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P. G. Tait's Engagements with Quaternion Analysis, 1880 to 1900

In the preface to his *Scientific Papers* (1898), Tait contends that his early quaternion publications were mostly composed on his own, prior to any significant correspondence with Hamilton. Tait states: “These were written while I was endeavouring to familiarise myself with the new calculus, and were, in great part, worked out before I had any communication with Sir W. R. Hamilton except through his Lectures ; a fascinating book, When I made Hamilton’s acquaintance a year or two later, . . . I submitted to him some of the more formidable difficulties which I had met in the study of his great work, and the hints I thus obtained were of much use to me in finally preparing these papers for publication” (Tait 1898: v). There is reason to argue, however, that Tait’s rendering of his engagement with quaternions is questionable. His correspondence with Hamilton from 1858 to 1860 indicates that more than just a “few hints” were passed from Hamilton to Tait. Indeed, the two mathematicians relied heavily upon one another to legitimate their developing ideas. Tait’s claim in 1898 that he had worked solo should, therefore, be read as part of his own legitimation efforts—efforts coloured by the fact that Tait was engaged in debates with Gibbs and Heaviside over their respective development of vector analysis (which ignored aspects of the quaternion system). Tait’s account of his engagement with Hamilton is meant to recollect the past to situate himself at the forefront of quaternion research as it had unfolded in the middle of the century.

In this paper, I will explore Tait’s engagements with quaternion analysis from 1880 to 1900—a time when he perceived himself to be in a battle for priority and primacy in the development of vector analysis. I will argue that his reconstructions of the past are romanticized and inaccurate accounts of how Tait initially engaged with quaternions from 1858 to 1870—accounts that he produced in order to legitimate his continued role in the development of quaternion mathematics.