



## Article

## Did John Stuart Mill Write 'On Social Freedom'?

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**Abstract:** During his final years, John Stuart Mill reportedly attempted to update the argument of *On Liberty* (1859). Published posthumously in 1907, 'On Social Freedom' represents the initial, unrefined draft of his reworked ideas. This article argues that John Stuart Mill was not the author of 'On Social Freedom'. First, we revisit the question of the essay's authorship traditionally: the emphasis is on the essay's content and the historical context of the mid-twentieth-century debate on Mill as its author. We trace the disagreement to two broad reactions to Mill's thought. Ultimately, the question of whether the manuscript's substantial divergence from J. S. Mill's renowned works is enough to refute his authorship depends on one's interpretation of Mill as a systematic philosopher. Second, we tackle this task non-traditionally: the focus shifts to the tools of computer-assisted authorship identification and the use of machine learning (ML) techniques. Once we establish some key ideas, methods, and limitations of this field of studies, we present our attempts at a computer-assisted solution to the puzzle. The results of our experiments, using ML techniques, corroborate the conclusions reached via the traditional route.

**Keywords:** John Stuart Mill; *On Liberty*; authorship analysis; traditional and revisionist interpretations



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## 1. Introduction

'Men do not desire merely to be rich, but to be richer than other men'. This is one of the five quotes cited in the 'John Stuart Mill' entry at Britannica.com.<sup>1</sup> This witty quip, listed under 'Wealth' has expectedly found its way to economics papers (e.g., [Graf-Vlachy 2021](#), p. 40; [Hof and Prettnner 2019](#), p. 290). The quote is from 'On Social Freedom' (OSF). The manuscript was discovered among J. S. Mill's papers from his home at Avignon in 1905. It was published posthumously in 1907 with his name attached. But did he write it? If Mill did not write it, why was he mistaken for its author? In this article, we attempt to tackle these questions.

OSF was not included in the authoritative edition of John Stuart Mill's collected works ([Robson 1963–1991](#)).<sup>2</sup> However, some scholars find OSF useful as a corrective to the individualistic tendencies of his other works (e.g., [Ward and McGlynn 2016](#), p. 228), or simply as insightful in its definitions (e.g., [Scott 1970](#), p. 104), though sometimes with a disclaimer about its disputed 'paternity' (e.g., [Sweet 1995](#), p. 368n39; [Constantini 2005](#), p. 101n81). The overwhelming majority ignores it, even when their subject matter is quite relevant (e.g., [Stafford 1998](#); [McCabe 2021](#)).

In 1956, John C. [Rees \(1985, appendix\)](#) offered a convincing argument disputing OSF's attribution to Mill. Rees's was an overdue response to Dorothy [Fosdick's \(1941\)](#) republication of the essay with Mill's name on the cover. Fosdick had claimed that the essay formed an attempt on Mill part to update the argument in *On Liberty* (1859) seizing the opportunity to reply to reviews and criticisms of the 1860s and early 1870s. For Fosdick, Mill was flexible, open-minded, and unafraid to change his mind. OSF was his. The essay, Rees countered, contained much that is inconsistent with what we know about Mill's views up to the very last years of his life. OSF could not be his.

In what follows, we suggest that John Stuart Mill was not the author of OSF. Section 2 revisits the question of OSF's authorship in its traditional guise: the emphasis is on the essay's content and the historical context of the debate. We trace the disagreement concerning OSF's authorship to two different reactions to Mill's philosophical work. Ultimately, whether OSF's inconsistency with J. S. Mill's works is sufficient to disprove he was the author hinges on what one thinks about Mill being a systematic philosopher. We side with Rees. We expand on his argument and reply to objections. In Section 3, we attempt to tackle this task in a non-traditional way: computer-assisted authorship identification. We offer an introduction to this growing field of studies for readers who are not familiar with it. We then present the results of our experiments using machine learning (ML) techniques. We corroborate the conclusions reached via the traditional route. There is a better candidate for OSF's 'authorial fingerprint' than J. S. Mill.

## 2. Old Puzzle, Old Tools: The Debate on 'On Social Freedom'

In this section, we first recount the circumstances of OSF's publication. Then we examine the claims of the two sides of the debate on OSF's authorship. We suggest that the debate was possible due to Mill's reputation as honest, open minded, and willing to change his mind. For critics, then and since, J. S. Mill was an inconsistent philosopher. To put it simply, he could not make his claims on the Principle of Utility consistent with his claims on the Principle of Liberty. This was the standard view since *On Liberty and Utilitarianism* (1861) were first published and reviewed. Almost a century later, unburdened by Mill's status as a public intellectual in a transitional age, revisionist readings found a consistent whole in his corpus: happiness, liberty, justice, self-development, and beauty, among other ends of life, are essential components of an indirect utilitarianism.

When OSF was first published in 1907, there was no doubt as to who was its author. The 'living representative of John Stuart Mill' had approved OSF's appearance in *The Oxford and Cambridge Review* (Dawson 1907, p. 57). That was Mary Taylor, Helen Taylor's niece.<sup>3</sup> Soon enough, dissenting voices were heard. In 1908, Carveth Read found the author's skepticism regarding the solution to the puzzle of free will as grounds to doubt the attribution: Mill had expressed confidence in his compatibilist resolution to the problem of 'Fatalism' (Robson 1963–1991, pp. I.175, 177). Still, Read admitted that Mary Taylor was 'the best possible judge.' After all, the manuscript was just a draft (Read 1908, pp. 74–75; cf. Rees 1985, pp. 202n5, 203n21).

