Metonymy and Metaphor: How Language Can Impact Understanding of Mathematical Concepts
(Part II)

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Abstract:

The language phenomena of metonymy and metaphor affect the ways that instructors and students talk about mathematical concepts. In everyday language, metonymies are used to condense ideas into shorter phrases for efficiency or emphasis , and metaphors are used to make connections between ideas. Not surprisingly, these uses occur in our mathematical language as well. This article illustrates these phenomena with quotes of students talking about or solving problems related to the concept of derivative. In this article, we lay out two contexts that are fairly familiar to students and illustrate how students may use these to understand less familiar real-world contexts or more abstract symbolizations. In addition, the article discusses how the interplay between metaphors and metonymies can help students understand the concept of derivative.