonstration pair intended to model the task and the register. The example was:

- Spanish: “un cambio tan espectacular no hubiera sido posible si la compañía no hubiese dado el golpe de timón en la gestión” (Adolfo Domínguez, 2016)
- Reference translation used in the prompt: “such a dramatic change would not have been possible if the company had not applied full rudder in management.”

Crucially, this reference translation was used only as an in-prompt demonstration to establish a possible treatment of metaphor and genre tone; it was not treated as a gold standard for evaluation, and no human baseline is included as a “system” in the comparison.

This setup lets us test a simple but practically relevant question: does giving an LLM a single example improve metaphor translation in a specialised register—or does it bias the model in unhelpful ways?

All LLM outputs were generated using the model versions publicly available in May 2025: ChatGPT was accessed via the ChatGPT interface running GPT-4o, and Deepseek via the Deepseek Chat interface running DeepSeek-V3. Google Translate and DeepL were accessed via their standard web interfaces during the same period. As model versions are subject to update, results may not be fully reproducible with later releases.

3.3 Evaluation Framework

Evaluation combines (i) a strategy typology for describing how metaphors are handled in translation and (ii) a four-dimension scoring matrix designed to capture both meaning and rhetorical fit. All coding and scoring were performed by a single analyst without the use of qualitative data analysis software (such as NVivo or QDAMiner). The material comprises 156 translation instances, a size that lends itself to close manual reading and allows each instance to be examined in its textual context. The use of explicit descriptors and fixed scoring criteria was intended to maintain consistency across this manual process, though the absence of independent coding is acknowledged as a limitation (see Section 5).

3.3.1 Metaphor Translation Strategy Classification

Following van den Broeck (1981) and Toury (2012), each translated item was classified according to its treatment of the source metaphor:

- M:M (Metaphor → same metaphor): the metaphorical framing is retained with minimal change.
Example: “un progresivo deterioro de nuestra posición de tesorería” → “progressive deterioration of our cash position.”
- M1:M2 (Metaphor → different metaphor): the metaphor is preserved, but realised through a different metaphorical expression (often more idiomatic in English).
Example: “sigue sufriendo un desequilibrio estructural... nos hemos ajustado a la realidad” → “wobbles from a structural imbalance... kept our footing.”
- M:P (Metaphor → paraphrase): the metaphor is neutralised into a non-figurative rendering that conveys the propositional meaning.
Example: “dado el golpe de timón en la gestión” → “made the management turnaround.”
- M:0 (Metaphor elimination): metaphorical framing present in the source is omitted in the target, with no figurative counterpart.
Example: “una tormenta de críticas” → “widespread criticism.”
- 0:M (Metaphor addition): a metaphor is introduced in the translation where the source is non-metaphorical.

Example: “numerosas críticas” → “storm of protests.”

Within M1:M2, we additionally distinguished cases of intensified reconfiguration (M1:M2+I) when the substituted metaphor increased the rhetorical charge of the source expression, shifted its evaluative domain, or introduced imagery markedly stronger than the original. Operationally, an M1:M2 case was coded as M1:M2+I when the target metaphor (a) drew on a more charged conceptual domain than the source (e.g., replacing a neutral managerial metaphor with explicit war imagery), (b) added evaluative force not present in the source, or (c) introduced personification or embodiment absent from the original framing. This distinction was applied post-hoc during analysis of Deepseek (few-shot) outputs, where a recurrent pattern of amplified reconfiguration emerged that was qualitatively distinct from standard M1:M2 cases. For transparency, M1:M2+I is reported across all systems in Table 4; however, it is only instantiated in Deepseek (few-shot) in this dataset.

Although M:0 is included in the classification framework for completeness, no instances of full metaphor elimination were recorded in the present dataset. This absence is consistent with the high conventionality of the source expressions, which appear to be sufficiently recognisable for all systems to produce some form of figurative or propositional equivalent. This classification makes strategy choices visible and allows us to compare system tendencies (e.g., neutralisation vs preservation) independently of overall quality scores.

3.3.2 *Quality Assessment Matrix*

Each translation instance was scored on a 0-5 scale along four dimensions, as the following table shows. For each translation, the four scores were averaged to obtain an overall quality score. System-level consistency was assessed by calculating the standard deviation of scores across the 26 items.

Criterion	5 Excellent	4 Very good	3 Acceptable	2 Deficient	1 Insufficient	0 Inadequate
Semantic precision	Full fidelity to the source	Generally precise with minor	Comprehensible, but some nuances are lost.	Omissions or reformulations that	Meaning is distorted.	Does not reflect the

	meanin g.	adjustmen ts.		affect meaning.		source content.
Metaphori cal equivalen ce	Metap hor well maintai ned or adapte d with express ive force.	Metaphor preserved, though slightly softened.	Metaphor partially diluted or neutralised.	Metaphor nearly suppresse d.	Metaphor lost or misinterp reted.	Metapho r entirely eliminat ed.
Register appropriat eness	Tone and style perfect ly aligned with the genre.	Register appropria te with minor inconsiste ncies.	General register, somewhat neutral.	Register poorly suited to the genre.	Register confused or clearly inappropri ate.	Register entirely inappro priate for the genre.
Clarity and fluency	Natura l, fluent reading .	Fluent with occasional minor stiffness.	Comprehe nsible but somewhat forced.	Reading is impeded.	Awkward or ambiguou s.	Incohere nt or illegible.