Two years later, another piece of evidence came to light. Hugh S. R. Elliot published a selection of Mill's correspondence written mostly in the last twenty-five years of his life. In a draft letter in that collection, dated 13 September 1862, Mill acknowledged receipt of a manuscript. Mill's correspondent asked for his opinion on whether he or she had potential as a writer. Elliot identified the recipient of Mill's letter as E. R. Edger. The manuscript, according to Elliot, was the essay 'Social Freedom' (Elliot 1910, p. I.259). Could this have been the 1905-discovered manuscript? Mary Taylor's close involvement with Elliot's edition (Hayek 1963, pp. xvii–xxi) makes it likely.

It is unclear how Elliot made the attribution, however. And this is reason enough to be skeptical about it. The manuscript of the draft letter has no indication of intended recipient. And except for Mill voicing an objection to the author's definition of liberty, there is no discussion of the manuscript's contents (J. S. Mill to E. R. Edger, 13 September 1862, in Robson 1963–1991, pp. XV.792n1, 793). On the one hand, Elliot had access to manuscripts, letters, and information which we lack since. There are at least twenty-two letters published in Elliot's edition, the MS of which had not been located when Mill's correspondence was published in the *Collected Works* (1963–1972). On the other hand, Francis E. Mineka and Dwight N. Lindley throughout their edition of Mill's correspondence have identified several omissions, errors, and oversights in Elliot's. In one such occasion involving one of the twenty-two lost original letters, when a manuscript was included with the letter, Elliot mistakenly assumed the correspondent was also the author of the manuscript (Elliot 1910, p. I.173. Compare with Robson 1963–1991, pp. XIV.101–2, 102n2). Are such oversights or

errors enough to discredit Elliot's attribution of OSF to Edger? Perhaps. Still, Section 3 follows the line of investigation which Edger's possible authorship opens, though wary of important limitations.

### 2.1. Reading 'On Social Freedom': Rees vs. Fosdick

The short life and the limited circulation of *The Oxford and Cambridge Review* induced Fosdick to reprint the short essay in a stand-alone edition in 1941. After all, it was a time in which the prospect of USA's participation in the fight for freedom against the Axis powers loomed large. Fosdick offered no justification of the attribution of the essay to Mill. The question had been asked and answered by Oswald R. Dawson in 1907, being the editor of *The Oxford and Cambridge Review*. Her introduction to the text was premised on the assumption that Mill wrote it: any divergence from his other works, notably *On Liberty*, was deemed as (indications of) either self-criticism, modification of (or advance from) an earlier position, or even evidence of 'the shift in his position from individualism toward socialism and idealism during the latter years of his life.' As Fosdick (1941, p. 3) put it: 'the form of this essay suggests that it was written by a tired, or tiring, man who put down more or less casual ideas without developing them or integrating them with his earlier studies.' Many inconsistencies notwithstanding, Mill was the author of OSF (Fosdick 1941, pp. 5, 9, 13, 17, 19–20, 22–23, 26).

Following Fosdick's republication of the essay, some use of OSF was made as regards Mill's intellectual development as well as his notion of liberty (Harris 1944, pp. 59–60; Mueller 1956, pp. 252–53; Aiken 1962). However, the essay was still not widely known when Rees took up the question of its authorship in 1956 (Rees 1985, pp. 177–78). Had the essay been Mill's, Rees noted about its significance, 'his role as the harbinger of the new liberalism is much greater than is usually allowed', especially since the idealist underpinnings of the essay's notion of liberty conflicts with what we have come to see as Mill's adherence to a negative tradition of liberty (Rees 1985, pp. 175–76; see also, Conti 2021).

OSF starts off with an 'honest confession' from its author: 'I am wholly unable to furnish anything like a satisfactory refutation of the arguments that may be urged against the existence of human individual freedom.' Whether real or illusory, the author noted, most people believe 'the power of voluntary action' exists. Such belief is not 'based upon any process of logical argumentation, but upon some immediate or spontaneous sense, on some movement of consciousness', the conflict between the consciousness of being free and the 'fact' of 'unalterable' 'laws' notwithstanding. Still, being believed to be real and, consequently, its possession being desired, it is important to ascertain the limits of human individual freedom in social settings:

It is possible that men may sometimes rebel against those restraints which are necessarily associated with the most valuable forms and modifications of our social life; and in their wild and undiscerning efforts after unlimited freedom, may overturn arrangements and institutions which are essential to the higher moral life of mankind (Fosdick 1941, pp. 32–35).

Fosdick acknowledged the author's 'failure to recognize that the problem of free will versus determinism is on the philosophical or even the ontological level, whereas the problem of liberty and restraint is on the sociological level' (Fosdick 1941, p. 23).

Rees examined the original manuscript. He pointed out that the handwriting matched neither Mill's nor Helen Taylor's. Even though he did note Elliot's mention of Edger and 'Social Freedom' (Rees 1985, p. 203n23), his conclusion rested primarily on the philosophical ideas articulated in the essay, including an outline of notes for additional sections.<sup>4</sup> For Rees, OSF could not have been Mill's due to important inconsistencies with views which Mill held up to his final years. For example, Rees (1985, pp. 181–82) seized on Fosdick's point on different levels of inquiry on freedom and referred to the very first sentence of *On Liberty*, where the two are kept distinct. Rees (1985, pp. 180–81) also challenged Fosdick's argument that Mill changed his opinion on free will in his later years. He reminded his readers that Mill developed a compatibilist position in *A System of Logic* (1843), reaffirmed

in *Examination of Sir William Hamilton's Philosophy* (1865), and highlighted in *Autobiography* (1873) as an important aspect of his intellectual (and emotional) development. *Logic and Hamilton* had undergone several editions, the last one being 1872, and the last draft of *Autobiography* was put together sometime in 1869–1870.

