Bolzano versus Kant: Mathematics as a Scientia Universalis

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The paper will discuss some changes in Bolzano's definition of mathematics attested in several quotations from the Beyträge, Wissenschaftslehre and Grössenlehre: is mathematics a theory of forms or a theory of quantities? Several issues that are maintained throughout Bolzano's works will be distinguished from others that were accepted in the Beyträge and abandoned in the Grössenlehre. Changes will be interpreted as a consequence of the new logical theory of truth introduced in the Wissenschaftslehre, but also as a consequence ot the overcome of Kant's terminology, and of the radicalization of Bolzano's anti-Kantianism. It will be argued that Bolzano's evolution can be understood as a coherent move, if one compares the criticism expressed in the Beyträge on the notion of quantity with a different and larger notion of quantity that Bolzano developed already in 1816. This discussion is based on the discovery that two unknown texts mentioned by Bolzano can be identified with works by von Spaun and Vieth respectively. Bolzano's evolution will be interpreted as a radicalization of the criticism of the Kantian definition of mathematics and as an effect of Bolzano's unaltered interest in the Leibnizian notion of mathesis universalis. As a conclusion, it will be argued that Bolzano never abandoned his original idea of considering mathematics as a scientia universalis, i.e. as the science of quantities in general, and it will be suggested that the question of ideal elements in mathematics, which has been interpreted as a main reason for the development of a new logical theory, can also be considered as a main reason for developing a different definition of quantity.