The discovery of the thromboxane family of compounds in 1974-1975 can be regarded as a logical outcome of our previous work on the mechanism of prostaglandin biosynthesis from certain polyunsaturated fatty acids carried out from 1965 to 1967. This work led to the proposal of the existence of endoperoxide intermediates; however it was not until 1973 that such intermediates (prostaglandins G2 and H2) could be isolated. The access to pure endoperoxides and the finding of their pro-aggregating activity on human blood platelets necessitated a study on the metabolic fate of arachidonic acid in human platelets and in the generation of vascular disease. [The SCRI indicates that this paper has been cited in over 1,305 publications since 1975.]

In platelets, two pathways of arachidonic acid metabolism were found. One was initiated by a novel lipoxygenase and resulted in the formation of thromboxane A2 from platelet arachidonic acid. Thromboxane A2 in very low concentrations causes clumping of human platelets and has a mediator role in hemostasis and in the generation of vascular disease. [The SCRI indicates that this paper has been cited in over 1,260 publications since 1976.]

At the same time, in collaboration with J. Svensson, who was carrying out his doctoral work at the department of chemistry, we observed a transient formation of very unstable potent pro-aggregating material upon incubation of platelet suspensions with arachidonic acid. This material was identified as thromboxane A2 on the basis of its formation from prostaglandin endoperoxides, instability in aqueous medium, etc. "Formation and action of thromboxane A2 is the first example of physiological and pathological roles for the prostaglandin-thromboxane system in man. The finding of a new endogenously formed mediator in hemostasis and in the generation of vascular disease has stimulated a large number of biochemical, physiological, and clinical studies. This, I think, is the reason for the frequent citation of our paper."

5. Moncada S, Gryglewski R, Bunting S & Vane J R. An enzyme isolated from arteries transforms prostaglandin endoperoxides into an unstable substance that inhibits platelet aggregation. Nature 263:663-5, 1976. [The SCRI indicates that this paper has been cited in over 1,260 publications since 1976.]