There is a further aspect to consider. The source of knowledge, admitted by OSF, i.e., 'a spontaneous sense', conflicts with Mill's emphasis in *Autobiography* (Robson 1963–1991, p. I.233) that '[t]he notion that truths external to the mind may be known by intuition or consciousness, independently of observation and experience, is, I am persuaded, in these times, the great intellectual support of false doctrines and bad institutions.' Both *Logic* and *Hamilton* were part of Mill's attempt to demolish this 'intellectual support', in a way, continuing the work of his father (Loizides 2014a).

OSF argued that 'if we mean anything at all [by freedom], we must mean freedom to act. We cannot conceive of any exercise of freedom other than by action' (Fosdick 1941, p. 36). It is not choice that defines the measure of freedom (Fosdick 1941, p. 50): since 'no rational being will act without a motive' (Fosdick 1941, p. 36), OSF argued, 'we have a certain notion of freedom which is based upon the nature of the motives which determine our actions' (Fosdick 1941, p. 52). 'If a man, who is ruled for the time being by mere appetite, pretends to have any higher or nobler motive than that of the pig, I am wholly unable to appreciate his view' (Fosdick 1941, p. 55). As OSF tried to explain, actions 'are determined under a variety of motives.' And the action which is realized is 'the final result of a conflict of motives' (Fosdick 1941, p. 57). Even though an action might be the result of choice, if it is realized under the influence 'by some motive which is not the highest present to the mind of the agent, at the moment of determination,' that action is not free (Fosdick 1941, p. 59). As freedom cannot be apprehended 'without having a conception of some kind of restraint, or other circumstance which either does limit, or may limit, this freedom' (Fosdick 1941, p. 61), habit, fashion, propriety, and self-serving interests are much more limiting than 'the prohibitions of civil law' in well-ordered societies (Fosdick 1941, pp. 66–68).

Although the author felt 'unable to demonstrate to the critical reader that the motives which influence our actions are, respectively, higher and lower', much of OSF's analysis hinged on that the idea we 'have a strong and unmistakable feeling that some motives are higher, and others lower' (Fosdick 1941, p. 54). Here, Fosdick recognized a similarity with the famous higher/lower pleasure distinction in *Utilitarianism* (1861). In contrast, for Rees this statement dissented from Mill's *Utilitarianism*, despite some obvious debts to Mill's text. OSF's author appealed to a feeling, the subjective judgment of likeminded readers as the only proof of her/his analysis, being unable to offer anything 'demonstrable', whereas Mill argued that there was a definite test in distinguishing between higher and lower pleasures: the experience of (the majority of) competent judges (Rees 1985, pp. 182–83). But there are additional aspects of OSF's analysis that need to be discussed.

OSF's author 'believe[d] that some persons have been disposed to regard each human individual as occupying, or as having a right to occupy, a certain "sphere of activity," in sole and exclusive possession' (Fosdick 1941, p. 40). OSF rejected the idea that one can demarcate a 'self-regarding' sphere of activity (Section III). This might have been another aspect of *On Liberty* which Mill could have wished to revise, given the criticism it had received. However, Mill did have the opportunity to revise it: the idea originally appeared in his *Principles of Political Economy* (1848):

Whatever theory we adopt respecting the foundation of the social union, and under whatever political institutions we live, there is a circle around every individual human being, which no government, be it that of one, of a few, or of the many, ought to be permitted to overstep: there is a part of the life of every person who has come to years of discretion, within which the individuality of that person ought to reign uncontrolled either by any other individual or by the public collectively. (Robson 1963–1991, p. III.938)

*Principles* underwent seven editions, each time slightly increasing in length. The last one appeared in 1871. Despite some important revisions in some of these editions, Mill



never substantially altered the text in this section. He was one of those who held the ‘theory of independent spheres of activity’, as OSF put it (Fosdick 1941, p. 41). The ‘circle around every individual human being’, as Mill put it, was inviolable for ‘all that part which concerns only the life, whether inward or outward, of the individual, and does not affect the interests of others, or affects them only through the moral influence of example’ (Robson 1963–1991, p. III.938). That Mill allowed this last encroachment leads us to the next point.

For OSF, the higher the (winning) motive in one’s actions, the more freedom one enjoys. Even though law might limit the choice to act in certain ways, there is, thus, no loss in freedom, no ‘comparative unfreedom’, so long as those limitations are part of social ‘arrangements and institutions’ which bolster social relations and thus foster the ‘higher moral life of mankind’ (Fosdick 1941, pp. 66–68). But this turned every aspect of daily life into a question of morality, i.e., that the ‘higher’ rather than the ‘lower’ motives ought to prevail in any action at all times. Mill criticized those ‘moralist[s] by profession’, who argue that individuals need to subordinate all their ‘egoistic propensities’ to their social feelings: ‘no motive but that of morality is permitted’ (Robson 1963–1991, pp. X.336 and 112). No more should be attempted to be enforced by moral sanctions as a rule of conduct, Mill argued, ‘than to prevent people from doing harm to others, or omitting to do such good as they have undertaken’ (Robson 1963–1991, p. X.339). In 1869, Mill was still firm on the central thesis of *On Liberty*: that ‘human nature should have freedom to expand spontaneously in various directions, both in thought and practice.’ For Mill, people ought not ‘resign into the hands of the rulers, whether acting in the name of a few or of the majority, the business of thinking for them, and of prescribing how they shall act’ (Robson 1963–1991, pp. V.745–6).

