



COGNITIVE RESEARCH IN PEDAGOGY: CONCEPTUAL METAPHOR IN CLIL-ECONOMICS

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Abstract. The paper analyses a prominent topic of current research into implementing cognitive findings in pedagogy. The study pursues a threefold purpose. It aims to review research literature on the instructional application of cognitive research in general and Conceptual Metaphor Theory (CMT) in particular. Conceptual metaphor investigation is a broad strand of cognitive research that has promised to discover new insights in methodological approaches applicable to different specialist subjects including economics known for ubiquitous use of metaphors. The second focus of this study is to review research papers on the use of cognitive findings including Conceptual Metaphor Theory (CMT) in Content and Language Integrated Learning (CLIL) which names cognition as one of its key components indispensable for content and language coordination. The paper aims to ascertain whether conceptual metaphor research plays any role in CLIL pedagogy and whether the pedagogical potential of language and theory-constitutive metaphors is used in CLIL-economics instruction. This study finds that conceptual metaphor as a property of both language and thought ensuring the convergence of learning economic language and content has not yet been translated to CLIL practice despite its great potential. Thirdly, the paper looks into the pedagogical implications of CMT findings in CLIL-economics. The paper argues that conceptual metaphor agrees with the tenets of integrated economic language and content learning. A cognitive interface between metaphor-based economic language and content which ensures their integration in CLIL methodology is postulated. Some steps in applying a metaphor-based approach in CLIL-economics are suggested.

Keywords: cognitive linguistics, conceptual metaphor, CLIL, economic metaphor, economic subject, metaphor-based instruction

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КОГНИТИВНЫЕ ИССЛЕДОВАНИЯ В ПЕДАГОГИКЕ: КОНЦЕПТУАЛЬНАЯ МЕТАФОРА В ПРЕДМЕТНО-ЯЗЫКОВОМ ИНТЕГРИРОВАННОМ ОБУЧЕНИИ СТУДЕНТОВ-ЭКОНОМИСТОВ

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Аннотация. Статья посвящена актуальному направлению современных исследований в русле использования достижений когнитивной лингвистики в педагогике. Данная работа преследует триединую цель. Во-первых, провести обзор научной литературы, посвящённой применению в педагогике когнитивных исследований и теории концептуальной метафоры (СМТ), в частности, так как изучение концептуальной метафоры – это широкое направление когнитивистики, которое обещает открыть новые подходы в методологии преподавания и изучения различных предметных областей и профессиональных дискурсов, включая экономику, известную широким использованием научных метафор. Во-вторых, ставится задача сделать обзор научных публикаций, посвящённых использованию достижений когнитивной науки и теории концептуальной метафоры при осуществлении предметно-языкового интегрированного обучения (CLIL), в рамках которого познание/когниция признаётся одним из ключевых компонентов, необходимых для координации предметного и языкового содержания обучения. Цель статьи на этом этапе состоит в том, чтобы выяснить, играют ли исследования концептуальной метафоры какую-либо роль в практике предметно-языкового интегрированного обучения и используется ли педагогический потенциал метафоры как средства создания новых экономических теорий и понятий и их вербализации. В-третьих, в статье делается попытка аргументировать важную роль концептуальной метафоры в интегрированном изучении английского языка и предмета экономики. Исследование показывает, что концептуальная метафора как свойство языка и мышления обеспечивает совпадение когнитивных механизмов изучения этих дисциплин. Однако приём обучения на основе метафоры ещё не нашёл достаточного применения в практике предметно-языкового интегрированного обучения. В работе постулируется наличие когнитивного интерфейса между экономическим языком и содержанием, который обеспечивает их интеграцию в процессе предметно-языкового обучения. Предлагаются некоторые пути использования концептуальной метафоры и её моделей при предметно-языковом интегрированном обучении английскому языку и экономике.

Ключевые слова: когнитивная лингвистика, концептуальная метафора, предметно-языковое интегрированное обучение экономике и английскому языку, метафора как приём обучения

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1. Introduction

Cognitive linguistics is considered a fruitful framework for different areas of second/foreign language (S/FL) acquisition [37], [9], [10], [7], [8], [25] and subject content learning/teaching [4], [31], [34]. Based on the recognition of its benefits, CLIL theorists also expect further investigations in CLIL to depend on cognitive research findings and note that there are “efforts to bring cognitive science and education together in dialogue” [41, p. 77]. CL is instrumental in explaining the role of the cognitive processes of content and language integration in the construction of knowledge [51].