Table 1. Metaphor Translation Assessment Matrix (scale: 0–5)

3.4 Data Analysis

Data analysis combined descriptive statistics with close qualitative reading of the translations. Quantitatively, we calculated mean scores for each system across the four quality dimensions and used standard deviation to capture how stable each system’s performance was across the 26 metaphorical items. In parallel, we carried out a qualitative analysis grounded in the strategy typology described in Section 3.3.1, tracking how each system tended to preserve, shift, neutralize, or introduce metaphor, and where prompting conditions altered these tendencies. Finally, selected case studies were used to illustrate recurrent solution types and to make system differences visible at the level of individual metaphor choices, especially where semantic adequacy and rhetorical fit came apart.

4. Results

4.1 Overall Performance Rankings

Table 2 reports mean scores and standard deviations for the six systems across the four evaluation dimensions (scale 0–5). Performance is clearly stratified: LLMs in the zero-shot condition cluster at the top with top-range scores, NMT systems occupy a stable middle range, and Deepseek under few-shot prompting falls well below the rest, both in average quality and consistency.

Rank	System	Semantic Precision	Metaphorical Equiv.	Register	Clarity and Fluency	Final Score	Std Dev
1	Deepseek (zero-shot)	4.98	4.96	5.00	4.98	4.98	0.02
2	ChatGPT (zero-shot)	5.00	4.87	5.00	5.00	4.97	0.07
3	ChatGPT (few-shot)	4.98	4.85	5.00	5.00	4.96	0.08
4	DeepL	4.85	4.65	4.92	4.85	4.82	0.13
5	Google Translate	4.77	4.52	4.67	4.69	4.66	0.17
6	Deepseek (few-shot)	3.21	2.50	2.88	3.20	2.95	0.38

Table 2. Translation quality scores across systems and dimensions (scale: 0-5)

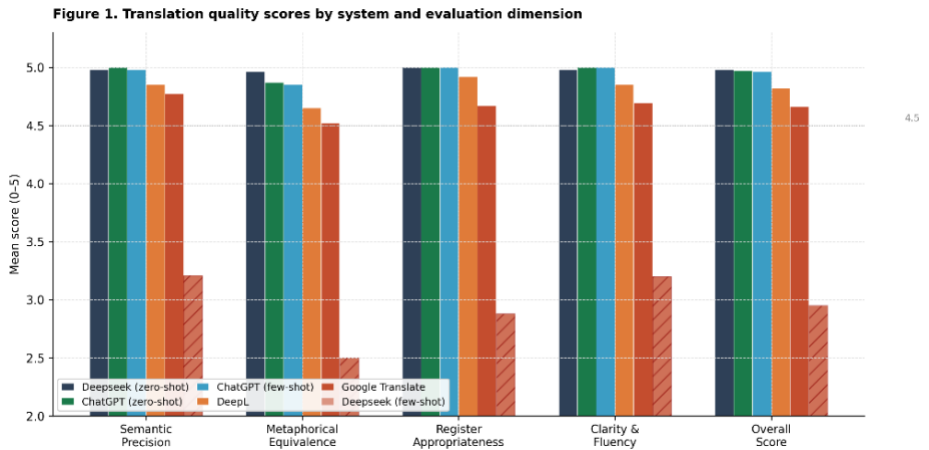


Figure 1. Translation quality scores by system and evaluation dimension (scale 0–5).

Two patterns are worth highlighting. First, the top three positions are all occupied by LLM outputs. Deepseek (zero-shot) achieves the highest overall score (4.98) with exceptionally low dispersion ($SD = 0.02$), indicating highly uniform behaviour across the 26 items. ChatGPT (zero-shot) reaches perfect means in semantic precision, register, and clarity, with its only relative drop in metaphorical equivalence (4.87), suggesting that even at an almost maximal level of performance the main “pressure point” remains figurative adequacy rather than propositional meaning. Second, the NMT systems sit in a consistent middle band. DeepL (4.82) outperforms Google Translate (4.66) across all dimensions, and both systems show their lowest scores in metaphorical equivalence, consistent with formal metaphor retention (M:M) that does not always preserve figurative adequacy or register-relevant connotations in the target language. Against this backdrop, Deepseek (few-shot) is the clearest outlier: its overall score (2.95) and high variability ($SD = 0.38$) point to unstable behaviour across items, and the collapse in metaphorical equivalence (2.50 vs. 4.96 in zero-shot) suggests that the demonstration example does not merely “fail to help” but shifts the model toward a qualitatively different—and frequently unsuitable—solution mode.

