

The interplay between language and emotion: Introduction to the special issue

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Abstract

This special issue provides an overview of recent developments in the relationship between language and emotion. It includes a theoretical paper reviewing the extensive empirical evidence of this relationship, as well as 25 empirical studies. The studies address topics related to the conveyance of emotional content by language, focusing on semantics and speech sounds; the impact of emotion on language processing, from words to sentences; and the influence of language in the perception, experience and regulation of emotions throughout life. The findings highlight several modulatory factors, primarily relating to the affective and non-affective properties of verbal information, as well as some inter-individual differences. The conclusion is that all these factors must be considered to achieve a comprehensive understanding of the complex relationship between language and emotion.

Keywords: Language, emotion, language-emotion interplay, psycholinguistics, affective science.

Introduction

The relationship between language and emotion is complex and intertwined. Not only does language communicate emotions, it also plays a role in shaping, experiencing and regulating them. Interest in this topic has grown in recent years, following a period of neglect. There now appears to be a consensus regarding the mutual influence of language and emotion. Since the beginning of the 21st century, significant progress has been made in various areas of research focusing on this relationship. It is well established that language influences emotional development from an early age (Ponari et al., 2020; Sabater et al., 2023) and that infants with greater language skills are better at identifying emotions (Nook et al., 2017; Ruba et al., 2021). Furthermore, it has been demonstrated that emotions are understood in a fundamentally similar manner across cultures, although some differences in emotional interpretation have been observed (Jackson et al., 2019). Furthermore, speaking a non-native language can lead to a feeling of emotional detachment, often referred to as the 'foreign language effect' (Aguilar et al., 2024; Cadwell-Harris, 2014). Moreover, clinical research has shown that individuals with developmental language disorder, aphasia, or autism language disorder have difficulty understanding and expressing emotions verbally (Martinez-Tomás et al., 2025).

One area of research builds on the long tradition of psycholinguistic and neurolinguistic studies. There is now a substantial body of evidence showing that emotional content affects all levels of linguistic representation, including phonology, grammar, semantics, and pragmatics. For example, certain phonemes appear to be overrepresented in emotional words, suggesting a non-arbitrary relationship between form and meaning that conveys emotions through language (Adelman et al., 2018; de Zubizaray & Hinojosa, 2024). Some morphological features, such as diminution or

augmentation, express emotion (Hinojosa et al., 2022) or delay the recognition of compound words containing negative morphemes (Kuperman, 2013). Furthermore, emotional content influences the establishment of agreement dependencies between the elements of a sentence (Fraga et al., 2021; Poch et al., 2023). Emotional experiences also seem to play a key role in the representation of abstract concepts (Vigliocco et al., 2014) and words linked by colexification patterns appear to capture similar affective meanings (Di Natale et al., 2021). Recent developments in this area highlight the importance of moving beyond these topics to address questions such as how speakers formulate utterances to elicit intended emotional responses in others and how incoming messages prompt emotions and inferences about others' feelings (van Berkum, 2019, 2020). Nevertheless, more work is needed to incorporate the effects of emotion into theories of language processing.

Another area of research has focused on examining the influence of language on emotion processing. This perspective provides evidence for the role of language in acquiring, experiencing, understanding and regulating emotions. Language gives children an additional means of communicating their needs and of understanding their own and others' emotions. For example, infants with higher language abilities are better at regulating their emotions when frustrated (Fields-Olivieri et al., 2024; Pemberton-Roben et al., 2012). This link between language and emotional reappraisal also exists in adults, who reduce their use of first-person pronouns to create psychological distance from negative feelings (Holmes et al., 2024; Nook et al., 2020). Additionally, affect labelling, a form of implicit emotion regulation, has been shown to increase positive feelings when naming positive events (Vlasenko et al., 2021) and reduce negative feelings when naming negative events (Niles et al., 2015). Furthermore, the effects of language have also been observed during the acquisition of affective conditioned

responses, such as fear acquisition (García-Palacios et al., 2018) and generalisation gradients (Alcalá et al., 2024). Some mainstream theories of emotions, such as those based on affective dimensions (Russell, 2003), primary emotions (Ekman, 1992; Izard, 2007), or appraisal (Scherer & Moors, 2019), have not considered language extensively. However, some isolated attempts have revealed that appraisal features in the conceptual organisation of emotion words drive other response components of emotions, in line with the predictions of componential appraisal models (Scherer & Fontaine, 2019). Notably, constructivist approaches to emotions claim that language provides people with the conceptual knowledge necessary for constructing emotional experiences, playing a pivotal role in shaping how they understand and perceive emotions (Lindquist et al., 2015).

