

## Unravelling the Dangers of the Legal Status Quo through the Life of Mathematician Alan Turing

Review of: Alan Turing: The Enigma: The Book that Inspired the Film The Imitation Game

By Andrew Hodges

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*“The point of what Einstein had done did not lie in this or that experiment. It lay, as Alan saw, in the ability to doubt, to take ideas seriously, and to follow them to a logical if upsetting conclusion. ‘Now he has got his axioms,’ wrote Alan, ‘and is able to proceed with his logic, discarding the old ideas of time, space, etc.’”<sup>1</sup>*

Alan Turing: The Enigma: The Book that Inspired the Film *The Imitation Game* is a non-fiction work by Andrew Hodges. It was originally printed in 1983, but it has been reprinted several times, most recently in 2014. The book centers on the life of Alan Turing, a British mathematician now credited for the role he played in breaking Nazi codes used during World War II.<sup>2</sup> The book follows Alan Turing from birth to death, and it is an effort to decrypt the life of this pivotal figure in world history. An especially daunting task because Alan Turing was forced by his work and his sexuality to keep many aspects of himself a secret.<sup>3</sup> Andrew Hodges decrypted Alan’s life in the context of the world he lived in, and the political, legal, and artistic events that affected him. The Author did succeed in demystifying the life of Alan Turing against the backdrop of the outside world not only by revealing his explorations of mathematics,

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<sup>1</sup> ANDREW HODGES, ALAN TURING: THE ENIGMA: THE BOOK THAT INSPIRED THE FILM *THE IMITATION GAME* 44 (2014) [hereinafter HODGES].

<sup>2</sup> Id. at xiii.

<sup>3</sup> Id. at 302.

philosophy, engineering and science, but also by revealing vast amounts of data about Alan from man himself and from his acquaintances.

Andrew Hodges, the author, crafted the life of Alan Turing in a complex and technical manner, which is still, for the most part, a compelling narrative. Andrew Hodges is a Professor and Senior Research Fellow and Tutor in Mathematics at Wadham College, which is part of Oxford University.<sup>4</sup> The focus of his research is “in the application of twistor geometry to fundamental physics.”<sup>5</sup> He has published several works in advanced mathematics such as *Eliminating Spurious Poles from Gauge-Theoretic Amplitudes*.<sup>6</sup> He is also a gay rights activist who has written pieces on homosexual identity such as the pamphlet, now found online, *With Downcast Gays: Aspects Of Homosexual Self-Oppression*.<sup>7</sup> Basically, Andrew Hodges has an incredibly impressive resume, and he is well qualified to write about the life, and especially the works, of pioneering mathematician and scientist, Alan Turing.

The book is mostly organized in a linear fashion, beginning with birth and ending with death, but it is not strictly linear. That is because the book is organized by the evolution of Alan Turing’s ideas, and it is separated into 3 separate phases. The first phase of the book is the logical, which marks Alan’s early life, up to the late 1930s. This phase explores his theoretical idea of a universal machine capable of solving any problem. It is Alan’s pure theory phase, which the author punctuates with his family relationships, childhood quirks, current events, and the concurrent works of other scientists. The second, and shortest phase is the Bridge phase. This is the phase of Alan’s life where he is inspired not only to design, or theorize machines, but

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<sup>4</sup> See Prof. Andrew Hodges, UNIVERSITY OF OXFORD: MATHEMATICAL INSTITUTE archived at <http://perma.cc/B6UP-H75C>.

<sup>5</sup> See *id.*

<sup>6</sup> See Andrew Hodges, *Eliminating Spurious Poles from Gauge-Theoretic Amplitudes*, 1305 JHEP 135 (2013); see also Prof. Andrew Hodges, *supra* note 4.

<sup>7</sup> See Andrew Hodges and David Hutter, *With Downcast Gays: Aspects Of Homosexual Self-Oppression* (1974) archived at <http://perma.cc/7KL4-EU66>.

also to actually create them. The third, and final section is the physical of Alan's life in which he actually builds, a more sophisticated universal machine than he theorized in the first phase of the book. All three phases of the book explore Alan Turing and everything that occurred around him whether or not it directly affected or involved him.