OSF exhibited none of the depth suggested by Mill’s analysis of permanence and progression in ‘Coleridge’ (Robson 1963–1991, pp. X.117–164) and expanded by his study of Henry Sumner Maine’s *Ancient Law* (1861) and *Village Communities in the East and West* (1871): it is quite important to inquire how ‘arrangements and institutions’ came to be and examine which of these ‘are grounded in permanent necessities of humanity, and which are but relics of facts and ideas of the past, not applicable to the present’ (Robson 1963–1991, pp. XXX.215). *Subjection* passionately discussed the extent in which women’s liberty was curtailed by ‘arrangements and institutions’ which were deemed by the powerholders to be ‘essential to the higher moral life of mankind’ (i.e., that the characteristic vocation of a woman is that of wife and mother). Even though both *On Liberty* and *Subjection* highlighted the importance for individuals to decide for themselves what might make for a ‘higher moral life’, *Subjection* painted an especially bleak picture how social institutions shape self-understanding, identity, and character to suit the ends of those in power in a long overdue reaction to Auguste Comte and other ‘moralists by profession’ (Loizides 2021, 2023). For Mill, ‘bad as well as good institutions create moral obligations; but to erect these into a moral argument against changing the institutions, is as bad morality as it is bad reasoning’ (Robson 1963–1991, p. V.445).

James P. Scanlan focused on an important inconsistency between OSF and *On Liberty* which Rees identified: OSF employed a normative or a positive sense of liberty, in contrast to *On Liberty*’s descriptive or negative sense (Scanlan 1958, pp. 197–99). Even though Scanlan was convinced by Rees that Mill could not have authored OSF, he pointed out that that was really a missed opportunity for Mill (Scanlan 1958, p. 201ff). He could have corrected an inconsistency within *On Liberty*. Mill nominally held the negative conception, while he was really arguing for a positive one. G. W. Smith (1980) elaborated upon Scanlan’s criticism. He examined in detail Mill’s approval of Albert Reville’s view on liberty (Robson 1963–1991, p. IX.458n). Smith’s translation of Reville’s main thesis echoed OSF: ‘[m]an, as a moral being, is free, when his spirit, having mastered his egotistical and animal instincts, effortlessly dominates his tastes, his actions and his entire life, in conformity with his developed moral nature’ (Réville 1863, p. 20; Smith 1980, p. 435). Smith agreed with Scanlan. The lack of a ‘conceptual apparatus’ was the reason Mill could reply to Edger (if Edger was indeed OSF’s author), that he had ‘much to say against several of your

positions, & especially against your definition of liberty' (Mill to Edger, 13 September 1862, in Robson 1963–1991, p. XV.793), while at the same time endorsing Réville's positive liberty in *Hamilton* and claiming that 'none but a person of confirmed virtue is completely free' in the 1868 edition of *Logic* (Robson 1963–1991, p. VIII.841). Smith's conclusion highlighted, once again, Mill's 'long vacillations and deep uncertainties' as regards fundamental liberal values, vindicating thus 'Miss Fosdick's thesis against Rees's attack' (Smith 1980, p. 449).

## 2.2. On Social Freedom and J. S. Mill's Reception

There is a marked contrast between Fosdick's and Rees's analyses as regards OSF. The former pointed out confusions, tensions, and inconsistencies within OSF, as well as in comparison with Mill's seminal works without questioning whether Mill was its author. The latter considered such confusions and inconsistencies as grounds to dismiss the attribution. Their disagreement is evidence of a change taking place in the reception of Mill's works in the mid-twentieth century. In 1962, David Spitz traced a direct line from Mill's early critics to the persisting representation of Mill as an unsystematic philosopher and called for a reconsideration of Mill's thought (Spitz 1962. See also, Nicholson 1998). In the years which followed, the reconsideration did take place. According to Alan Ryan (1970), by that time, Mill's status transformed from 'a good-natured but slack-minded eclectic' to a systematic moral and political philosopher (see further, Gray 1979).

Fosdick (1941, p. 3) complained that OSF was completely ignored by histories of political thought or studies on J. S. Mill. There was a reason to find fault with the omission, given the 'marked advance in Mill's thinking' (Fosdick 1941, p. 3).<sup>5</sup> In his highly influential *History of Political Theory*, George H. Sabine thought Mill's 'candor' or 'open-mindedness' were not enough 'to bring about a really coherent synthesis of philosophies so widely divergent' in liberal tradition (Sabine 1959, p. 706). In the 1937 edition, the phrase 'coherent synthesis' was missing. But Sabine had identified a formula in Mill's writings which implied his inability to achieve it:

On nearly every subject his general position was a highly abstract statement of the older utilitarian theory, but having stated the principle, he proceeded to make concessions and restatements until in the end the original theory was explained away without any new principle being put in its place. (Sabine 1937, p. 665).

Others were much harsher on Mill. For example, Benedetto Croce (1940, p. 34) had criticized the 'wretched and fallacious reasonings' of Mill's *On Liberty* for the 'widespread belief that liberalism is identical with utilitarian individualism, with "social atomism"'. OSF attacked 'social atomism'. Thus, for Fosdick (1941, p. 3), OSF illuminated the 'shift in his position from individualism towards socialism and idealism'.