This collection showcases the wide range of topics currently being investigated by researchers interested in the relationship between emotion and language. The special issue opens with a theoretical article that reviews previous work on the interplay between language and emotion, providing empirical evidence of the bidirectional nature of this relationship. It also discusses how current data informs theoretical accounts in the fields of affective science and linguistics (Ferré et al., 2025). Subsequently, the empirical studies are divided into three sections. The first section focuses on emotional content and the distinct aspects of language that convey emotion. The second section presents research on the impact of emotions on language processing, from words to sentences. The third section provides empirical evidence of how language influences the perception, experience and regulation of emotions throughout life, from infancy to adulthood. We hope that this wide range of studies, which address various current topics from different disciplinary and methodological perspectives, will appeal to both

language researchers interested in emotion and emotion researchers interested in language.

Emotional content in language

Emotion is conveyed through all aspects of language (Majid, 2012). The ten papers included in this section address some of these aspects. Four of the studies focus on semantics and the emotionality conveyed by the meaning of words and expressions. The remaining six articles address various issues related to speech sounds.

Papers dealing with semantics and the emotional meaning of words rely on the dimensional approach, describing it in terms of general dimensions such as valence and arousal (Russell, 2003). Rocabado and Duñabeitia (2024) tested whether simulated weather conditions (sunny vs. rainy) affect the emotional perception of words. Participants rated the valence of a set of words in a virtual reality setting. Although simulated weather affected response times, which were longer in the rainy condition than in the sunny condition, it did not impact valence ratings. These results contrast with previous evidence of contextual effects on the affective assessment of words (e.g. Planchuelo et al., 2022), suggesting that modulation of emotional evaluations by contextual factors is complex and depends on the specific factor under investigation (Behnke et al., 2021).

Both Muraki and Pexman (2024) and Martínez-Huertas et al. (2023) addressed the acquisition of emotional meaning using different approaches. Muraki and Pexman (2024) examined the predictive capacity of various factors on the age of acquisition of words, i.e. ratings collected from adult speakers regarding the age at which they believe they acquired a word (Kuperman et al. 2012). The study focused on valence and two dimensions of sensorimotor experience: concreteness (the extent to which a word's

meaning can be experienced through the senses; Brysbaert et al., 2014) and embodiment (the extent to which a word's meaning involves the human body; Sidhu et al., 2014). Regression analyses revealed that abstract verbs (but not concrete verbs) were acquired earlier if they were emotional (positive or negative). Embodiment also had significant predictive capacity: Emotional content facilitated the acquisition of highly embodied verbs, especially those with a positive valence, but not low-embodied verbs. These results support the Affective Embodiment Account (Vigliocco et al., 2014), which posits that emotional information is more relevant for acquiring abstract than concrete words. However, they also suggest that, to provide a complete picture of affective influences on vocabulary acquisition, other variables besides concreteness (e.g. embodiment) should be considered.

Martinez-Huertas et al. (2023) analysed the influence of valence and arousal on the development of amodal representations of words, that is, semantic representations that refer to the conceptual and propositional relationships between words (e.g. dog–cat and pain–blood). They conducted a longitudinal computational study to capture the continuous dynamic changes in word meaning over time. The authors relied on Spanish and English corpora from children of various ages and adult speakers in order to generate a shared vector space that represents the meaning of words at different developmental stages. Only valence was found to have a significant impact on the amodal development of words. Specifically, more positive words were semantically developed earlier, while less positive words exhibited greater semantic change throughout the study. These findings suggest that positive words are not only acquired earlier than negative words, as previous evidence has shown (Sabater et al., 2023), but also that their meaning changes less (i.e. it is more stable) across the lifespan.