As such, the area of criminal law is discussed as one aspect of the surrounding world that directly affected Alan Turing. In 1952, Alan was convicted of “Gross Indecency contrary to Section 11 of the Criminal Law Amendment Act of 1885.”<sup>8</sup> Alan had hoped the United Kingdom was planning to legalize homosexuality when he confessed his consensual affair to police.<sup>9</sup> Alan was wrong, and he was subjected to chemical castration, via injections, for one year.<sup>10</sup> The legal aspect of this book is simply another lens through which the Andrew Hodges demonstrates that Alan Turing was a man who refused to be ruled by the accepted principles and standards of society. He accepted himself, unapologetically, as a homosexual.<sup>11</sup> The discriminatory law is used as one-way to highlight how refusing to “draw outside the lines” can damage progress. At the time of Turing's conviction, after he had been instrumental in the defeat of the Nazi's, the United States released reports, which the United Kingdom supported, concluding that homosexuals working in clandestine intelligence operations were security risks.<sup>12</sup> The reports are a chilling realization that discriminatory laws almost prevented Alan Turing from designing a machine that decrypted important, strategic, Nazi codes.

The author wrote this book to shed light on the life of Alan Turing, to demonstrate the innovation of Alan Turing's work, and to demonstrate the importance of questioning standard

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<sup>8</sup> See HODGES, *supra* note 1, at 576.

<sup>9</sup> See HODGES, *supra* note 1, at 575.

<sup>10</sup> See HODGES, *supra* note 1, at 595.

<sup>11</sup> See HODGES, *supra* note 1, at 575.

<sup>12</sup> See HODGES, *supra* note 1, at 625-26.

principles. Andrew Hodges organizes the book logically, but the material can be dense or readers that lack degrees in mathematics or engineering. Despite the breadth of sometimes confusing material, which interweaves Alan Turing's personal relationships, theories, catastrophic events, and innovative breakthroughs, the author did manage to paint a clear picture of Alan Turing. It is a rich of understanding that attempts to explore the unique way Alan Turing approached the world and everything in it. The complex mathematical theories examined showcase the unique processes of Alan Turing's mind. The snippets of personal letters, sometimes to and from other people, also demonstrate how Alan's unique view of the world could make finding a place in it difficult. The reader also comes to view Alan as a man that sought truth and was forced to hide it, in terms of his identity, which created an internal conflict for him.

As well as creating a personal picture of Alan Turing, Hodges also manages to create an understanding of the innovative nature of Alan Turing's ideas, and the importance challenging the accepted norms, in math and in life, to create progress. Throughout the book, Hodges analyzes pure mathematics, the work of other innovators that inspired Alan, and Alan's various mathematical, mechanical, and scientific theories. The incredible technical detail of the book is beyond the scope of many individuals, especially law students without math degrees. Despite this, Hodges does manage to display, to lesser minds, the fearlessness and groundbreaking nature of Alan Turing's theories. The outcome of these ideas, a machine that defeats Nazi encryption, makes the reader realize the importance of challenging old ideas. Without Alan working outside the known realm of pure mathematics, the machine to defeat the Nazi's may not have been invented in time. The importance of innovation in face of the status quo is definitely a message that Hodges successfully sends to the reader.

This is a complex book that presents a multitude of ideas. It is enjoyable, but also puzzling, and the reader may finish it feeling like they have missed things. Hodges did succeed in unlocking the enigma of Alan Turing, the innovative nature of his ideas, and the importance of challenging the status quo, but only for the reader who makes it through all the material. The book is an interesting read, but probably most appealing to, and palatable for, mathematicians. The average reader, like myself, may not understand up to a third or more of the mathematical, scientific, and engineering materials explained. Readers that do finish the book will find that the various aspects of Alan Turing's life, work, and feelings all come into focus as it progresses. The reader will understand Turing, and the importance of his ideas in the face accepted norms. The average reader, however, may not be able to ascertain or assess all messages that Hodges may try to convey, especially if they are part of complex mathematical metaphors. Overall, the book is enjoyable, but may not be a good selection for the faint of heart.