Content and Language Integrated Learning (CLIL) is the study of a certain subject through a foreign language [14], [41]. Hence the combination of the content and the language serve as a learning medium. Though CLIL is supposed to be a dual-focused approach, many instructors admit that, in fact, subject-specific content comes to the fore to the detriment of language. Cognitive findings prompt that a more language-led approach in CLIL can reinforce the learning process by making it more meaningful and learners more content aware. Figurative language is one of cognitive research numerous foci [47]. Conceptual metaphor – a cognitive mechanism underlying both linguistic meanings and numerous subject specific concepts – agrees with CLIL tenets. So, incorporating conceptual metaphor awareness in CLIL instruction should gain greater topicality.

Conceptual Metaphor Theory (CMT) [29] argues that metaphor is a property of concepts rather than words, that it has an explanatory function and that it is a process of human thought and reasoning. CMT application to pedagogy is a noticeable strand in CL-oriented instructional research [38], [39], [53], [8], [40], [48] and the study of specialist discourses. Among other discourses, metaphors are particularly abundant in economic discourse. More than that, they are not only ubiquitous but also systemic in this discourse type [33], [34], [22], [23], [31].

Though importance is attributed to metaphor-oriented instruction, most scholars note that this line of research has not reached mainstream practice and is still regarded as something marginal in textbooks for English as S/FL [40]. Neither does metaphor feature in the descriptors established for the Common European Framework of Reference for Languages though, as shown by Littlemore and Low [38], it plays an important role in all aspects of communicative competence.

As for the CLIL model, despite its solid theoretical underpinning, there is still a wide gap in CLIL methodology of language learning [32], [17], in practices of learning specialist domains and sciences [19], [45] especially at university level [21], [46]. The CLIL pedagogical approach with its principle of content learning through a foreign language [14], [41] is now expected to be further advanced and the gap to be bridged by the application of the latest findings in cognitive science research [13]. The need to raise metaphor awareness in CLIL is stressed by Piquer-Píriz and Alejo-González [47]. However, a metaphor-focused cognitive approach has been taken only in very few CLIL studies [6], [1] and is undoubtedly under-researched. The fact that conceptual metaphor-based approach has not been so far widely implemented in CLIL pedagogy makes this angle of research an area of major interest.

This study suggests that a cognitive stance towards CLIL-economics with a focus on conceptual metaphor has a great potential for classroom practice. The purpose of this research is to analyse the state of knowledge on cognitive, in particular conceptual metaphor research in pedagogy in general and in CLIL instruction in particular. As conceptual metaphor underlies both economic language and content, review of research literature on CMT finding in CLIL-economics is carried out. As another focus, this study attempts to throw light on the relevance of conceptual metaphor cognitive mechanism to the process of economic language and subject acquisition because metaphoric language and metaphoric thought/reasoning are integrated in creating economic knowledge.

In this regard, we set a goal to analyse research literature on cognitive and CMT research pedagogical application as our first research objective. The second one is to review publications on the use of cognitive findings including Conceptual Metaphor Theory (CMT) in Content and Language Integrated Learning (CLIL) pedagogical approach which names cognition as one of its key components indispensable for content and language coordination. The paper aims to ascertain whether conceptual metaphor research plays

any role in CLIL pedagogy and whether the pedagogical potential of language and theory-constitutive metaphors is used in CLIL-economics instruction. The paper also looks into the pedagogical implications of conceptual metaphor in CLIL-economics. Its third research objective is to postulate an interface the cognitive mechanism of conceptual metaphor provides between economic language and content, which makes metaphor-based approach relevant to CLIL-economics instruction.

This study is designed in three phases preceded by the description of its research methods. In the first and second phases, research literature on the application of CL and CMT findings to pedagogy in general and to CLIL and CLIL-economics pedagogy is reviewed. The third stage explains the role of metaphor in language and content integration in CLIL context and suggests some steps in applying a metaphor-based approach in CLIL-economics.