In a study that goes beyond individual words, Desai et al. (2024) explored the ability of figurative language to convey emotions, focusing on hyperbole - the exaggeration of the subject of discussion. The authors examined whether the presence of hyperbole in hypothetical victim testimonies affected how emotional and appropriate they were perceived to be. Professionals (police officers) and laypeople rated written scenarios from two perspectives: that of the complainants and that of the participants themselves. Overall, scenarios containing hyperbole were considered to be more emotionally intense, yet less appropriate, than those without, from both perspectives. This is consistent with previous findings that figurative language conveys more emotion than literal language (Citron et al., 2019). Notably, laypeople perceived the scenarios as more intense and unpleasant than police officers did, suggesting that exposure to real situations may desensitise professionals to some extent. These findings have clear implications for how victims' expressions are perceived in forensic settings by different types of observers.

The next set of papers focus on speech sounds. Topolinski et al. (2024) aimed to establish the mechanism of the articulatory in-out effect, consisting in that words and letter sequences whose consonantal articulation places move from the front to the back of the mouth (e.g. badaka) are perceived as more positive than words whose articulation places move from the back to the front of the mouth (e.g. kadaba; Topolinski et al., 2014). This phenomenon extends beyond word evaluations, influencing various aspects such as personal impressions (Garrido et al., 2019) and marketing (Topolinski et al., 2015). This study tested the easy-first account, which states that the in-out preference stems from people's tendency to process easy consonants before harder ones (MacDonald & Weiss, 2022). Participants rated how pleasant they found nonsense letter sequences that varied in terms of both the direction of consonantal articulation (front-

back versus back-front) and articulation place (labial, e.g. B; coronal, e.g. D; or dorsal, e.g. K). The in-out effect was observed in the labial–dorsal and coronal–dorsal conditions, but not in the labial–coronal conditions. As coronal consonants are harder to process than labial consonants, these findings suggest that the easy-first account cannot explain the in-out effect.

The articles of Schmidtke and Conrad (2024) and Calvillo-Torres et al. (2024) investigate the phenomenon of affective sound symbolism (i.e., non-arbitrary mappings between specific phonemes and the emotional meaning of words, Adelman et al., 2018). The first of these studies examined the sensitivity of German speakers to the assumed affective iconicity of phonemes of the German language. With this purpose, Schmidtke and Conrad (2024) computed the sublexical affective values (i.e. valence and arousal) of the onset, nucleus, and coda of the syllables included in a large set of German words for which valence and arousal ratings were available. To achieve this, they averaged the valence and arousal values for each segment across all the words in which the respective segments occurred. These segments were combined to create a set of pseudowords, i.e. meaningless strings of letters. Participants were asked to rate the subjective valence and arousal of each pseudoword in eight experiments. Pseudowords that included phonemes more often used in high-arousing words were judged as more arousing. The results for valence were less clear, suggesting that arousal is the driving force behind non-arbitrary associations between sound and emotional meaning.

Calvillo-Torres et al. (2024) examined affective sound symbolism from a double approach. In the first study, they explored the relationship between the iconicity of words (i.e. the extent to which the form of a word is related to its meaning, as perceived by speakers) and their affective properties (i.e. valence and arousal). They found that words conveying negative meanings, particularly those with fearful connotations, tend

to be more iconic. In the second study, these authors investigated the statistical regularities between the phonemes of Spanish words and a set of affective features (valence, arousal, and discrete emotions), finding that fricatives (e.g. /s/, /z/) were overrepresented in negative, highly arousing words, as well as in words conveying fear, sadness, anger, and disgust. Plosives (/p/, /t/, /β/, /d/) also tended to occur more frequently in highly arousing words. Furthermore, the trilled phoneme /R/ was associated with anger, while the phoneme /i/ occurred in many words expressing happiness. Overall, these studies suggest that emotion plays a role in the development of phonological systems across languages. The ability to perceive similarities between word forms and their affective meaning (i.e., systematic relationships) may have an evolutionary origin, facilitating the communication of information about potential threats and dangers (Adelman et al., 2018; Imai & Kita, 2014).