J. S. Mill's 'traditional' representation as 'a good-natured but slack-minded eclectic' was never more pronounced than in John Plamenatz's examination of utilitarian thought. He too acknowledged Mill's 'candour', much like Croce (1940, p. 34) making note of Mill's 'sincere libertarian faith' and Sabine (1937, p. 665) of Mill's open-mindedness. However, Plamenatz thought the lack of logical rigor not just characteristic of Mill's *On Liberty*, but also of *Utilitarianism* and *Considerations of Representative Government*:

These three essays written by a sick man in his premature old age, exhibit all his defects as a thinker, his lack of clarity, his inconsistency and his inability either to accept wholeheartedly or to reject the principles inherited from his father and from Bentham. Mill's good qualities serve to accentuate his defects, for his candour causes him to admit one circumstance after another that cannot be reconciled with the assumptions he starts with. (Plamenatz 1949, p. 123).

Fosdick's Mill as a 'tired or tiring man' resonated with Plamenatz's Mill as 'sick man in his premature old age'.

'Consistency' was the ground on which the revision came to pass. In 1967, John M. Robson objected to those who had been arguing that the 'surely more profitable' method in 'reading Mill' was to look 'for the wood' rather 'than the trees', i.e., focusing on Mill's lessons

for posterity (especially as regards *On Liberty*) rather than the whole of his philosophical ideas. In such accounts, Robson complained, Mill becomes ‘confused, lacking in logical rigour, incapable of adapting examples to the principles they were intended to illustrate, and obsessed with the one infinitely valuable conviction, that personal idiosyncrasy is immensely precious.’ Robson thus called for ‘more careful analyses of the meaning of consistency and inconsistency in Mill’ (Robson 1967, pp. 1–2). Twelve years later, the contrast between ‘traditional’ and ‘revisionist’ interpretations of J. S. Mill’s thought was cemented (Gray 1979). Importantly, the debate still lingers on (see the exchange between Brown 2010; Miller 2010; See also Loizides 2013b, 2014b; Millgram 2019; Hansson 2022).

As we saw, for Scanlan (1958, p. 202), OSF could have saved Mill from inconsistency. OSF provided a ‘conceptual apparatus’ which his philosophy lacked. Revisionist interpretations have argued that Mill did in fact have such an apparatus. Alan Ryan led the wave of revisionist studies by being the first to highlight the importance of the ‘Art of Life’, as described in *Logic*, in interpreting J. S. Mill’s moral and political thought (Ryan 1964, [1991] 1965, 2014). Mill’s ‘Teleology’ or ‘Doctrine of Ends’ was a comprehensive framework for guiding action, distinguishing between final or primary ends and intermediate or secondary ends. The Principle of Utility justified as well as controlled subordinate domains of ends without itself being the sole end of action. It served as an umpire or a regulator in case claims of Morality (the Right), Prudence (the Expedient), and Aesthetics (the Noble or Beautiful) clashed (Robson 1963–1991, pp. VIII.949–952).

J. S. Mill intended the ‘Art of Life’ to answer fundamental questions about how individuals should act, what their ultimate goals should be, and how they should navigate the complex landscape of choices and consequences. Mill’s ‘Art’ acknowledged that human actions are driven by a desire to achieve specific ends, and it offered a systematic approach to achieving those ends effectively, without harming others in the process. The domain of ‘Expediency’ or ‘Policy’ emphasized the importance of making informed and strategic decisions. It suggested that individuals should plan their actions carefully, considering various factors such as time, place, and circumstances to maximize the likelihood of achieving their desired outcomes. Expedient actions are those that are most likely to directly bring about the intended end. The domain of ‘Morality’ involved distinguishing between actions that align with principles of justice, avoiding doing harm to others, and those that do not. Morality emphasized the concept of ‘punishability’, suggesting that actions may be subject to consequences by law, public opinion, or personal guilt. Moral actions are seen as being distinct from, and sometimes in conflict with, purely expedient actions. The domain of ‘Aesthetics’, in this context, referred to actions that were ends in themselves, driven by personal character rather than external expectations or consequences. These actions were spontaneous and natural expressions of an individual’s values and identity. Aesthetic actions are characterized by their intrinsic value and influence on others. Mill acknowledged that there may be conflicts and tensions among these principles: while some actions may be moral but not expedient, or noble but not immediately practical, the framework suggests that striving for the best course of action, considering all three principles, leads to a well-balanced and meaningful life (Loizides 2013a, ch. 7; Eggleston et al. 2011).

We can employ the ‘Art of Life’ to deal with the criticism brought forward by Scanlan (1958) and Smith (1980). In their discussion of OSF, they argued that Mill slipped from negative liberty to positive liberty, whereas OSF’s conception of liberty was consistently positive. A fundamental revisionist claim is that ‘Mill worked out a radical theory of moral requirement, closely related to his theory of liberty’ (Brown 2010, p. 5), even though there may be multiple readings of that relationship (Miller 2010, p. 47). Mill’s ‘Art of Life’ allows more nuance in the interpretation of *On Liberty*, *Utilitarianism*, *Representative Government*, and *Subjection* (Fletcher 2017, p. 297). Freedom from interference (e.g., *Principles*, *On Liberty*) or from domination (e.g., *Representative Government*, *Subjection*,) creates the space necessary to pursue a more fulfilling life (e.g., *Logic*, *On Liberty*, *Autobiography*). We are free in the first two senses when our vital interests are protected from infringement and when their protection ultimately rests on ourselves. We are free in the third sense, when we engage in

self-discovery and self-development. What we decide is a testament to our character, and others may not approve it (e.g., ‘Bentham’, *Logic, Principles, On Liberty, Comte*). Others may try to convince or to nudge us in a certain direction but never force us or make the decision for us. We may dedicate our lives to the service of others, to the common good, to art, or to science (i.e., a ‘higher’ happiness), but that noble dedication, that beauty of character and virtuous disposition, may never be exacted or expected from us as a debt, an obligation, or a duty, through legal or extra-legal means, social practices, and institutions (Riley 2010, 2013). OSF expanded the ‘Domain of Morality’ so as to subsume and subordinate all other humans ends and activities within it. Mill thus had the ‘conceptual apparatus’ to criticize Edger, if the latter was indeed the author of OSF.