2. Methodology

Three initial literature corpora for analysis were compiled in CLIL pedagogy, CMT in CLIL pedagogy and metaphor in economic discourse, including the latest works by prominent researchers in the corresponding fields. Research papers in these fields were retrieved from Google databases using the search terms “Cognitive Linguistics in S/FL learning”, “CLIL-related bibliography”, “cognitive linguistics in CLIL”, “metaphor in CLIL”, “economic metaphors”. Still other research literature comes from the author’s previous research on the CLIL model, conceptual metaphor in economic discourse and ESP economics [2], [3]. The final corpus of research materials for consideration had a functional perspective to serve the purpose of this research and included 62 manuscripts.

3. Literature Review

3.1. Pedagogical application of CL and CMT

This study takes a cognitive stance on pedagogy. Cognitive findings are believed to be consistent with instruction, which is proved by the appearance of a practice-oriented direction in cognitive research called Applied Cognitive Linguistics (ACL) concerned with acquisitional and pedagogical implications of cognitive science in S/FL teaching/learning [50]. The advocates of this approach suggest that construal, prototypicality, categorization, embodiment, metaphor/metonymy, language awareness are the cognitive operations or mechanisms that are relevant to didactic application to S/FL learning [35], [36], [50], [25].

As it emerges from the reviewed materials, cognitive research findings are applied to S/FL learning to improve its efficiency and overcome pedagogical problems that hinder it. Cognitive research helps to understand general mechanisms of learning [62], acquire/develop language competencies or abilities [38], [40], [3], enhance techniques of S/FL learning [37], overcome cross-cultural differences, cultural interference and cross-language negative transfer [5], etc. CMT as a part of cognitive research has also been instrumental in pedagogy. Instructional application of conceptual metaphor has a particularly solid theoretical foundation in general aspects of S/FL teaching/learning. Metaphor’s cognitive potential was widely studied in acquiring vocabulary [7], [8], [9], [10], grammar [30], improving translation skills [55], intercultural communication skills [26] and understanding discourse [12], [56], [57], etc. Whichever the application of conceptual metaphor research, each of them benefits learning by enhancing meaning processing, construction and acquisition, memory retention, improving the understanding of discourse.

Researchers have also identified the benefits of a cognitive approach to teaching/learning specialised varieties of English, which corroborates our suggestion of the potency of pedagogical application of conceptual metaphor research in acquiring language and subject skills in the economic domain. Reif [52] suggests discovering the cognitive mechanisms underlying the scientific phenomenon under study and building on these mechanisms. A really effective approach to teaching/learning specialist or academic discourse should aim at a better understanding of the underlying human scientific thought processes and knowledge acquisition processes in a particular scientific domain [53], [54]. Dalton-Puffer [18] argues that subject content is learned through language when cognitive processes involving subject-specific facts, concepts and categories are verbalised in recurring and patterned ways throughout the learning of a

particular subject. The scholar calls for establishing “a zone of convergence between content and language pedagogies” [18, c. 216]. This idea accords with our hypothesis that there is an interface between replete with metaphors economic language and content and that teaching/learning methods should exploit the cognitive mechanisms of conceptual metaphor to foster both specialised language and subject learning.

Common to some specialist/scientific domains and discourses is the language and theory forming function of metaphor. Metaphor’s centrality to many discourse types is supported by our literature review showing that metaphorical conceptualisation is linked to specialist discourse [24]. Among plentiful metaphor studies in a range of specialist domains and discourse types [43], [44], [57], [49], [26], metaphor use was widely studied in economic discourse, which encompasses science, academic and media varieties of economic writing and in which metaphor has a systemic function [22], [23]. Among its numerous functions, metaphor in economic discourse is used to define the scientific paradigms which to a great extent determine the scope of scientific reasoning and theoretical creativity [22], [23], [27], [11] as well as form economic theories [20]. Given its pervasiveness as well as ability to establish convergence between specialised content and language, metaphor use and its ‘operationalisation’ in academic discourse is strongly recommended [24] to make complex metaphorical scientific concepts accessible to learners.