The last three articles that focus on speech sounds address various aspects related to prosody. Dor et al. (2024) aimed to determine the source of a consistent age effect in the processing of emotional speech: Older people rely less on prosody (tone) relative to semantics (meaning) than young adults do. Participants in the study were asked to identify the emotion conveyed by a set of sentences, which could be either congruent or incongruent in terms of the emotion conveyed by prosody and semantics. These sentences were presented under two noise conditions that differed in terms of cognitive demand: fluctuating speech-spectrum noise, which provides energetic masking, and babble noise, which provides informational masking. Overall, the results confirmed that older adults find it more difficult to identify emotions in speech. Notably, the differences between young and older individuals disappeared in the babble noise condition, probably because of the cognitive load imposed by a context in which other people are speaking. As the authors point out, when working memory and

semantic load increase, the performance of young individuals in emotional processing approaches that of older individuals. Therefore, future research should consider testing speech perception under realistic listening conditions, since differences observed in quiet laboratory environments may not reflect real-life interactions.

In a study that expanded the focus of the interaction between prosody and semantics to tonal languages such as Chinese, Xiao and Liu (2024) also manipulated the congruence between the emotion conveyed through prosody and the emotional meaning of words and sentences. Both native and non-native Chinese speakers were asked to judge the emotional prosody (positive or negative) of isolated words and sentences that had been recorded by a native Chinese speaker. The results confirmed the superiority of native speakers over non-native speakers in recognising emotional prosody. They also revealed a general congruency effect in both groups, indicating superior performance in congruent trials compared to incongruent ones. Interestingly, the semantic congruency effect in sentences was only observed in the non-native group. Native Chinese speakers demonstrated high accuracy in perceiving emotional prosody regardless of semantic congruence. This is probably because they have a greater ability to access emotional information conveyed through prosody in spoken stimuli without relying on semantic content. These findings highlight the complexity of the relationships between the various factors involved in processing emotional speech in multilingual populations.

The study by Telli & Bilge (2024) focuses on alexithymia, a condition characterized by the difficulty identifying and describing emotions (see Luminet et al., 2021). Similar to the above discussed articles, the congruence between the meaning and the prosody of a set of emotional narratives was manipulated. Participants who scored high or low in alexithymia (as assessed with the Toronto Alexithymia Scale, TAS-20, Bagby et al., 1994) were instructed to identify the emotion conveyed by the narratives.

The typical congruence effect was observed, also in individuals with high alexithymia, which was unexpected given previous reports of this population's difficulty in identifying emotional prosody (Goerlich et al., 2012). The only exception was anger: individuals with high alexithymia recognised it as accurately in both congruent and incongruent conditions. This is consistent with previous evidence suggesting that these individuals have unique processing mechanisms for anger (Vermeulen et al., 2006). These findings reveal the complex influence of alexithymia on the processing of emotional discourse. They also have clear clinical implications with regard to identifying emotions in situations where prosody and meaning conflict, and the extent to which this may be challenging for individuals with high alexithymia.

Of all aspects of language, the studies included in this section focus on the ability of words and sounds to convey emotion. Taken together, these studies suggest that emotional content is not fixed. Instead, it is modulated by multiple factors whose relevance has been established by the above-discussed findings. These factors include the characteristics of words, such as their degree of concreteness and embodiment, their specific valence (positive words have a more stable meaning than negative words across life) and the associated emotion (some phonemes show systematic relationships with particular emotions). The other factors are individual characteristics, such as experience (police officers perceive the described situations as less intense than laypeople do), age, linguistic profile (bilingualism) and personality traits (alexithymia). These findings highlight the need to consider all modulating variables in order to gain a comprehensive understanding of language's capacity to express emotions.

The influence of emotion on language

This section includes eight articles that examine how emotions conveyed by language influence linguistic processing. Four of the articles focus on individual words (lexical processing), while the remaining four look at supra-lexical processing (phrases and sentences).