### 3. Old Puzzle, New Tools: ‘On Social Freedom’ and Machine Learning

*On Liberty* was a monument of the intellectual work John Stuart Mill and Harriet Taylor Mill had done together (see, e.g., Robson 1963–1991, p. I.261). Rees was right to yield the point to Fosdick: it is more likely that Mill wrote a new essay rather than revise *On Liberty*, had he changed his mind on any of the latter’s arguments (Rees 1985, p. 179). But could OSF have been the essay to update *On Liberty*? The previous section answered ‘No.’ We suggested that Fosdick did not question the attribution to Mill because she was not bound by any preconceived notion concerning Mill’s consistency. Mill’s well-known candor and open-mindedness meant that a radical change in opinion—in a draft manuscript no less—was quite possible. However, the issue of consistency was not as easy to ignore. Mill was more systematic than typically supposed before Rees’s, Ryan’s, and Brown’s revisionist work.

Section 2 has used biographical, historical, and textual evidence in the examination of OSF’s authorship. The intellectual context of the debate on its authorship itself offered important insights for the task at hand. Section 3 examines OSF’s authorship through methods of computer-based or computer-assisted authorship identification. The range of techniques accessible to researchers has grown exponentially due to the increasing computational power of computers and the increasing difficulty of problems to be solved. (Holmes 1998; Love 2002, ch. 2; Stamatatos 2009; Neal et al. 2017). In what follows, we first introduce these new methods, and then we present the results of our tests using machine learning (ML) techniques on the matter of OSF’s authorship.

#### 3.1. New Solutions to Old Problems: Computer-Assisted Authorship Analysis

Paper no longer dominates written communication: text has migrated from print to screen. Figuring out the identity of the author of an unknown text has new solutions and applications. Often, much more is at stake than just solving an intellectual puzzle: from copyright infringement, appropriation of intellectual property and plagiarism (of either text or code), to fake news, cyber bullying, kidnapping, and terrorist threats (with notes, letters, and posts and even spyware, malware, or viruses). Typically, this involves statistical and ML techniques. A ‘machine’ models specific patterns that capture the behavior of a ‘system.’ An author’s style is one such system. Once models of different sets of behavior of systems, for example the writing styles of different authors, are created (learned or trained), then the ‘machine’ matches or classifies new / unknown data, which have been similarly modeled, under the existing models or classes. There are a lot of applications of such automation of processes of identification. For example, the pattern some use to unlock their phone could be a sequence of numbers, letters, special characters, face recognition, or even voice recognition. We are currently witnessing the exponential growth of stand-alone AI language models, but systems such as these are mostly used as assistance tools. Experts often need to examine the tool’s result, and it is certainly their responsibility to make the final decision.

At the core of all authorship analysis endeavors lies the assumption that texts reveal the identity of their authors. That irrespective of medium, whether by keys or pen, on screen or on paper, a residue of an author’s hand engrafts itself onto the text. ‘Authorial



fingerprint', 'authorial individuality', and 'authorial voice' are all expressions used to convey the idea that there is something unique in the text that marks out one author from another (e.g., [Coulthard 2004](#); [Juola 2006](#); [Burrows 2007](#)). Authorship analysis tries to identify such unique markers. Yet it is one thing to claim uniqueness, that some distinctive quality in the text itself (rather than the handwriting style, the ink, or the paper) separates an author from an impostor or a master from an apprentice. It is quite another to claim that we can detect causal links ([Burrows 2002, 2003](#)). In any case, some authorship identification studies make an even stronger claim (or assumption): one can infer characteristics of an author from characteristics of a text due to an element of unconscious determinism in authorial choices (e.g., [Holmes 1994](#); [Juola 2006, 2018](#)).

Tim [Grant \(2022, pp. 18–22\)](#) provides a useful taxonomy of authorship analysis tasks. For example, authorship attribution aims to identify a specific author via a unique identifier (e.g., name, handwriting), authorship profiling via identifying characteristics or features (e.g., age, gender, emotion), and authorship verification which aims to determine the author or a set of authors of a particular text. In recent years, adapting to specific settings and research questions, scholars have proposed many automated authorship analysis methods. (For example, [Swain et al. \(2017\)](#) survey forty different methods developed just between 2010 and 2016). In the most basic formulation of the authorship identification task, researchers examine whether the same person authored two, possibly short, texts. Moshe [Koppel et al. \(2012\)](#) argue that if we can solve this 'fundamental problem', we can solve any other authorship identification problem either in ideal settings or in less-than-ideal or in real-life settings. There are many factors that guide the selection of feature extraction at any given authorship identification task—e.g., language, medium, topic, genre. Broadly speaking, the number of candidate authors and the length of text available (both eponymous and anonymous) primarily guide the choice of method in the quest for better results. For the sceptic, however, what is better might never be good enough to replace the human expert, especially given the frequent lack of transparency in some automated systems' processes and/or results. For the remainder of this section, we briefly discuss these issues (see further, [Juola 2006](#); [Grant 2022](#)).