Despite the fact that the latest findings in cognitive science and cognitive linguistics have been found promising in pedagogy, the gap in metaphor-based teaching methodology in specialist subjects is still to be filled [34], which has been corroborated by our literature analysis that has revealed only a few such studies in classroom setting. A translation approach and some types of tasks for raising metaphor awareness in a business English syllabus are suggested in Velasco-Sacristan [60], [61]. Muelas-Gil [42] points out metaphor’s instructional potential in the form of an organized corpus of conventional for the discourse in question metaphors. Littlemore and Low [38] show ways to develop metaphorical competence. Scholars also stress the explanatory and heuristic value of conceptual metaphor in scientific discourse contributing to students’ understanding of scientific concepts and their ambiguous conceptual mappings. It is stressed that elucidating economic metaphors can become a relevant way of approaching students with complex economic concepts [4], [31].

Though far from being thoroughly studied, metaphor as a cognitive instructional tool is gradually gaining ground in classroom practice.

3.2. CMT application to CLIL

CLIL is one of the latest pedagogical approaches. An important aspect of this model is its principle of content learning through a foreign language [14], [41]. Despite a solid theoretical underpinning, there is still a gap in CLIL methodology research [32], [17] in particular in classroom practices of learning science [19], [45] at university level [21], [46]. The CLIL pedagogical model is expected to be further advanced and the gap to be bridged by the application of the latest findings in cognitive science research [13].

Though further development of content and language integrated learning is thought to be enhanced by cognitive science findings and metaphor is found to be indispensable in the specialist and academic discourse, our literature review attests to a paucity of cognitive, including metaphor research implementation in CLIL instruction especially in science learning and specialist discourse at tertiary level, which resonates with other researchers’ opinion [46]. For example, in a volume summarising the ways of using metaphor in pedagogy [47] only one of the contributed studies [1] stresses the importance of incorporating a cognitive-linguistic perspective on CLIL but it does not give any theoretical substantiation of the relevance of using cognitive methods as a learning tool in CLIL classroom.

The same is true of CLIL-economics. Out of the sizable body of analysed publications only one deals with conceptual metaphor in CLIL-economics classroom. Birdsell [6] attests to the pedagogical potential of conceptual metaphor as a cognitive and linguistic mechanism which performs a theory-forming, explanatory and constructivist role in economic discourse. In the researcher’s opinion, metaphor awareness is instrumental in learning new economic metaphorical vocabulary and understanding economic content. Admitting that the understanding of metaphorical structures in a foreign language may be difficult, the scholar suggests making use of corpus examples and visual aids, such as cover images in the Economist. Analysis of language and visual multimodal metaphors is suggested as a teaching tool in

order to facilitate the comprehension of economic metaphors. However, no theoretical underpinning of metaphor's potency in acquiring both economic language and content is given. As for metaphor-based tasks, the scholar expresses his disappointment with their absence in the resource book of CLIL activities for teachers [15]. However, no examples of activities exploiting the instructional potential of metaphors in CLIL-economics classroom are given by the researcher, either.

In summary, metaphor's instructional potential as a cognitive process underlying both numerous subject-specific concepts and their verbalisation throughout the learning of the economic subject is greatly overlooked.

4. Pedagogical Implications of CMT in CLIL-economics

4.1. Metaphorical interface between economic language and content

The analysis of research literature on cognitive findings in pedagogy showed that scholars argue for an approach in CLIL teaching which is consistent with metaphor and figurative language research. This approach calls for a methodological justification. This part of our research is concerned with postulating a cognitive interface between metaphor-based economic vocabulary (subject-specific language) and metaphorical conceptualisation of economic concepts and theories (content) which facilitates language and subject acquisition in CLIL-economics classroom. For example, such economic metaphors as 'currency flow, liquid funds, to pump resources, finances drain', etc. represent the theory of money circulation in the economy; 'the demise/the birth of the company, a mature company', etc. represent the theory of 'the corporate life cycle'; 'competition for the contract, outpace/outcompete a rival, rat race', etc. reflect 'the competitive nature of economy' and perform a language and theory-constitutive function.

