

# Introducing the Judgmental Hypothesis of Sensory Relativism: ERP and GSR Investigations of Sentence Processing

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As the Linguistic Relativity Hypothesis holds that language can change cognition, Sensory Relativism Hypothesis (Pishghadam et al., 2016) proposes that senses can influence cognition and emotion. Based on Sensory Relativism, individuals may have no knowledge of certain concepts (i.e., to be avolved), may have some knowledge of the concepts perceived through their senses of hearing, vision, and touch (to be exvolved), and may have comprehensive knowledge of the concepts perceived through their senses of hearing, vision, touch, smell, and taste (to be involved). Thus, the number of senses one has already used for perception and conceptualization can change their cognition and emotion. For instance, those who have eaten "caviar" (involvement) develop different emotions and understandings from those who have just seen caviar (exvolved). The experimental aspect of this hypothesis has recently been investigated in behavioral and electrophysiological studies on sentence processing. As a result of the behavioral ones, it was deduced that in real-life situations, an increase in the number of senses used for perception (i.e., moving from avolvement to involvement) would lead to improved cognitive processing (Pishghadam & Shayesteh, 2016; Shahian, 2020). Yet, the Event-Related Potential (ERP) investigations conducted in contexts where the participants were supposed to do a sentence acceptability judgment task revealed that more cognitive engagement was required to comprehend sentences with unknown words (avolvement) or remember the details of the words learned through their five senses (involvement; Pishghadam et al., 2021; Shayesteh et al. 2020; Tabatabaee Farani et al. 2020). In a similar study, Pishghadam et al. (under review) reported that for exvolved words embedded in sentences with semantic and pragmatic violations, Galvanic Skin Responses (GSR) were smaller compared to the responses to the involved words. That is, in experimental contexts, more emotional arousal is experienced during avolvement and involvement, which is associated with increased cognitive engagement.

The overall conclusion of all the conducted studies was that the influence of senses on cognition and emotion might change in degree according to the context individuals are in. This context could manifest itself in two forms of less judgmental (such as everyday life) and more judgmental (such as exams or experiments). That is, not only the number of senses but also the amount of judgment to be entered may modulate cognitive and emotional processes differently (Table 1). This is referred to as the Judgmental Hypothesis of Sensory Relativism, denoting that judgment and sensory relativism are intertwined. For instance, if you have no knowledge of a concept and you know you will not be judged, you do not experience much cognitive and emotional engagement. However, if you are in a different context where your answer is important, it might cause more cognitive and emotional engagement. Further elaborations and justification in light of cognitive linguistics will be given in the oral presentation.

		No Sense	Auditory	Visual	Kinesthetic	Auditory	Visual	Kinesthetic	Smell	Taste
		Avolvement	Exvolvedment			Involvedment				
Judgement	More	<i>Extremely High</i> Cognitive/Emotional Engagement	<i>Moderately High</i> Cognitive/Emotional Engagement			<i>Extremely High</i> Cognitive/Emotional Engagement				
	Less	<i>Low</i> Cognitive/Emotional Engagement	<i>Moderate</i> Cognitive/Emotional Engagement			<i>High</i> Cognitive/Emotional Engagement				

Table 1: The relationship between judgment, sensory involvement, and emotional/cognitive engagement

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