

DOES INNER SPEECH IN SILENT READING FACILITATE EMOTIONAL PROCESSING?

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Written stories immerse readers in complex, imaginative worlds (Gerrig, 2018) and bring fictional characters to life through vividness and complexity in their voices (Alderson-Day, Bernini, & Fernyhough, 2017). Readers often experience such imaginary voices as inner speech, especially when reading direct speech quotations (e.g., *He said, "I'm hungry!"*) (Yao, Belin, & Scheepers, 2011; Yao & Scheepers, 2011). While spoken language conveys rich information about a speaker's identity, intentions, and emotions (Scherer, 2003), the impact of inner speech on emotional processing remains unclear.

Experiment 1 asked native English speakers to rate a protagonist's emotional arousal in emotionally-neutral Direct Speech (*Carol replied, "I already know that"*), Indirect Speech (*Carol replied that she already knew that*) and Non-Speech (*Carol realised that she already knew that*) sentences. Direct speech sentences led to higher arousal ratings and faster reaction times than Indirect speech and Non-Speech sentences. This suggests that direct speech elicits increased emotions, and quicker emotional access than indirect speech.

Experiment 2a tested whether this increased emotional access is driven by inner speech in silent reading of direct speech quotations. Readers suppressed inner speech by repeatedly articulating "bah bah bah" while reading, or engage their manual motor functions by repeatedly tapping their fingers. Direct speech was rated more arousing and was rated significantly faster than indirect speech. However, the direct speech advantage in emotional access (reaction times) was more pronounced during articulatory suppression than during finger tapping.

Experiment 2b examined the effect of enhancing inner speech by silently mouthing the words. Results indicated that direct speech was rated significantly more arousing and was rated significantly faster than indirect speech. The direct speech advantage in emotional access (reaction times) was more pronounced with silent mouthing than without, suggesting that enhancing inner speech facilitates emotion judgements in direct speech.

Experiment 3 aimed to understand inner speech's role in emotional processing without any secondary tasks. It compared arousal judgements between reported speeches and thoughts. Direct reference, whether speech or thought, were rated more arousing and elicited faster reaction times. A significant interaction between reference (direct, indirect) and type (speech, thought) revealed that the direct reference advantage for emotional access (reaction times) was more pronounced for thoughts over speeches, suggesting that inner thoughts may provide better emotional access than inner speech.

In summary, direct speech in narratives enhances readers' emotional access to fictional characters. Although evidence indicates that engaging the speech production system, with inner speech either suppressed or enhanced, increases this emotional access, the exact relationship between speech production and emotional processing remains warrants further investigation.