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Euclid and Radical Translation

It is often said that Euclid's "Elements" for centuries were used as the Bible of mathematics. However when one studies texts, which circulated under the name of Euclid's "Elements" in different epochs, in different geographical areas and in different cultural and linguistic environments, one finds a surprisingly diverse literature. Until very recently translators and editors of Euclid's classics also worked as revisors who tried to produce an improved version of Euclid rather than merely reproduce some older contents with new means. Such a non-trivial character of translations of Euclid's Elements made possible a radical rethinking of foundations of mathematics, which dramatically changed its shape throughout its long history (and also throughout its wide geography), and at the same time allowed for an impressive historical and geographical continuity of mathematical thinking.

Although Quine introduced his concept of radical translation in a very different context I claim that most important historical translations of Euclid's Elements qualify as radical in Quine's sense because these translations re-introduce relevant mathematical contents wholly anew rather than describe them as previously given.

In my talk I shall briefly overview the long history of translations of Euclid's "Elements" and speak more specifically about existing Russian translations of this source. I shall conclude with some general observations concerning the fundamental role of translation in science, mathematics and beyond. I shall argue, in particular, that the continuing radical translation of mathematical and scientific contents is a crucial condition of progress in these fields.