4.2 Case Study: “golpe de timón” (Nautical Metaphor)

To illustrate how these quantitative contrasts materialise at the level of individual choices, we examine the translation of *golpe de timón* (literally “rudder blow”), a nautical metaphor used to describe a decisive change of direction.

- Original Spanish (Adolfo Domínguez, 2016): “un cambio tan espectacular no hubiera sido posible si la compañía no hubiese dado el golpe de timón en la gestión”
- Literal gloss: “such a dramatic change would not have been possible if the company had not given the rudder blow in management”

Table 3 presents the six system outputs, their strategy classification, and the quality score for the item.

System	Translation	Strategy	Quality
DeepL	“made the management turnaround”	M:P	4.50
Google Translate	“made a change of direction in management”	M:P	4.25
ChatGPT (zero-shot)	“made a course correction in its management”	M1:M2	5.00
ChatGPT (few-shot)	“applied a full rudder in its management”	M:M	5.00
Deepseek (zero-shot)	“steered a new course in management”	M1:M2	5.00
Deepseek (few-shot)	“applied full rudder in management”	M:M	4.75

Table 3. Translation comparison for “golpe de timón” nautical metaphor

What stands out here is not “accuracy” in a narrow sense—most outputs convey the managerial turn—but the different ways systems negotiate figurative framing. Both NMT systems neutralise the nautical image through paraphrase (M:P): turnaround is idiomatic and institutionally plausible, while change of direction stays closer to the literal meaning but reads as flatter and more generic. In contrast, the zero-shot LLM outputs retain the nautical domain through metaphorical reconfiguration (M1:M2). Course correction and steered a new course preserve the conceptual mapping while remaining idiomatic in English and appropriate for shareholder discourse, which is reflected in their perfect scores.

Few-shot prompting pushes both LLMs toward closer structural preservation (M:M), producing applied (a) full rudder. This choice maximises formal fidelity to the source image but at some cost to target-language naturalness, especially in the slightly strained collocation applied a full rudder. The example is instructive because it makes the main trade-off explicit: maintaining the source image can preserve conceptual texture, yet the most literal option is not necessarily the one that best fits English institutional usage.

To complement the *golpe de timón* case study, three further excerpts illustrate recurrent patterns that are visible in the quantitative results: formal preservation versus genre-aware reconfiguration, metaphor addition as a system-specific tendency, and few-shot prompting as a trigger for figurative

drift.

Example A (formal preservation vs. genre-aware reconfiguration). In the sentence “Si bien su mercado sigue sufriendo un desequilibrio estructural... nos hemos ajustado a la realidad mejor que la mayoría de los actores del mercado” (IAG, 2016), NMT systems retain the structural framing, as in DeepL’s “still suffers from a structural imbalance... we have adjusted to reality better than most market players” (M:M), though the rendering remains propositionally adequate rather than rhetorically charged. By contrast, Deepseek under few-shot prompting reframes the same passage metaphorically—“still *wobbles* from a structural imbalance... we’ve *kept our footing* better than most market actors” (M1:M2)—retaining figurative force while remaining compatible with an institutional register. The example is useful precisely because it shows that figurative reconfiguration is not necessarily a threat to genre fit: when the target metaphor is conventional and controlled, it can preserve framing without sounding sensational or colloquial.

Example B (0:M—metaphor addition). The statement “Evidentemente el mercado está reconociendo la buena marcha del banco” (Bankinter, 2014) is rendered literally by most systems (“the market is recognizing the bank’s good/strong performance”), which keeps the message informational and unmarked. Deepseek in the few-shot condition, however, introduces a metaphor where the source does not explicitly contain one: “The market is *giving its stamp of approval* to the bank’s strong performance” (0:M). This is not a semantic error—the evaluative meaning is compatible—but it shifts the rhetorical packaging by adding imagery of certification/validation, illustrating how metaphor addition can subtly alter stance and emphasis even when propositional content remains stable.

Example C (few-shot prompting as intensification and register disruption). The strongest illustration of model-specific prompting sensitivity appears in “Tenemos desafíos y grandes oportunidades y hemos preparado una estrategia eficaz para afrontarlos” (FCC, 2016, CEO). While other systems remain within a neutral managerial frame (“challenges... prepared an effective strategy to address them”), Deepseek under few-shot prompting recasts the sentence in a war scenario: “We face *enemies*... and we’ve *drawn our swords* with a strategy to meet them.” This output exemplifies the kind of figurative drift that helps explain the marked decline observed for Deepseek (few-shot): the issue is not fluency, but a domain shift that

intensifies the framing and risks violating the restrained tone expected in shareholder discourse.

