ADVANCES IN CONCEPTUAL BLENDING THEORY: PAST AND FUTURE

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Thirty years ago, Gilles Fauconnier and Mark Turner published a technical paper (Report 9401) with the Department of Cognitive Science, University of California, San Diego, entitled "Conceptual Projection and Middle Spaces" (Fauconnier & Turner 1994), aiming to describe "a fundamental and general cognitive process, running over many (conceivably all) cognitive phenomena, including categorization, the making of hypotheses, inference, the origin and combining of grammatical constructions, analogy, metaphor, and narrative". This theory went on to be developed most famously in their landmark book *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities* (Fauconnier & Turner 2002; see also Turner 2014).

As predicted, Conceptual Blending Theory (CBT) has gone on to impact numerous fields across the cognitive sciences and beyond over the past three decades, with applications as broad as rhetoric and ideology (Coulson 2006), creative solutions from mathematics to music (Eppe et. al 2018; Gómez Ramírez 2020), cognitive poetics (Hiraga 1999; Sweetser 2006, Freeman 2008, 2020), painting (Morley 2016), courtroom discourse (Pascual 2002), advertising (Joy et al. 2009), memes (Coulson 2022), possibility studies (Hanchett Hanson 2023), sound design (Melvin & Bridges 2024), neuroscience (Pagán Cánovas & Valenzuela 2014), and science education (Fredriksson & Pelger 2018) to name only a handful.

Closer to home, within cognitive linguistics, theorists have worked to understand relationships between CBT and related phenomena, prominently including grammar (F&T 1996), analogy (Fauconnier 2001, Hofstadter & Sander 2013), image schemas (Mandler & Pagán Cánovas 2014, Hedblom 2020), primary metaphor (Grady 2005), conceptual metaphor (Dancygier 2016), multimodal metaphor (Forceville 2024), polysemy (Fauconnier & Turner 2003), metonymy (Coulson & Oakley 2003), embodied cognition (Pelkey 2013, 2017), aesthetic cognition (Auchlin 2013, Freeman 2020, Pelkey 2022), creativity (Eppe et al. 2018), discourse (Oakley & Hougaard 2008), narrative viewpoint and stance (Dancygier 2011, Dancygier & Sweetser 2012), diagrammatic reasoning (Bourou et al. 2024), and many more.

In the process, numerous challenges and expansions to the theory have been proposed, most recently including the use of computational frameworks, artificial intelligence, and large language models to approximate conceptual integration and generate new blends (Eppe et al. 2018, Schorlemmer & Plaza 2021, Wang et al. 2023) in both linguistic and visual modalities (Ge & Parikh 2021). Elsewhere, biosemiotic and evolutionary implications of the theory that give attention to the gradient heritage and continuity of CBT with alloanimal cognition have barely begun to be developed (cf. Turner et al. 2020), but hold much promise for understanding relationships between advanced blending, the language capacity, interspecies communication, and the human singularity (following Fauconnier & Turner 2008, Turner 2014; cf. Glebkin 2015).

This theme session features papers that consolidate developments and applications of CBT over the past three decades while relating the theory to new possibilities.

References

Auchlin, Antoine. 2013. Prosodic iconicity and experiential blending. In Sylvie Hancil & Daniel Hirst (eds.), *Prosody and Iconicity* (Iconicity in Language and Literature), 1–32. John Benjamins Publishing Company. https://doi.org/10.1075/ill.13.01auc.

Bourou, Dimitra, Marco Schorlemmer & Enric Plaza. 2021. Image Schemas and Conceptual Blending in Diagrammatic Reasoning: The Case of Hasse Diagrams. In *Diagrammatic Representation and Inference: 12th International Conference, Diagrams 2021, Virtual, September 28–30, 2021, Proceedings*, 297–314. Berlin, Heidelberg: Springer-Verlag. https://doi.org/10.1007/978-3-030-86062-2_31.

Coulson, Seana. 2008. Conceptual blending in thought, rhetoric, and ideology. In Gitte Kristiansen, Michel Achard, René Dirven & Francisco J. Ruiz de Mendoza Ibáñez (eds.), *Cognitive Linguistics*, 187–210. De Gruyter Mouton. https://doi.org/10.1515/9783110197761.2.187.

Dancygier, Barbara. 2015. *The Language of Stories: A Cognitive Approach*. Reprint edition. Cambridge: Cambridge University Press.

Dancygier, Barbara. 2016. Figurativeness, conceptual metaphor, and blending. In *The Routledge Handbook of Metaphor and Language*. Routledge.

Dancygier, Barbara & Eve Sweetser (eds.). 2012. *Viewpoint in Language: A Multimodal Perspective*. 2 edition. Cambridge University Press.

Eppe, Manfred, Ewen Maclean, Roberto Confalonieri, Oliver Kutz, Marco Schorlemmer, Enric Plaza & Kai-Uwe Kühnberger. 2018. A computational framework for conceptual blending. *Artificial Intelligence* 256. 105–129. https://doi.org/10.1016/j.artint.2017.11.005.

Fauconnier, Gilles. 2001. Conceptual Blending and Analogy. In Dedre Gentner, Keith J. Holyoak & Boicho N. Kokinov (eds.), *The Analogical Mind: Perspectives from Cognitive Science*. MIT Press.