Three papers examine visual word recognition. Hatzidaki and Santesteban (2024) investigated whether script influences the processing of emotional words. Greek native speakers performed a lexical decision task (LDT) in which participants indicate whether sequences of letters are real words. This task included words written in standard Greek script and in Greeklish, a Latin-based script. The authors observed facilitated processing of positive words, which were responded to more quickly than negative and neutral words, while negative words were responded to more slowly than other words, consistent with some previous research (see Haro et al., 2024 for an overview). The same pattern of findings emerged for both Greek and Greeklish, suggesting that access to emotional content during visual word recognition is independent of orthographic and phonological characteristics. This contrasts with previous reports of decreased emotional content impact in word recognition in response to phonological (e.g. the use of a foreign accent; Hatzidaki et al., 2015) and orthographic (e.g. the use of an unfamiliar font; Kuchinke et al., 2014) manipulations. While the specific changes that modulate the emotional impact of words remain to be established, the results of this study have practical implications in light of the modifications to orthography favoured by digital communication (e.g. instant text messaging).

Tang et al. (2024) examined the neural correlates of emotional word processing, comparing emotion-label and emotion-laden words (Altarriba & Basnight-Brown, 2011; Pavlenko, 2008). Although both types of words are connected to emotions, the former

explicitly name an emotion (e.g. 'sadness'), while the latter are associated with emotional experiences without explicitly naming them (e.g. 'party'). The study also aimed to test whether the emotional resonance of words is reduced in the second language (L2) of bilingual speakers compared to their first language (L1). A group of Chinese–English bilinguals performed an LDT including L1 and L2 words while their event-related potentials (ERPs) were recorded. The results showed that brain activity was modulated not only by valence (positive versus negative words), but also by word type. This suggests that emotion-label and emotion-laden words are processed differently, as has been suggested by other studies (see Wu and Zhang, 2020, for an overview). These findings have implications for research into emotional word processing, which has traditionally focused on valence and arousal, treating emotional words as a homogeneous category. Furthermore, Tang et al. (2024) observed differences between L1 and L2 words at late processing stages, indicating limited access to emotional information for L2 words. This finding lends support to the notion of emotional detachment in bilingual individuals (see Aguilar et al., 2024, for a review). This may also be relevant in more applied settings, for example when selecting a language for psychotherapy with these populations (see Ortigosa et al., 2024).

Using a slightly different paradigm, Stoianov et al. (2024) sought to examine the processing of emojis and how they interact with words. In a valence rating task, both types of stimuli were responded to more quickly when they were positive (Experiment 1), suggesting that the positivity advantage in word processing (Unkelbach et al., 2020) also applies to emojis. In Experiment 2, an affective priming paradigm was employed. Participants made lexical decisions on target words preceded by either affectively congruent or incongruent emojis. Lexical decision times were faster in congruent conditions (especially when both the emoji and the word were positive), similar to the

results of traditional affective priming studies (in which both the first and second stimuli are words). These results suggest that emojis are rapidly integrated with words during processing. This is a relevant finding when considering the need to understand the cognitive processes involved in integrating verbal and non-verbal elements in digital communication.

The three lexical decision studies discussed above provide evidence that emotional content impacts word recognition. One possible mechanism is attention capture: emotional stimuli (including words) attract attention due to their motivational relevance (Lang et al., 1990). Sulpizio et al. (2024) further investigated this mechanism using a word production paradigm focusing on taboo words (i.e. socially inappropriate words such as insults or words with sexual or scatological connotations). In this study, taboo words were read aloud more slowly than non-taboo words, indicating that the taboo content captured attention and drew it away from the ongoing task. This has also been evidenced in studies using word recognition paradigms (Scaltritti et al., 2021). Notably, this interference decreased as the experiment progressed, suggesting that semantic interference generated by taboo content becomes less noticeable over time. The high probability of encountering taboo words during the experiment may reduce their inappropriateness in that context, thereby reducing their capacity to attract attention. This indicates that semantic processing is flexible and modulated by context.

The next papers in this section examine different aspects of sentence processing. Yao et al. (2024) investigated the early time course of emotional effects during natural reading by measuring the duration of eye fixations on target words embedded in sentences. They found that emotional words (both positive and negative) were read faster than neutral words. This advantage was modulated by word concreteness and imageability (the ease with which a mental image can be elicited; Balota et al., 2004).