4.3 Translation Strategy Patterns

Table 4 summarises strategy distribution across the corpus. The figures make clear that systems do not merely differ in “how well” they translate metaphors, but in how they systematically approach metaphor as a translation problem.

System	M:M	M1:M2	M:P	M1:M2+I	Total
DeepL	23	1	2	0	26
Google Translate	23	1	2	0	26
ChatGPT (zero-shot)	22	1	3	0	26
ChatGPT (few-shot)	21	2	3	0	26
Deepseek (zero-shot)	24	2	0	0	26
Deepseek (few-shot)	3	6	0	17	26

Table 4. Metaphor Translation Strategy Distribution by System

Note. M:M = metaphor preserved as same metaphor; M1:M2 = metaphor replaced by different metaphor; M:P = metaphor neutralised through paraphrase; M1:M2+I = metaphor replaced with amplified figurative expression. Deepseek (few-shot) highlighted in light red given its divergent strategy profile.

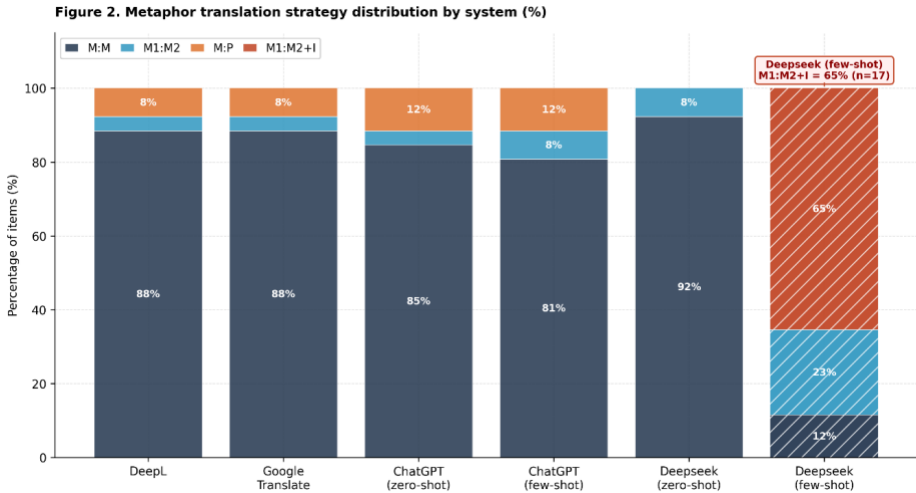


Figure 2. Strategy distribution by system (percentages over $N = 26$ items; categories as defined in

Across all systems except Deepseek (few-shot), direct metaphor preservation (M:M) is the dominant strategy, accounting for between 81% and 92% of cases. The two NMT systems show near-identical profiles: both Google Translate and DeepL produce M:M translations in 89% of instances, with only marginal reconfiguration (M1:M2 = 4%) and minimal paraphrase (M:P = 7%). Contrary to what might be expected from systems optimised for semantic safety, these results suggest that the metaphorical expressions in this corpus are sufficiently conventional for NMT systems to reproduce them without neutralisation. The gap between NMT and LLM outputs is therefore less pronounced in strategy terms than in quality scores, where the differences are driven primarily by metaphorical equivalence and register fit rather than by strategy choice per se.

LLMs in zero-shot conditions follow a similar preservation-oriented profile. Deepseek (zero-shot) maintains the source metaphor in 92% of cases, with only two instances of reconfiguration (M1:M2 = 8%) and no paraphrase. ChatGPT (zero-shot) shows an almost identical pattern (M:M = 85%, M1:M2 = 4%, M:P = 12%). Few-shot prompting produces only minor shifts in ChatGPT, with a slightly higher reconfiguration rate (M1:M2 = 7%) and a comparable M:M proportion (81%), consistent with the case study evidence that the demonstration nudges the model toward formal adherence without substantially altering its overall strategy.

Deepseek (few-shot) is the clear outlier. Its strategy distribution diverges sharply from all other conditions: direct preservation collapses to 12% (3 out of 26 items), standard reconfiguration accounts for 23% (M1:M2 = 6), and the dominant response—65% of cases—is M1:M2+I, a category absent from every other system. This pattern indicates that the demonstration example does not simply encourage closer formal adherence; rather, it appears to prime the model toward amplified figurative reconfiguration, producing metaphors of greater rhetorical charge—often drawn from war, biomedical, or personification domains—that are less congruent with the institutional register of shareholder-letter discourse. This explains why Deepseek (few-shot) combines a nominally high reconfiguration rate with the lowest overall quality scores and the greatest variability across items.

