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Sommario/riassunto

For many years, an abstract, amodal semantic magnitude representation, largely independent of verbal linguistic representations, has been viewed as the core numerical or mathematical representation This assumption has been substantially challenged in recent years. Linguistic properties affect not only verbal representations of numbers, but also numerical magnitude representation, spatial magnitude representations, calculation, parity representation, place-value representation and even early number acquisition. Thus, we postulate that numerical and arithmetic processing are not fully independent of linguistic processing. This is not to say, that in patients, magnitude processing cannot function independently of linguistic processing we just suppose, these functions are connected in the functioning brain. So far, much research about linguistic influences on numerical cognition has simply demonstrated that language influences number without investigating the level at which a particular language influence operates. After an overview, we present new findings on language influences on seven language levels: - Conceptual: Conceptual properties of language - Syntactic: The grammatical structure of languages beyond the word level influences - Semantic: The semantic meaning or existence of words - Lexical: The lexical composition of words, in particular number words - Visuo-spatial-orthographic: Orthographic properties, such as the writing/reading direction of a language - Phonological: Phonological/phonetic properties of

languages - Other language-related skills: Verbal working memory and other cognitive skills related to language representations We hope that this book provides a new and structured overview on the exciting influences of linguistic processing on numerical cognition at almost all levels of language processing.