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Introduction to the special issue on new approaches to figurative language research

Henri Olkonieni ^{a,b} and Ruth Filik ^c

^aDivision of Psychology, Faculty of Education and Psychology, University of Oulu, Oulu, Finland; ^bFaculty of Psychology and Speech-Language Pathology, University of Turku, Turku, Finland; ^cSchool of Psychology, University of Nottingham, Nottingham, England

ABSTRACT

The use and interpretation of figurative expressions (e.g., irony, idiom, and metaphor) is an integral part of everyday human communication. Thus, the ability to comprehend figurative language underpins successful communication and social functioning. Despite this, there is an ongoing debate regarding the fundamental cognitive and neural processes that support figurative language comprehension. In addition, relatively little is known regarding the additional challenges that can be faced in many situations, for example, when communicating in one's second language, or with partners from a different culture, or when integrating information across different modalities. The purpose of this special issue is to showcase some of the latest research in this area, utilizing state of the art methods to examine comprehension (e.g., eye-tracking and EEG) and investigating how certain factors, such as cultural and individual differences and multimodal stimuli affect the comprehension process.

Introduction

Understanding figurative language—such as irony, sarcasm, idioms, and metaphors—is traditionally thought to require extra processing effort when compared to the processing of literal expressions (Grice, 1975). However, accumulating evidence suggests that various context-, phrase-, and perceiver-related factors can affect the amount of effort interpreters need to invest in comprehending figurative expressions. Thus, it is not surprising that there is an ongoing debate regarding the fundamental processes that support figurative language comprehension. Contemporary research on figurative language utilizes state-of-the-art time-sensitive methods to examine comprehension (e.g., eye-tracking and EEG), and investigates how certain factors, such as cultural and individual differences, affect the comprehension process. This special issue showcases four novel studies examining different aspects of figurative language processing and interpretation, and presents two expert commentaries that contextualize these studies within the current and historical literature. We will start by providing a more detailed overview of the contents.

Studies

Eye-tracking is a methodology that allows detailed analysis of the time-course of processing of text without posing extra task-related demands on the reader (Rayner, 2009). The use of this methodology was first introduced into figurative language research in the mid-1980s in the seminal paper by Inhoff et al. (1984), who studied contextual effects on metaphor comprehension. Despite this relatively early adoption, the use of eye-tracking methodology to examine nonliteral language processing has shown

CONTACT Henri Olkonieni  henri.olkoniemi@oulu.fi  University of Oulu, P.O. Box 2000, Oulu 90014, Finland.

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a dramatic increase only within the past 14 years, and it has proven to be a fruitful method for studying the cognitive mechanisms underlying figurative language comprehension. In this special issue, papers by Olkonieni et al. ([this issue](#)) and Senaldi and Titone ([this issue](#)) make use of eye-tracking to further advance our knowledge of the processing of irony, and idioms.

Eye-tracking studies have shown that readers often re-read ironic phrases and the context in which they appear in order to resolve the meaning of written irony. However, recent theories of irony processing suggest that the ease of resolving the ironic meaning depends on various perceiver-related factors, such as working memory capacity (e.g., Fabry, 2021; see, also, Olkonieni & Kaakinen, 2021, for a review of the empirical evidence). Moreover, many previous studies have relied on traditional eye-movement measures, that focus on processing of a target phrase or a specific word(s) within the phrase (Olkonieni & Kaakinen, 2021). However, these measures cannot fully capture the variability in the way different readers inspect written text. In their paper, Olkonieni et al. ([this issue](#)) break from that tradition. They combined two of their previous datasets ($N = 120$) and reanalyzed them using scanpath analysis to study how individual differences in working memory capacity affect processing of irony at the whole text level. Scanpath analysis is a promising new measure, which has previously been used to study individual differences in processing syntactically ambiguous sentences (e.g., Von der Malsburg & Vasishth, 2013). Olkonieni et al. identified three different reading strategies and showed that the processing of irony is relatively fast and linear at the whole text level. Moreover, they showed that this effect was modulated by working memory, with high working memory capacity being related to more flexibility in changing reading patterns. Their results give a new insight into the role of working memory in irony processing and demonstrate the value of the scanpath methodology for analyzing eye-movement data to study figurative language processing.

Idioms, such as “spill the beans” (i.e., reveal the secret), are a commonly used form of figurative language and their meaning depends on the context in which they appear. Senaldi and Titone ([this issue](#)) used eye-tracking to examine how first (L1) and second language (L2) readers process idioms in contexts supporting an idiomatic or literal interpretation, and how familiarity of the idiom affects processing. This is an important topic as over half of the world’s population speaks more than one language (e.g., Bialystok et al., 2012), and many people live and work in environments in which the non-native language needs to be used. Operating in one’s second language may be challenging in general but comes with specific costs when figurative language is used (Kim & Lantolf, 2018; Littlemore et al., 2011).

Senaldi and Titone ([this issue](#)) showed that in total reading times, L1 readers were faster to read idioms in idiom-biasing than literal-biasing contexts when the idiom was familiar, but slower when the idiom was less familiar. L2 readers also showed shorter reading times for more familiar idiomatic phrases, but in contrast to L1 readers, the context did not play a role in processing. They interpret these findings as indicating that L1 readers use both direct retrieval and compositional processing when resolving the intended meaning of idioms, depending on the idiom familiarity. In contrast, L2 readers would mostly use a compositional strategy. They conclude that these findings support the *hybrid processing hypothesis* of idiom processing (Libben & Titone, 2008). In addition to the clear value of their results, as Katz ([this issue](#)) points out in his commentary, Senaldi and Titone also provide an excellent review of the idiom literature from the last 20 years.