4.4 Impact of Prompting Strategy

Few-shot prompting had markedly different effects on the two LLM systems. In ChatGPT, the change was small: the overall mean score decreased marginally ($4.97 \rightarrow 4.96$), while the total proportion of metaphor-preserving strategies remained stable (M:M + M1:M2: 88% in both conditions). What shifted was the internal distribution: M1:M2 increased slightly ($4\% \rightarrow 8\%$) at the expense of direct maintenance (M:M: $85\% \rightarrow 81\%$), suggesting the demonstration nudged the model toward slightly more varied reconfiguration without destabilising overall quality.

Deepseek shows the opposite pattern. Under few-shot prompting, performance dropped sharply ($4.98 \rightarrow 2.95$), driven above all by a collapse in metaphorical equivalence ($4.96 \rightarrow 2.50$). Strategy distributions also shifted: Deepseek (few-shot) displays the highest rate of standard M1:M2 in the dataset (23%), alongside the dominant M1:M2+I category (65%). In several items, the model intensified the figurative frame or substituted a different metaphorical domain in ways that altered the intended stance of the source text, for example by replacing comparatively neutral architectural or management-oriented imagery with more violent war-like framings, or by reworking medical metaphors into personifications that distorted the original meaning.

Taken together, these results suggest that few-shot prompting does not operate as a uniform “improvement mechanism” in metaphor translation. For ChatGPT, the example functions as a mild constraint that shapes strategy without destabilising quality; for Deepseek, the same kind of demonstration appears to trigger a broader—and frequently counterproductive—shift in figurative behaviour. While the present study cannot attribute this divergence to specific model-internal factors, it does indicate that example-based prompting can introduce substantial model-specific sensitivity, and that few-shot setups require careful validation rather than being assumed to be beneficial by default.

5. Discussion

The results point to a consistent separation between system types, but the contrast is not simply a matter of “better” versus “worse.” In the zero-shot condition, LLMs cluster at the top of the rankings with almost maximal scores across dimensions and relatively low dispersion across the 26 items, whereas NMT systems remain competent but show a systematic weakness in metaphorical equivalence. This distribution suggests that, in metaphor-

rich financial excerpts, the main difficulty is not propositional accuracy—where strong systems generally perform well—but the ability to preserve or reconfigure figurative framing without disturbing institutional register. A related issue is stability. Deepseek under zero-shot prompting behaves with exceptional consistency, while the same model under few-shot prompting becomes markedly unstable. In investor-facing communication, this difference matters: a small decline in average quality can be manageable, but a single register-breaking or meaning-shifting outlier can undermine the rhetorical stance a shareholder letter is designed to project.

Looking more closely at how systems reach their scores clarifies what is at stake. NMT outputs show a strong preference for direct metaphor preservation (M:M), producing translations that are usually fluent and semantically adequate. However, their consistently lower scores in metaphorical equivalence suggest that formal preservation does not guarantee figurative adequacy: these systems tend to reproduce the surface form of the metaphor without always capturing its full rhetorical function or register-appropriate connotations in the target language. The cost is therefore not one of neutralisation but of figurative flatness—the metaphor is retained, but its expressive force in the institutional genre may be reduced. By contrast, LLMs—especially in zero-shot prompting—are more willing to maintain metaphorical framing either by keeping the metaphor (M:M) or by replacing it with a different but functionally compatible metaphor (M1:M2). When reconfiguration is successful, it behaves less like “creative license” and more like genre-aware equivalence: the figurative work of the expression is preserved but realised in a way that reads as idiomatic English within an institutional tone. This is precisely where metaphor translation becomes a question of rhetorical equivalence rather than lexical matching. The most consequential practical result, however, concerns prompting. Few-shot prompting does not operate as a uniform enhancement mechanism. For ChatGPT, adding a single demonstration produces only marginal changes and a modest shift toward metaphor preservation, without destabilising overall quality. For Deepseek, the same move triggers a sharp decline, driven above all by metaphorical equivalence and register disruption. What changes in these cases is not merely the frequency of metaphor, but its function. In several items, Deepseek under few-shot prompting adopts intensified or mismatched imagery and, in doing so, alters stance and sometimes meaning. This makes a concrete point for applied settings: example-based prompting can introduce model-specific sensitivity that is not predictable from zero-shot performance, so few-shot prompts

need validation on representative samples rather than being treated as a safe default.

The case study of *golpe de timón* makes the constraint visible in an intuitive way. A translation can be accurate while still shifting the rhetorical frame, either by neutralising the nautical mapping into managerial terminology or by preserving it in a target-idiomatic form (“course correction”, “steered a new course”). In shareholder letters, these shifts are not cosmetic. Metaphor participates in how responsibility, agency, and prospects are framed, and choices that look interchangeable at the level of propositional meaning can still change tone and communicative stance. The strongest outputs are those that negotiate this tension: they preserve figurative framing without importing imagery that reads as exaggerated, informal, or culturally misaligned for the genre.