Beginning with authors, on the one hand, we might be confident that a single individual, within a group of potential authors, is the true author of an unattributed or anonymous work. This involves a 'closed-set' authorship analysis task. In some tasks, i.e., style variation studies, the 'closed set' could feature only one author (see further, [Burrows 1987](#); [Craig 1999](#)). For example, scholars in the nineteenth century utilized stylometric information to argue about the chronological order of Plato's dialogues (e.g., [Campbell 1867](#); [Lutoslawski 1897](#); see further, [Temple 1996](#)). Variations in writing style make identifying authorship more challenging but not impossible ([Hoover 2003](#)). For example, [Burrows and Craig \(2012\)](#) have argued that even though authors try to differentiate the idiolect of their characters, there is enough consistency in their authorial choices to distinguish their characters from the characters of other authors. In both cases, the closed-set scenario is a matter of correct identification: the task has a definite answer, even though we might never have the means to know what that is ([Rudman 2016](#)). On the other hand, we might have a group of authors who are not pre-defined, finite, or fully known. This involves an 'open-set' authorship analysis task. In an open set of candidate authors, anything goes: the set of authors under scrutiny might or might not include the true author. Add the complexity of thousands of potential authors, and then the identification is really 'in the wild' ([Koppel et al. 2011](#)). With an open set, we might never reach a definite answer, as the true author might not have been included in the group of candidates. Even though some systems dealing with such scenarios might be capable of determining that no one is the author. However, in some cases, one can recast such a scenario as a verification task ([Koppel et al. 2007](#); [Koppel et al. 2011](#)).

Let us take our own task as an example: is John Stuart Mill, author of *On Liberty*, *Utilitarianism*, *August Comte and Positivism*, and 'Chapters on Socialism,' the author of 'On Social Freedom'? We could render this verification task into a two-class classification problem:

does the anonymous text share the attributes of the class ‘YES, it belongs to John Stuart Mill’s works’ or attributes of the class ‘NO, it does not belong to John Stuart Mill’s works.’ To do so we need to introduce into the series of tests a third set of texts: texts from an author or a group of authors whom we do actually think a good match to the anonymous text (as in our case) or from a group of ‘impostors’ (e.g., [Koppel et al. 2012](#); [Potha and Stamatatos 2017](#)).<sup>6</sup> In either case, we are enabled to use eponymous text samples to extract authorial markers to search for in the anonymous text.

The next issue, then, involves the extraction of relevant markers from texts. Historically, researchers have attempted to uncover ‘authorial fingerprints’ by focusing on various features, often in combination. These attempts are deeply rooted in the belief that every author, as we saw, whether knowingly or not, imbues their writings with unique stylistic and structural nuances (see further, [Juola 2006](#); [Neal et al. 2017](#); [Grant 2022](#)). In an influential article, Efstathios [Stamatatos \(2009\)](#) identified four main types of features used in authorship analysis studies, especially stylometric: syntactic, lexical, semantic, and character features. The first primarily explores the very bones of sentence construction: a choreography of punctuation, function words, and other structural patterns that often emerge as consistent markers of a particular author’s style. Once a piece of text, second, is broken down into individual words, i.e., ‘tokenized’, the focus shifts to various facets: the length of words and sentences, the frequency with which certain words appear, sequences in which words are organized, potential errors, and the overall richness of the vocabulary. Venturing beyond mere words, into semantic features, scholars zoom in on underlying meanings. How does an author navigate the intricate world of synonyms? How does the presence of one word influence or dictate the appearance of others in the same context? Such interdependencies, when persistently and consistently observed, can act as strong markers of authorial identity. Finally, many choose to dive into character feature extraction, bypassing words and sentences altogether, focusing rather on the characters that make them (e.g., letters, numbers, punctuation marks). In this last type of feature extraction, the authorial patterns that emerge might not be visible to the expert’s eye.

However, the process is not without its challenges. One such challenge is determining the ideal corpus size: how much text is enough to reliably detect an author’s unique signature. [Burrows \(2007\)](#) posited that a corpus size of 10,000 words forms a robust foundation for creating an author’s set, stipulating a minimum of 500 words for each text sample. In contrast, Maciej [Eder \(2015\)](#) succeeded in the authorship analysis tests with 5000 words. He noted that even with this reduced size, smaller excerpts well below 500 words could still serve as reliable indicators of authorship, including in multi-lingual contexts. Nevertheless, [Eder \(2017\)](#) pointed out potential distortions in the so-called ‘authorial signal’ arising from variables such as topic and genre, adding layers of complexity to the identification task. For instance, while cross- topic verification may be simpler, cross-genre verification presents more complexities ([Luyckx 2010](#); [Kestemont et al. 2012](#)).

The third issue to be considered is authorship analysis methodology. As [Stamatatos \(2009\)](#) shows, two general approaches stand out: profile-based and instance-based methods. Profile-based methods strive to amalgamate the collective style of the works of an author fed into the system. This aggregated style then becomes a benchmark against which other texts are compared, ranking authors based on the stylistic proximity or distance from the text in question. Variation, nuances, and development in the style of an author are disregarded: the profile that emerges identifies patterns and uniqueness from all texts inputted. Instance-based methods aim to train a classifier that is a sophisticated algorithm designed to discern patterns within the system’s data. Unlike profile-based methods, instance-based methods use individual eponymous texts. Once trained, this classifier categorizes unidentified texts, depending on the specific parameters of the identification task, such as the number of candidate/potential authors and available texts. Under supervised conditions, training a reliable classifier requires multiple texts from each candidate author, correctly labeled. Under unsupervised conditions, the ML system self-organizes the unlabeled input data according to some common property. A distance-measuring method seems better adapted

for smaller training and test corpus size. In contrast, an ML classifying method yields better results with larger corpus sizes (Koppel et al. 2012). All this information can be modeled using sophisticated classifiers, such as Artificial Neural Networks (ANN), or Support Vector Machines (SVM) to produce automated results.