Indeed, the emotional advantage was larger for concrete than abstract words. However, this emotional facilitation was also observed in abstract words, albeit only when they were highly imageable. These results support the multimodal induction hypothesis, which proposes that sensorimotor experiences are required to evoke emotional responses (Niedenthal, 2007).

Brunel et al. (2024) used an emotional Hayling task to study how emotional (negative) content affects the processing of words in a sentence context. In this task, participants must inhibit a highly predictable response in order to provide or select a word that is grammatically correct but unexpected in the context of the sentence (e.g. Dupart et al., 2018). The results revealed greater difficulty in inhibiting highly expected negative words compared to neutral ones. This emotional interference was eliminated when participants were under hypnotic suggestion, a technique designed to reduce emotional reactivity. These findings suggest that hypnotic suggestion may enhance the ability to control emotional responses, indicating its potential application in emotion regulation (Brunel et al., 2023).

Both Vieitez et al. (2024) and Bermúdez-Margaretto et al. (2024) studied the interaction between emotional and grammatical processing, with a focus on morphosyntactic errors (i.e. gender or number mismatches between two or more elements of a phrase). Vieitez et al. (2024) examined gender agreement between determiners and nouns in noun phrases, comparing nouns with natural gender (where gender refers to the biological sex of the referent, e.g. *camarera*, meaning 'waitress' in Spanish) with nouns of arbitrary gender (where gender is a formal feature unrelated to meaning, e.g. *campana*, meaning 'bell' in Spanish). Negative emotional content only facilitated grammaticality judgements (i.e. deciding whether the noun agreed in gender with the preceding determiner) in feminine nouns with natural gender. Therefore,

processing of gender agreement is more susceptible to being affected by non-syntactic information in natural gender than in arbitrary gender, probably because only the former is an intrinsic semantic feature.

Bermúdez-Margaretto et al. (2024) adopted a similar approach in a study examining the impact of emotional content on grammatical processing in a second language (L2). Spanish–English bilingual participants read English sentences that were either grammatically correct or incorrect in terms of pronoun–verb agreement (e.g. 'you watch' vs '*you watches*'). The results showed longer reading times for negative verbs that agreed with the preceding pronoun in person, but only for participants with a higher level of emotional resonance in their L2 (i.e. the capacity for emotional experience in their L2; Toivo et al., 2023). Notably, this variable was found to be more relevant than L2 proficiency. These findings suggest that the influence of emotional content can be observed in L2 processing, not only in isolated word processing (the approach mostly used in this field), but also in morphosyntactic processing. They also suggest that individual variability needs to be considered in this area of research, as other studies have pointed out (see Aguilar et al., 2024, for a review).

The studies included in this section provide strong evidence that emotional content impacts language processing at various levels, ranging from individual words to entire sentences. This influence appears to be modulated by several factors, such as the type of word (e.g. emotion-laden versus emotion-label, taboo, positive versus negative, gender, concreteness and imageability), language (L1 or L2) and characteristics of the speaker (e.g. being under hypnotic suggestion). The emotional effect has been explained in terms of the recruitment of attentional resources, which may facilitate or slow down performance in some cases. These findings clearly challenge the influential modular

account of language processing, according to which the language system does not interact with other mental processes (Fodor, 1983).

The influence of language on emotion

This section examines how language influences the perception, experience and regulation of emotions. It contains seven articles. Three of these papers focus on children and adolescents. The remaining four describe research conducted with adults.

The goal of Grosse and Streubel (2024) and Vy et al. (2024) was to identify the contribution of language-related abilities to understanding emotions. Grosse and Streubel (2024) investigated age-related differences in emotion-specific vocabulary by comparing children (aged 10–11) and adolescents (aged 16–17). The older group had a larger vocabulary size and depth than the younger group, demonstrating that the development of emotion-specific vocabulary continues into adolescence. The authors also examined the relative contributions of emotion-specific and general vocabulary to individual differences in emotion understanding, as assessed by emotion recognition (i.e. the recognition of facial expressions of emotion). The results revealed age-related differences in the importance of each type of vocabulary. In 10–11-year-olds, general vocabulary was the most relevant factor, whereas in 16–17-year-olds, it was emotion-specific vocabulary. However, vocabulary knowledge (whether general or emotion-specific) did not influence another component of emotion understanding: knowledge of emotion regulation strategies. These findings highlight the complexity of the relationship between language and emotion in developing individuals, emphasising the need to consider multiple factors in research.