For professional workflows, the implications are therefore selective rather than sweeping. General-purpose LLMs can be useful for metaphor translation in specialised financial texts, particularly under minimal prompting, but system choice and prompt design remain consequential. A plausible workflow is to treat LLM output as a high-quality draft and concentrate human revision where fragility persists: metaphorical equivalence when the source relies on culturally loaded imagery and register control when the target discourse is institutionally constrained. This also reframes what “quality assurance” should look like in figurative translation: the task is not only to check meaning, but to monitor stance and genre fit, especially in cases where a model produces an unusually strong or incongruent figurative reconfiguration.

From a translation-studies perspective, the findings support the view that metaphor translation cannot be reduced to formal correspondence. The best solutions are often those that preserve figurative function through controlled reconfiguration rather than literal transfer. At the same time, the sharp prompting effect observed in one model underscores that “competence” in figurative translation is not a stable property of the technology in the abstract; it is an emergent behaviour shaped by interactional conditions (here, the prompt) and by genre constraints. Seen this way, prompting is not a cosmetic interface layer but part of the translation situation that can either stabilise or destabilise performance, depending on the model.

Several limitations constrain the generalisability of these findings. The corpus comprises 26 metaphors from a single genre (shareholder letters) and one language pair (Spanish–English), so different metaphor

types or discourse contexts may yield different patterns. The evaluation was conducted by a single analyst, which precludes the calculation of inter-rater reliability coefficients. While the use of explicit descriptors and fixed scoring criteria was designed to minimise subjectivity, the absence of independent coding represents a limitation that future work should address, for example through systematic double-coding on a subset of items. The present study is best understood as a first empirical map of this research space, with findings intended to motivate more controlled replication rather than to constitute definitive quantitative conclusions. Finally, the analysis is sentence-level and does not model document-level coherence, terminology management, or client-driven constraints that shape translation adequacy in professional settings.

6. Conclusions

This study set out to examine how current NMT systems and large language models handle the translation of Spanish financial metaphors into English in a genre where figurative language is part of institutional positioning rather than stylistic ornament. Returning to the four research questions posed at the outset, the findings yield the following picture.

On the first question—how NMT and LLM systems differ in quality and strategy—the results show a consistent stratification. Zero-shot LLMs reach near-maximal scores and high stability across items, whereas NMT systems perform competently but show a systematic shortfall in metaphorical equivalence. This gap is not primarily about propositional accuracy, which is generally adequate across all systems, but about the capacity to preserve or purposefully reconfigure figurative framing within an institutional register.

On the second question—which metaphor translation strategies characterise each system—direct metaphor preservation (M:M) is dominant across all conditions except Deepseek (few-shot). NMT systems and zero-shot LLMs produce broadly similar strategy profiles, yet their quality scores diverge, confirming that identical strategy labels can conceal differences in rhetorical adequacy. Deepseek (few-shot) represents a qualitatively distinct case: its dominant response is an intensified metaphor reconfiguration (M1:M2+I) that disrupts both genre register and semantic intent.

On the third question—how prompting strategy affects LLM output—the clearest finding is that few-shot prompting does not operate as

a uniform improvement mechanism. For ChatGPT, the effect is marginal and manageable; for Deepseek, a single in-context example triggers a sharp decline in metaphorical equivalence and register fit, pointing to model-specific sensitivity that cannot be inferred from zero-shot performance alone.

On the fourth question—what system-specific tendencies emerge in specialised financial discourse—NMT systems show figurative flatness (formal preservation without full rhetorical adequacy), while LLMs under zero-shot conditions demonstrate a capacity for genre-aware equivalence that goes beyond lexical matching. Deepseek under few-shot prompting is the outlier that best illustrates how figurative drift can compromise institutional tone.

This study advances the evidence base for AI translation of specialised figurative language in two respects. First, it demonstrates that metaphor handling in financial discourse can be meaningfully evaluated using a combination of strategy classification and multi-dimensional quality assessment, providing a replicable analytical framework for future work. Second, it provides the first systematic evidence that prompting effects on metaphor translation are not model-neutral: the same prompting logic can stabilise one system and destabilise another, a finding with direct consequences for how practitioners configure AI translation workflows.

For translation professionals working with investor-facing communication, the results suggest that LLM output—particularly under minimal prompting—can serve as a reliable first draft for financial metaphors in contexts where institutional register and figurative framing both matter. However, the prompting instability observed in one model underscores that few-shot configurations require validation on representative samples before deployment, and that quality assurance in this domain should monitor not only semantic accuracy but also stance and register consistency. Post-editing effort is most likely to concentrate on those items where a model has produced an unusually strong or register-incongruent figurative reconfiguration.

The corpus covers one genre, one language pair, and war/health metaphor domains principally; replication across other financial genres (earnings calls, analyst reports) and other language pairs would test the generalisability of the findings. Single-analyst evaluation remains a methodological constraint that future work should address through systematic double-coding. Extending the framework to document-level coherence and to LLM versioning effects—given that model updates can

alter translation behaviour—are further productive directions. Finally, there is scope to investigate how genre-specific prompt engineering can be used to steer LLM figurative behaviour more reliably, building on the prompting sensitivity this study has documented.