Fauconnier, Gilles and Mark Turner (1994). Conceptual projection and middle spaces. Report 9401. Department of Cognitive Science, University of California, San Diego.

Fauconnier, Gilles and Mark Turner (1996). Blending as a central process of grammar, in *Conceptual Structure, Discourse, and Language*. Edited by Adele Goldberg. Stanford: Center for the Study of Language and Information (CSLI), 113-129.

Fauconnier, Gilles & Mark Turner. 2002. *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. New York: Basic Books.

Fauconnier, Gilles & Mark Turner. 2008. The origin of language as a product of the evolution of modern cognition. In *Origin and Evolution of Languages: Approaches, Models, Paradigms*, 133–156. University of Toronto Press. https://doi.org/10.3138/9781845535537.007.

Forceville, Charles. 2024. Identifying and Interpreting Visual and Multimodal Metaphor in Commercials and Feature Films. *Metaphor and Symbol*. Routledge 39(1). 40–54. https://doi.org/10.1080/10926488.2023.2271544.

Freeman, Margaret H. 2020. *The Poem as Icon: A Study in Aesthetic Cognition*. Oxford: Oxford University Press.

Fredriksson, Alexandra & Susanne Pelger. 2020. Conceptual Blending Monitoring Students' Use of Metaphorical Concepts to Further the Learning of Science. *Research in Science Education* 50(3). 917–940. https://doi.org/10.1007/s11165-018-9717-8.

Ge, Songwei & Devi Parikh. 2021. Visual Conceptual Blending with Large-scale Language and Vision Models. arXiv. https://doi.org/10.48550/arXiv.2106.14127.

Glebkin, Vladimir. 2015. Is conceptual blending the key to the mystery of human evolution and cognition? *Cognitive Linguistics*. De Gruyter Mouton 26(1). 95–111. https://doi.org/10.1515/cog-2014-0067.

Gómez Ramírez, Danny A. J. 2020. Conceptual Blending in Mathematical Creation/Invention. In Danny A. J. Gómez Ramírez (ed.), *Artificial Mathematical Intelligence: Cognitive, (Meta)mathematical, Physical and Philosophical Foundations*, 109–131. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-50273-7_7.

Hanchett Hanson, Michael. 2023. Reality studies: Reflections on the possible and actual. *Possibility Studies & Society*. SAGE Publications 1(1–2). 87–98. https://doi.org/10.1177/27538699231162311.

Hedblom, Maria M. 2020. *Image Schemas and Concept Invention: Cognitive, Logical, and Linguistic Investigations*. 1st ed. 2020 edition. Cham, Switzerland: Springer.

Melvin, Adam & Brian Bridges. 2024. Cinematic crosstalk and psychotechnological spaces: Understanding the soundtrack's materiality, multimodality and embodiment through conceptual blending. In *The Routledge Handbook of Sound Design*. Focal Press.

Oakley, Todd & Anders Hougaard (eds.) 2008. *Mental Spaces in Discourse and Interaction.* Amsterdam: John Benjamins.

Pagán Cánovas, Cristóbal & Javier Valenzuela Manzanares. 2014. Conceptual mappings and neural reuse. *Frontiers in Human Neuroscience*. Frontiers 8. https://doi.org/10.3389/fnhum.2014.00261.

Pascual, Esther. 2002. *Imaginary Trialogues: Conceptual Blending and Fictive Interaction in Criminal Courts*. LOT: Netherlands Graduate School of Linguistics. https://www.lotpublications.nl/imaginary-trialogues-imaginary-trialogues. (20 November, 2024).

Pelkey, Jamin. 2013. Cognitive chiasmus: Embodied phenomenology in Dylan Thomas. *Journal of Literary Semantics* 42(1). 79–114.

Pelkey, Jamin. 2017. *The Semiotics of X: Chiasmus, Cognition, and Extreme Body Memory*. London: Bloomsbury Academic.

Pelkey, Jamin. 2022. Tonal iconicity and narrative transformation: Transverse embodied chiasmus in Sylvia Plath and Dolly Parton. In Sara Lenninger, Olga Fischer, Christina Ljungberg & Elżbieta Tabakowska (eds.), *Iconicity in Cognition and across Semiotic Systems* (Iconicity in Language and Literature), 135–152. Amsterdam: John Benjamins. https://doi.org/10.1075/ill.18.07pel.

Schorlemmer, Marco & Enric Plaza. 2021. A uniform model of computational conceptual blending. *Cognitive Systems Research* 65. 118–137. https://doi.org/10.1016/j.cogsys.2020.10.003.

Turner, Mark. 2014. *The Origin of Ideas: Blending, Creativity, and the Human Spark*. Oxford; New York: Oxford University Press.

Turner, Mark, Eric Leonardis, Arturs Semenuks, Seana Coulson, Jamin Pelkey, Ikuma Adachi & Deborah Forster. 2021. Conceptual Blending in Animal Cognition: A Comparative Approach. *Proceedings of the Annual Meeting of the Cognitive Science Society* 43(43).

Wang, Sitong, Savvas Petridis, Taeahn Kwon, Xiaojuan Ma & Lydia B Chilton. 2023. PopBlends: Strategies for Conceptual Blending with Large Language Models. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (CHI '23), 1–19. New York, NY, USA: Association for Computing Machinery. https://doi.org/10.1145/3544548.3580948.