According to CLIL theory, learning a subject is not only about acquiring knowledge and skills, it is about learners constructing their own knowledge and skills. Acquiring subject knowledge is related to cognition: processing, understanding and remembering information, recognizing patterns, thinking and reasoning about the subject. To enable learners to construct the understanding of a subject, the linguistic, discourse and cultural features of its content should be explained to them. The research area at the intersection of cognition, linguistics, discourse studies and pedagogy is considered to be very promising for CLIL. Dalton-Puffer [16] finds strong affinity between cognitive skills and academic language and is sure that an explicit focus on linguistic means might enhance cognition. More than that, as a promising research direction, she suggests conceptualising language and curricular content not as separate entities but instead thinking of them as one process [17]. Since conceptual metaphor is not only ubiquitous but also systemic in economic discourse (both in language and theory formation) making it a focus of an integrated learning of economic language and content seems to be a promising research agenda. Littlemore and Low (2006a) think along the same lines and argue that "learners are likely to engage in metaphoric thinking more frequently than native speakers and that this active mental and social engagement can be harnessed to facilitate both understanding and learning" [38, c. 8].

Investigating the integration of content and language in chemistry and physics CLIL lessons Tarja Nikula also highlights the affinity between subject-specific language and content. She observes that various subjects have their specific 'cultures' ('subject-cultures') and their ways of using language. She makes a conclusion that subjects have their own 'languages' and calls for learning subject-specific language and subject-specific ways of constructing meaning in discourse [45]. In this regard, it can be argued that the 'culture' of the economic subject is formed by its specific highly metaphorical language and metaphorical way of conceptualizing numerous economic theories.

Our hypothesis of a metaphorical interface between economic language and theory formation is in accord with the economic metaphor linguistic and instructional research [33], [34], [53], [22], [42], as well as the CLIL pedagogical model research [45], [6], [48] which highlights the importance of metaphors as means of structuring economic discourse itself and as a vehicle of understanding and learning economic concepts and the ways of their linguistic expression. A better understanding of metaphorical networks in the language of economics opens "the first entry door into the field of economics" [53, c. 92].

Scientific knowledge is thought to be constructed by language and conceptual structures in academic and specialist domains. In economic discourse these are conventional metaphorical models, their networks and scenarios. That is why being aware of these conceptual structures and ways of their verbalization, being able to recognize and understand them helps to cope with standard problematic features of economic discourse and is essential for its understanding and acquisition. However, metaphor dual nature can be difficult to understand. As a result, CLIL theorists find it indispensable for teachers to elucidate the interrelationship between two domains by providing assistance or mediation in a comprehensible to learners way, which leads to higher content awareness [59].

Further in the article we present some ideas for establishing an interface between economic content and language in CLIL-economics classroom.

4.2. Metaphor-based approach in CLIL-economics

A metaphor-based approach in CLIL-economics can be viewed as a didactic approach that considers metaphorical cognitive mechanism to be a vehicle of acquiring economic language and content. Awareness of metaphorical conceptualization and core economic conceptual metaphors opens a way to “the language the learners need to access basic concepts and skills related to content” [14, c. 11]. To ensure a balanced focus on language and content in CLIL-economics lessons, it seems necessary to give closer attention to metaphorical language to facilitate the acquisition of content. This approach can become more effective if instruction is organized in a few steps (see Appendix):

1. Explanation and illustration of metaphor dual nature and mappings from a source domain into a target domain.
2. Making learners aware of common economic metaphorical models and their linguistic illustration.
3. Organising metaphors according to economic subtopics.
4. Establishing links between various metaphors (and their models) and the related concepts in a diagram which exemplifies how metaphors can be extended in different directions and create the whole metaphorical network which can structure both reasoning and discourse.
5. Exemplifying and elucidating a metaphor scenario in economic discourse stretches.
6. Illustrating metaphor networks which combine different metaphorical models in one stretch of economic discourse.
7. Elucidating the ‘off-line’ and ‘on-line’ nature of conceptual metaphor uses when conceptual metaphors can turn into contextual metaphors due to the factors of discourse [28].

Importantly, the suggested metaphor-based approach can play a pivotal role in CLIL-economics classroom only if teacher’s support for both content and foreign language acquisition is provided. This support is understood here as an instruction principle when learners are assisted during their learning process in identifying metaphors and their models and explicating the motivation of abundant figurative concepts and terms. The use of metaphor as a way to mediate and facilitate subject acquisition is similar to that of scaffolding. In scaffolding the teacher establishes analogy between a concrete and an abstract domain leveraging the structure of the concrete source domain to think about the target domain [58]. Using metaphor scaffolding as an instructional tool, teachers employ their own ‘outside’ metaphors which seem suitable for explaining a difficult concept. It is suggested here that economic discourse own metaphors created by theorists to verbalise their economic ideas require a similar approach and should be step by step explained to learners in classroom communication making economic concepts transparent to learners.