6.1 Future Research Directions

Future research should expand the corpus to include multiple genres (analyst reports, financial news, regulatory documents), additional language pairs, and diverse metaphor types. Comparative evaluation with multiple human translators, including native speakers and domain specialists, would provide a more robust baseline. Real-time evaluation with professional translators and end users would assess quality dimensions beyond sentence-level accuracy, including document coherence, terminology consistency, and communicative effectiveness. Investigation of the mechanisms underlying LLM metaphor processing—through attention analysis, probing tasks, or controlled experiments—would illuminate how these systems achieve creative metaphorical reconfiguration and why prompting strategies produce divergent effects. Cross-cultural validation would assess whether translation quality patterns generalize across linguistic and cultural contexts or reflect specific characteristics of the Spanish-English language pair and European financial discourse conventions.

Longitudinal studies tracking AI system evolution would document the trajectory of translation capabilities and identify factors driving quality improvements. As AI systems continue to advance, understanding their strengths, limitations, and optimal application contexts will be essential for realizing their potential while preserving the irreplaceable value of human expertise in specialised translation.

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Appendix. Table A1. Source Metaphors

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
1	<i>golpe de timón en la gestión</i>	(...) un cambio tan espectacular no hubiera sido posible si la compañía no hubiese dado el golpe de timón en la gestión.	Nautical	MANAGING A COMPANY IS STEERING A SHIP	Adolfo Domínguez (2016)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
2	<i>cimientos sólidos / cuatro pilares estratégicos</i>	La fusión nos aporta unos cimientos sólidos en los que apoyarnos para convertirnos en el líder a partir de cuatro pilares estratégicos.	Architecture	A COMPANY IS A BUILDING / STRATEGY IS A STRUCTURE	Gamesa (2017)
3	<i>el mercado está reconociendo</i>	Evidentemente el mercado está reconociendo la buena marcha del banco.	Personification	THE MARKET AS A HUMAN BEING	Bankinter (2014)
4	<i>se ha comportado con mayor dinamismo</i>	Estos resultados (...) han sido posibles gracias al muy buen comportamiento de los mercados en que operamos, particularmente el mercado de los EE.UU. que ha sido el que se ha comportado con mayor dinamismo tanto en volúmenes como en precios.	Personification	THE MARKET AS A HUMAN BEING	Acerinox (2016)
5	<i>desequilibrio estructural / actores del mercado</i>	Si bien su mercado sigue sufriendo un desequilibrio estructural	Structure / Stage	THE ECONOMY IS A PHYSICAL STRUCTURE	IAG (2016)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
		entre la oferta y la demanda, nos hemos ajustado a la realidad mejor que la mayoría de los actores del mercado.		E / PARTICIPANTS ARE ACTORS	
6	<i>recuperación de los mercados latinoamericanos</i>	Los resultados de Iberia volvieron a ser realmente impresionantes, debido, en parte, a la recuperación de los mercados latinoamericanos, especialmente Brasil.	Health	THE ECONOMY IS A LIVING ORGANISM — MARKETS CAN FALL ILL AND RECOVER	IAG (2017)
7	<i>impactado de forma notable</i>	En 2015, Duro Felguera ha atravesado un ejercicio complejo, impactado de forma notable por las dificultades en el desarrollo de uno de nuestros proyectos más relevantes en Argentina.	War	BUSINESS IS WAR	Duro Felguera (2015)
8	<i>han impactado / ha retrocedido</i>	Ambas partidas han impactado sobre nuestro EBITDA reportado que ha retrocedido un 17,6%	War	BUSINESS IS WAR	Codere (2014)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
		sobre el del año anterior, hasta la cifra de 163,5 millones de euros.			
9	<i>luchará por conseguir</i>	Ahora bien, por importantes que sean cuantitativamente las pérdidas, hay que comprender que no cuestionan la solidez de la estrategia (...), cuyas perspectivas quedan plasmadas en el Plan recién presentado y en el que se perfilan con claridad los objetivos empresariales que el nuevo equipo gerencial luchará por conseguir.	War	BUSINESS STRATEGY AS MILITARY STRATEGY	Adveo (2015)
10	<i>hemos trazado una estrategia / afrontar con éxito los retos</i>	En nuestro plan para los próximos años, hemos trazado una estrategia clara para afrontar con éxito los retos de un entorno en transformació	War	BUSINESS STRATEGY AS MILITARY STRATEGY	Gamesa (2017, CEO)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