Vy et al. (2024) examined the contribution of various cognitive factors to emotion comprehension in children with intellectual developmental disorders, including

vocabulary knowledge (comprehension of concrete, emotion and abstract words), verbal reasoning, and verbal working memory. Children were asked to select the facial expression that corresponded to the emotion felt by the protagonist of a story, in order to assess emotion comprehension. Children understood concrete words best, followed by emotion words and then abstract words. Furthermore, emotion comprehension was predicted by verbal working memory and abstract word comprehension, which in turn were predicted by verbal reasoning skills. These findings highlight the importance of considering word type when assessing the impact of vocabulary skills on the development of emotion comprehension. They also suggest that cognitive abilities contribute to the emotion comprehension difficulties reported in individuals with intellectual developmental disorders.

Adopting a different approach, Reaume and Thomassin (2024) examined the impact of parental language on the socialisation of emotions. Parents of children aged eight to twelve took part in semi-structured discussions about their children's emotions. Their verbal output was analysed in terms of emotion talk, cognitive talk and linguistic distancing. Nine months later, the parents' beliefs about their children's emotional development, expression and capacity to regulate emotions were assessed. The results showed that some aspects of parents' linguistic productions predicted their beliefs: positive emotion talk predicted beliefs about children's emotional control, while linguistic distancing when discussing children's emotional experiences predicted beliefs that children should manage their emotions independently. Conversely, the proportion of negative words in parents' verbal productions predicted poorer child emotion regulation. These findings highlight the important influence of parental beliefs and language on children's emotional development, as evidenced by previous research in this area (e.g. Castro et al., 2012; Lozada et al., 2016).

The studies of this section conducted with adults have focused on the capacity of language to regulate emotions, i.e. to alter how individuals experience and express their emotions and when they do so (Gross, 1998). Kaźmierczak et al. (2024) examined how changes in the use of positive and negative emotional words in spoken narratives relate to variations in the severity of depressive and anxiety symptoms over time in depressed and non-depressed individuals. The authors conducted a longitudinal, repeated-narration study, interviewing participants three times over the course of a year. Overall, participants who used more negative words in their narratives tended to have higher levels of depression and anxiety. However, changes in the frequency of positive and negative word use did not influence changes in depression and anxiety levels. Therefore, it appears that fluctuations in psychopathological symptoms are more influenced by factors such as personality than by the propensity to use positive and negative words in natural language.

The remaining three articles investigated the effectiveness of specific emotion regulation strategies. Yue et al. (2024) examined whether the beneficial effects of negative emotional granularity, or the ability to distinguish and differentiate negative emotional states (Tugade et al., 2004), on mental health are mediated by the efficient use of emotion regulation strategies, particularly affect labelling. This implicit emotion regulation strategy involves verbally describing or naming stimuli or one's own emotional experiences (Bai & Yue, 2013). Participants with high and low negative emotional granularity completed an affect labelling task, in which they had to describe their emotions in response to a set of images. The high negative emotional granularity group was more accurate in their responses than the low negative emotional granularity group and showed a decrease in the amplitude of EPP (an ERP component that indexes emotion intensity and is sensitive to emotion regulation strategies) (Bai & Yue, 2013).

These findings suggest that only the former group could reduce their negative emotions by naming emotional stimuli. Notably, emotional granularity was also related to general health. This relationship was mediated by affect labelling. These results suggest that teaching people to use a more diverse range of emotional words precisely could be beneficial.