Teacher’s support in processing conceptual metaphor is also indispensable in structuring learners’ cognitive activity and enabling them to become more independent in their attempts to identify and understand their own metaphorical thinking processes [38]. Unless students become aware of the metaphorical networks formed by theory-constitutive metaphors, economic language and content can hardly be integrated effectively. The suggested metaphor-based approach in CLIL-economics looks at metaphors as vehicles for the integrated learning of economic terms and understanding economic concepts because conceptual metaphor mechanism provides a cognitive interface between economic concepts, the reasoning behind them and their linguistic expression.

5. Conclusion

This paper gave a comprehensive review of modern research publications on the application of cognitive science and CMT findings in general pedagogy and CLIL pedagogy in particular. A paucity and a strong need for metaphor application in CLIL classroom practice was revealed. The study confirmed our hypothesis that conceptual metaphor is an effective instructional tool in CLIL context as it serves as an interface between verbalising and conceptualising economic language and content. The theoretical research as well as the suggested methodological metaphor-based approach verified our suggestion that making a focus on metaphorical language and metaphorical conceptualization, explaining the workings of economic metaphors in economic discourse, assisting learners in identifying and understanding metaphors, their networks and scenarios facilitate the acquisition of both relevant economic language and content thanks to metaphorical cognitive mechanism which underlies both. Cognitive and CMT findings as well as the suggested metaphor-based teaching approach can have positive implications for CLIL teacher assisted instruction. Creating an economic metaphor word bank, networks of economic topic-related metaphors and a system of metaphor mediation techniques for understanding both economic language and content can set an agenda for further conceptual metaphor research application in CLIL pedagogy.

Appendix

1. Metaphor dual nature and mappings from a source domain into a target domain, e.g.,

Source domain	Metaphor	Target economic domain
	Bull and bear – their actions are related metaphorically to the market movement.	Market conditions: whether a market is appreciating or depreciating in value.
A bull will thrust its horns up into the air.	→	Stock prices are rising.
A bear will swipe down.	→	Stocks are declining in value.

2. Common economic metaphorical models and their linguistic illustration, e.g.,

Biological metaphor	Mechanical metaphor
Economy is human beings The European Central Bank is only in its <i>infancy</i> . Mature market should not be mistaken for a stagnant market. The Korean economy is in great danger of becoming <i>an aging economy</i> . Bruised Indian economy to be <i>battered</i> further by coronavirus. The <i>heart</i> of global economy. The <i>backbone</i> of the economy, etc. Economy is animals The Tech <i>Dragon</i> Stumbles American companies are killing the <i>goose that lays the golden eggs</i> . Overcoming the 'White <i>Elephant</i> ' Syndrome in the Public and Private Sectors. That should generate <i>lion's</i> share of revenues. What Is a <i>Tiger</i> Economy? Economy is plants Established firms have rediscovered their appetite for <i>seed</i> funding. The <i>green shoots</i> of economy Branches of economy Unemployment has deep <i>roots</i> . Cross-border commerce has <i>flourished</i> , etc.	Economy is a machine, vehicle, equipment Low interest rates <i>spark</i> growth. Christmas cash keeps <i>the wheels of the economy oiled</i> . Get the economy <i>back on the road</i> . Speed up reforms Chinese economic <i>machine</i> is so voracious the price <i>mechanism</i> Farmers may find a <i>lever</i> to persuade supermarkets to stock more local produce Economy is a ship <i>Captains of economy</i> A manager at the <i>hilt</i> A <i>buoyant</i> company Small businesses keep <i>afloat</i> Suffer through the economic <i>storm</i> , etc. Economy is a train Get the British economy back on <i>track</i> . Economic rivalry must continue in full <i>steam</i> . The economy is going like a <i>train</i> .