To date, most research into figurative language comprehension has investigated the processing and interpretation of verbal stimuli, predominantly examining written text, with some studies examining spoken materials. However, in real life, there are also many instances in which we encounter figurative language in a multi-modal setting (e.g., advertising, political cartoons), where perceivers must successfully integrate verbal and pictorial information to establish meaning. In a novel and innovative event-related potentials (ERP) study, Bambini et al. ([this issue](#)) examined the electrical brain activity elicited by verbal and multimodal metaphors. One key advantage of this technique is that it allows for relatively fine-grained distinctions to be made regarding the time-course of processing, from which inferences can be made about different underlying mechanisms involved in the processing of metaphorical versus literal stimuli.

In their experiment, participants were sequentially presented with stimulus pairs (metaphorical or literal), which were either both words (in the verbal condition) or a word followed by a picture (in the multimodal condition). Compared to their literal counterparts, both verbal and pictorial metaphors elicited an N400 effect, suggesting that both verbal and multimodal metaphors required more processing effort to establish meaning—exerting similar demands on initial semantic integration processes. However, topographical differences, with more posterior effects for verbal and more anterior effects for pictorial stimuli, suggest at least some non-overlapping modality-specific effects during these early stages of processing.

Crucially, differences were observed between verbal and multimodal conditions later in the ERP record. Specifically, following the N400, pictorial stimuli additionally elicited a more pronounced negativity compared to literal controls, suggesting a more drawn-out meaning elaboration process underlying the comprehension of multimodal metaphors. The collection of a variety of off-line sources of data in addition to the ERP data allowed Bambini et al. to further elucidate the nature of this elaboration. Specifically, through collecting information regarding the number of possible interpretations as well as the strength of these interpretations, they were able to discover a relationship between the “closedness” (i.e., lower number of possible interpretations), strength of interpretation, and magnitude of the later negativity for pictorial metaphors. That is, prolonged elaboration processes (as reflected by the later negativity) may be required in cases where successfully integrating the two modalities necessitates arriving at a relatively complex and closed interpretation. Bambini et al.’s findings provide a novel contribution to knowledge of how we process more complex multi-modal figurative expressions, as well as raising questions regarding their use in communicative campaigns where clarity and ease of interpretation may be key.

While figurative language processing and interpretation has been investigated in many languages (e.g., English, French, German, Italian, Finnish, Japanese, Hebrew, Polish, and more), relatively few studies to date have made comparisons across different languages and cultures. In their paper, Zhu and Filik ([this issue](#)) examine the interpretation of sarcasm in participants in both the UK and China. Differences in social structure across these two nations, as well as previous research suggesting cultural differences in humor use and interpretation, formed the basis for the notion that there may be cultural differences in sarcasm interpretation as well—particularly when produced and received by interlocutors of differing social status. Capitalizing on lessons learned during the explosion in online data collection during the pandemic, Zhu and Filik used online surveys to allow for the collection of data from large samples of participants in both countries (200 participants in each).

Specifically, participants in the United Kingdom and China were presented with scenarios which ended with a sarcastic or non-sarcastic critical comment. The speaker of the comment had either higher, lower, or equal social status to the recipient. The participants’ task was to rate the comment for degree of sarcasm, amusement, aggression, and politeness. Results revealed striking cultural differences regarding how sarcasm is perceived—specifically, whereas participants from the United Kingdom regarded sarcasm as a more polite and less aggressive way of conveying criticism, participants in China viewed sarcastic criticism as being more aggressive than criticism conveyed literally (see, also, Zhu & Filik, 2023). While there were notable differences, cultural similarities should not be ignored—with participants from both countries finding sarcastic comments more amusing than literal criticism (however, this difference was smaller for Chinese participants).

There were also differences in social status effects across the two cultures. Specifically, whereas critical comments uttered by speakers with higher social status were viewed more positively by participants in China, such comments were viewed less favorably by participants in the United Kingdom. Thus, a complex interaction of social and cultural considerations may come into play when determining the socio-emotional impact of figurative language (see Filik, 2023, for further discussion). These findings not only have implications for theoretical accounts, which tend to overlook individual and group differences in interpretive processes, but also highlight practical considerations for successful intercultural communication.

Commentaries

The special issue is wrapped up with two insightful commentaries, written by eminent researchers with differing fields of expertise. The first commentary is written by Albert Katz, who has been an influential figure in the field of figurative language research for a number of decades. He provides a commentary which neatly contextualizes the current work within the issues raised in the last 50 years of figurative language research—noting the challenges that have been addressed, and those which remain (Katz, [this issue](#)).

The second commentary is written by Heather Ferguson, who is an influential researcher in the field of social cognition. She contextualizes the papers from this special issue within current topics in the field of social communication, considering domains such as power and social status, cultural norms, and technology-based communication (Ferguson, [this issue](#)). She also takes a broader consideration of methodological approaches to studying these contemporary issues. Both commentaries neatly outline the contribution of the articles in this special issue to these current debates, as well as highlighting important future questions for researchers in the field.

Conclusions

We are pleased to have gathered for you this special issue showcasing new approaches to figurative language research. Together, these papers provide a snapshot of cutting-edge work being conducted by labs around the world in this area, alongside two excellent commentaries providing further food for thought. We hope that the both the figurative language community and community studying text and discourse more broadly will find this special issue to be an informative and useful collection of articles.

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ORCID

Henri Olkonieni  <http://orcid.org/0000-0001-6915-089X>

Ruth Filik  <http://orcid.org/0000-0001-9022-8364>

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