Seah and Coifman (2024) also focused on emotion differentiation, investigating whether this capacity could be improved in adults through the use of scaffolding to enhance their ability to label emotions. Participants completed an ecological momentary assessment of emotions over the course of several days, divided into two phases. In the first phase, the scaffolding group used a closed-ended approach, rating their emotional state across a set of positive and negative emotion words. In the second phase, they used an open-ended format, describing their emotional state in their own words. The control group did the same, but in reverse order. The scaffolding intervention resulted in greater emotional differentiation in the second phase, particularly with regard to negative emotion words. Therefore, providing emotion words to facilitate emotion labelling may be a useful strategy to enhance the specificity of emotional language, which could have important applications given the relationship between negative emotional differentiation and well-being (Seah & Coifman, 2022).

Pfeifer et al. (2024) asked whether verbal irony, i.e. when the intended meaning of words does not correspond to their literal meaning, is effective in reducing negative emotions. They also investigated whether the underlying neural mechanism is similar to that of cognitive reappraisal, which is a form of emotion regulation that involves reconsidering emotional stimuli to make them less negative or intense. Verbal irony reduced feelings of negativity elicited by the presentation of negative pictures, but to a lesser extent than cognitive reappraisal. This is probably because this is an explicit

emotion regulation strategy that requires active participation from the individual. Furthermore, the ERP data revealed that verbal irony and cognitive reappraisal did not modulate the same components, suggesting that these two strategies use different mechanisms to reduce negativity.

The studies included in this section show that language influences emotion throughout the life cycle, from childhood to adulthood. Research with children and adolescents demonstrates that the type of word plays a modulatory role in emotion comprehension and understanding. The most relevant factors depend on age and the specific population studied, with emotion-specific vocabulary, general vocabulary, and knowledge of abstract words being the most significant. Furthermore, parents' talk about emotions and their beliefs play a key role in children's emotional development and regulation. On the other hand, the use of emotion words in natural language can provide insight into the emotional state of adult speakers. Furthermore, the use of emotion words (affect labelling) appears to be an effective regulatory strategy, which seems to mediate the positive effect of emotional granularity on mental health. This strategy can be improved by providing people with emotion words. Other language-mediated strategies, such as the use of verbal irony, are the focus of current research. Overall, these findings provide strong evidence of language's impact on emotional understanding and experience, which in turn affects well-being.

Conclusion

The articles in this special issue showcase the wealth of research into the relationship between language and emotion. Adopting a variety of methodological and theoretical approaches, the papers presented here reveal that this relationship can be observed at all linguistic levels and from two complementary perspectives: the influence of emotion on language and the influence of language on emotion. These studies constitute a sample of the topics that are currently of interest to researchers and the issues that they are addressing. Their findings highlight the need to consider several issues in order to fully understand the relationship between language and emotion. Two factors stand out as being particularly important. The first concerns the characteristics of verbal information itself. These include affective properties such as valence, arousal, tabooeness, emotional connotation and denotation, as well as non-affective properties such as the association of words with sensorimotor experiences, or the language of the verbal information (native vs. non-native). The second factor refers to inter-individual differences. The results of these studies show that variables such as age, personality and the capacity to differentiate emotions, as well as more transient states (e.g. hypnotic suggestion), modulate both the processing of emotional language and the effects of language on the comprehension and regulation of emotions.

The works included in this collection demonstrate how the field has advanced in recent decades and reveal that the traditional separation between language and emotion, which was widely accepted during the last century, is no longer tenable. Nevertheless, there are still questions that remain unanswered and issues that need to be addressed. There is a need for theoretical proposals that can account for the large amount of accumulated data. Ideally, these proposals should bridge the gap between theories of affect, which have generally overlooked the role of language in emotional experience

(with some exceptions, such as Lindquist, 2013), and models of linguistic processing, which still need to incorporate emotional variables. It is also important to conduct studies in more ecologically valid situations than the presentation of isolated words or sentences, and to investigate how emotion influences processing in contexts closer to everyday life, such as conversations (van Berkum, 2019, 2020; Vergis, 2023). This will arguably provide a richer, more realistic picture of the complex relationship between emotion and language. Finally, while most research in this area has been basically oriented, there are clear potential applications, such as in language acquisition and psychotherapy, just to name a few. Given the relevance of emotional knowledge and regulation in human well-being, researchers should find ways to expand this basic knowledge to applied settings. Hopefully, this special issue will contribute to advancing these aspects.

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