3. Organising metaphors according to economic subtopics, e.g.,

Economic subtopic	Metaphors	Examples
Finance	Money is liquid	cash <i>flow</i> return on investment <i>inject</i> cash into the business cash <i>sloshes</i> around the world in unexpected ways
Product development	Product is a living organism	product <i>family</i> product <i>evolution</i> product <i>life</i> product <i>life-cycle</i> product <i>life expectancy</i>
Company organizational structure	Companies are buildings	hierarchical/flat <i>structure</i> <i>layers</i> of management <i>build</i> a company company <i>reconstruction</i> <i>glass ceiling</i>
Career and promotion	Career is a ladder Career is vertically oriented	career <i>ladder</i> <i>rungs</i> of a career <i>ladder</i> on the <i>first/lower rung</i> of a career a few <i>rungs above</i> <i>go up the career ladder</i> <i>top management</i>
M&A	Merger is a marriage	The two companies intend to go <i>down the aisle</i> . The <i>divorce</i> of the companies was announced. <i>unequal marriage</i> The alliance is a <i>marriage of convenience</i> .
Supply and demand. Budget. Risks. Trade.	Economy is a state of equilibrium	bank/credit/debit/trade <i>balance</i> They tried to <i>balance</i> the risks of the new strategy against the possible benefits. This year's profits will <i>balance out</i> previous losses. Supply and demand on the currency market will generally <i>balance</i> .
Economic situation/state of the market.	Economy is health and treatment	to <i>revive</i> the economy an <i>ailing</i> economy a <i>healthy</i> economy and increased consumer confidence an economy is <i>recovering</i> The economy is humming along at a <i>healthy</i> 4% pace.

4. Metaphor scenarios in economic discourse, e.g.,

(1) The first rule, as always, is do no harm

Global corporations have raised nearly \$2 trillion in public and private markets this year, a clear sign *the economy has begun to heal*.

This process shouldn't surprise investors any more than it would surprise a *critical-care doctor* that *the immune system* plays a key role in restoring *a patient's health*. As the chairman of an economic think tank and a *physician* respectively, we see a remarkable alignment between *treatment regimens for sick economies* and sick people. In both cases, it's important at some point to *let the patient's immune system* carry the load of *recovery*. *Overtreatment is bad medicine*. (The Wall Street Journal, 2019).

(2) M&A — is it a wedding or a marriage?

A successful corporate “marriage” is not about inking agreements; that is just the “wedding” for the acquirer to exercise its rights under contract. It is only when you start living with your “spouse” that you have to deal with their idiosyncrasies and unusual habits.

Be it domestic or cross-border deals, there will definitely be integration issues and challenges. Integration success starts by swiftly taking control of your investment to realise its deal value and “giving birth” to synergies, so it is important that you get it right from the start (The Edge, 2012).

5. Metaphor networks, e.g.,

(1) “Hitting the monetary *brakes* (*economy is a vehicle: vehicle parts*), though necessary, endangers growth. History suggests that the Fed finds it difficult to *cool* (*economy is a vehicle: engine overheating*) the jobs market without eventually *tipping* (*economy is a state of equilibrium: breaking equilibrium*) the economy into recession.” The Economist, 2022.

(2) “New investors have *flooded in* and, *buoyed* (*economy is element*) by pandemic stimulus, most have had an incredible *ride* (*economy is a vehicle*). But as policymakers *put the brakes on* (*economy is a vehicle*), global financial markets are starting to *wobble* (*economy is a person*)”. The Economist, 2022.

6. ‘Off-line’ and ‘on-line’ nature of conceptual metaphor, e.g.,

Covid-19 *unmasks* weakness of English economy (FT, 2020).

The political instability that used to mark Italy out has fully *infected* Britain. (The Economist, 2022).

The coronavirus *recession hit like a derailed train* (CBS News, 2021).

The American *economy is facing a plunge into uncharted waters*. THE NYT, 2020.

International Expansion in a *Quarantine Economy* (Economist, 2020).

7. Diagram of conceptual links between various metaphors and related concepts, e.g.,

economy is a machine/vehicle/car – *speed/temperature/overheating* – *problem/failure/breakdown/accident/crash* – *patient/treatment/recovery/fit and healthy* – *sports/competition/rivalry* – *war, etc.*

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