		n y convertirnos en el líder global del sector eólico.			
11	<i>estrategia eficaz para afrontarlos</i>	Tenemos desafíos y grandes oportunidades y hemos preparado una estrategia eficaz para afrontarlos.	War	BUSINESS STRATEGY AS MILITARY STRATEGY	FCC (2016, CEO)
12	<i>dar respuesta a los nuevos retos del mercado</i>	(...) con esta alianza aspiramos a dar respuesta a los nuevos retos del mercado.	War	BUSINESS STRATEGY AS MILITARY STRATEGY	Adveo (2017, CEO)
13	<i>refuerzo de nuestra posición estratégica</i>	En paralelo se ha dado mandato a Rothschild tanto para el refuerzo de nuestra posición estratégica, mediante cualquier mecanismo que fortalezca la solvencia y facilite el crecimiento futuro (...).	War	A COMPANY IS AN ARMY	Duro Felguera (2016)
14	<i>posición inmejorable para abordar los retos</i>	Por todo ello, FCC es hoy mucho más fuerte que nunca y disponemos de una posición	War	A COMPANY IS AN ARMY	FCC (2016)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
		inmejorable para abordar los retos que nos deparen los nuevos tiempos.			
15	<i>debilidad financiera</i>	Esta falta de avales y de liquidez, unida a la debilidad financiera, ha dificultado enormemente la contratación de nuevos proyectos.	Health	A COMPANY / BUSINESS IS A PATIENT	Duro Felguera (2017)
16	<i>progresivo deterioro de nuestra posición de tesorería</i>	Estas circunstancias han provocado un progresivo deterioro de nuestra posición de tesorería (...).	Health	A COMPANY / BUSINESS IS A PATIENT	Duro Felguera (2016)
17	<i>empeoramiento gradual de la situación financiera</i>	Los resultados negativos en varios proyectos provocaron un empeoramiento o gradual de la situación financiera.	Health	A COMPANY / BUSINESS IS A PATIENT	Duro Felguera (2017)
18	<i>parálisis de las inversiones</i>	(...) un año complejo que ha transcurrido en un contexto difícil de mercado por tercer año consecutivo como consecuencia de la	Health	A COMPANY / BUSINESS IS A PATIENT	Tubacex (2017)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
		continuación de la parálisis de las inversiones en el sector.			
19	<i>cuenta de resultados más sana</i>	Este tipo de decisiones (...) nos provee de una cuenta de resultados mucho más sana.	Health	BUSINESS AS HEALTH	Deoleo (2015)
20	<i>diagnósticos para mitigarla</i>	Asumimos que el mercado de abasto del aceite de oliva está sujeto a una fuerte volatilidad y hemos establecido los oportunos diagnósticos para mitigarla.	Health	COMPANY MANAGERS AS DOCTORS	Deoleo (2015)
21	<i>inyección de fondos / recuperación de la estabilidad</i>	Esta nueva inyección de fondos permitió una recuperación de la estabilidad y solidez para continuar con el crecimiento del Grupo.	Health	COMPANY MANAGERS AS DOCTORS	FCC (2016)
22	<i>test de deterioro</i>	Así, hemos realizado, con la ayuda de un asesor externo de alto prestigio, PWC, un test de deterioro.	Health	COMPANY MANAGERS AS DOCTORS	Deoleo (2016)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
23	<i>pleno saneamiento de la compañía</i>	La contención del gasto debe seguir siendo un pilar de gestión ineludible en el Grupo FCC para lograr el pleno saneamiento de la compañía...	Health	COMPANY MANAGERS AS DOCTORS	FCC (2016)
24	<i>mejoría del 35%</i>	Se ha conseguido cerrar el ejercicio con un EBITDA recurrente positivo, obteniendo una mejoría del 35% respecto al mismo periodo del ejercicio anterior.	Health	A COMPANY / BUSINESS IS A RECOVERING PATIENT	Adolfo Domínguez (2014)
25	<i>los resultados mejoraron</i>	Las medidas adoptadas fueron satisfactorias y los resultados mejoraron en el segundo semestre de 2017.	Health	A COMPANY / BUSINESS IS A RECOVERING PATIENT	Almirall (2017)
26	<i>clara recuperación en todas las magnitudes</i>	(...) fruto de esta y del resto de medidas, se comienza a observar una clara recuperación en todas las magnitudes de	Health	A COMPANY / BUSINESS IS A RECOVERING PATIENT	INYPESA (2014)

No.	Key metaphorical expression	Source text (Spanish)	Domain	Conceptual metaphor	Company (year)
		la Sociedad, lo que permite afrontar el ejercicio 2015 con renovadas expectativas (...).			

Note. All source items are drawn from shareholder letters in Spanish annual reports (2014–2017). Conceptual domain classification follows Vargas-Sierra and Moreno-Sandoval (2021). Key metaphorical expressions are italicised in the second column. War- and health-domain items account for 21 of the 26 source phrases; the remaining 5 items instantiate adjacent figurative domains (nautical, architectural, personification, and stage) retained for their relevance to institutional financial framing.

Colour coding: yellow = War domain; green = Health domain; grey = other adjacent domains.