Despite the strides achieved in non-traditional authorship identification, there is less consensus about applicability and reliability than desired. Depending on the task at hand, the results might be vitiated by inter alia the number of candidate authors, authorial variation, corpus size, topic- and genre- variation. This is why, for example, Patrick Juola (2006, pp. 242–43) considers the *Federalist Papers* problem (since Alexander Hamilton and James Madison both claimed single-authorship to the same group of essays published under the name ‘Publius’) an ‘almost perfect test-bed for new methods of authorship attribution.’ Not only is there a small closed-set of candidate authors (Hamilton and Madison), a large corpus size, both for training (65 essays) and for test (12 disputed essays), but also all essays dealt with the same topic, in the same genre, via (mostly) the same medium, for the same (rhetorical purpose), at the same period of time (roughly six months between late 1787 and mid-1788). It is small wonder then that the *Federalist Papers* was the subject-matter of the paradigm-sifting study by Mosteller and Wallace (1964).

The Mosteller and Wallace pioneering study in non-traditional authorship identification had serious flaws, however (Rudman 2010). Recent non-traditional studies on the corpus contest their attribution of all twelve disputed essays to Madison (Collins et al. 2004; Miranda-García and Calle-Martín 2012; Savoy 2013). What is more, the flaws which characterize the Mosteller–Wallace study, according to Joseph Rudman, are endemic to most studies in the non-traditional authorship identification field. Most studies in this field lack scientific rigor at all or at different stages of the investigation: e.g., the framing of the problem and the research question, the design and implementation of the experiment (especially as regards the preparation of the texts, either training/control or test), and its replication as well as the duplication of its results (Rudman 1998, 2000, 2003, 2005, 2006, 2011, 2012, 2016).

### 3.2. Did J. S. Mill Write OSF? Texts, Method, and Results

So far, we have revisited the circumstances of OSF’s publication and discussed the reception of J. S. Mill as an inconsistent philosopher. We have tried to answer the question of OSF’s authorship in the conventional way: by highlighting some severe contradictions between OSF and his corpus, we argued that J. S. Mill was not the author. We have also laid the groundwork necessary to present an unconventional answer to the same question. In ideal settings of an authorship analysis task, researchers operationalize ample writing samples from a short list of candidate authors in their examination of a piece of writing of doubtful origin. In less-than-ideal settings, researchers work with what they have, especially as regards corpus size. In either setting, however, it is important to maintain high scientific standards: both in corpus preparation and experiment design and implementation. Results in computer-assisted authorship identification may be compromised by the number of candidate authors, authorial variation, corpus size, and topic- and genre- variation. Now that we have introduced the field to the novice, we turn to our own computer-assisted authorship verification attempts. We framed it as a two-class classification task.

We have at least one viable lead to create the second class: ‘E. R. Edger’, according to Elliot (1910, I.259). E. R. Edger must have been Ebenezer Rust Edger (1829–1898), George Jacob Holyoake’s associate in the 1860s. According to Holyoake, who was a leader in the cooperative (and secularist) movement(s), Edger was involved in the editorship of the 1863–1864 issues of *The Reasoner*, published at that time as *Secular World (and Social Economist)* and later, following another change of the journal’s name, served as chief writer for the *Social Economist* (Holyoake 1875–1879, II.204, 365). A graduate of the University of London (BA Honours Mathematics 1849), Edger also passed an examination for Anatomy (first class) in 1869 (see University of London 1912). A handbill for a series of lectures at the

Hall of Science in November 1861, among Holyoake's papers, includes Edger as a speaker (Bishopsgate Institute, Holyoake Papers, box 2, volume 11, 'Engagement Diary').

The problem with this identification for the present task, however, is that, to our knowledge, there are no literary remains of E. R. Edger. However, as we saw, style-variation studies argue that there is enough consistency in authorial choices to distinguish between two different authors even when they attempt to differentiate the idiolect of their characters (Burrows 1987; Burrows and Craig 2012). This allowed us to test whether there is enough consistency in *Social Economist* to distinguish it from John Stuart Mill's 'authorial fingerprint.' Four writers provided original articles under Edger's editorship: 'Philodemos', 'E. W.', and 'A.' were obviously anonymous. The fourth was 'Edgar White', about whom Holyoake made no mention in his works.<sup>7</sup> We proceeded to 'train' two classes: works from J. S. Mill (JSM) formed 'Class 1' and the articles from the *Social Economist* section of the *Secular World and Social Economist* (SWSE) formed 'Class 2'. Essentially, the latter served the class of works that do not belong to J. S. Mill, as we saw earlier. Chunks of text of 'On Social Freedom' (OSF) were to be classified automatically by the ML system under one of these two classes. To replicate our results, we ran the tests twice. The second time we reversed the classes of the two training sets.

First, to increase confidence in our results, we combined a profile-based method with an instance-based method: we created a cumulative representative style for JSM and SWSE and ran the tests with a variety of features and different instances in terms of length, that is, for every 50 words, 100 words, 200 words, 300 words, etc., up to 1000 words. We followed the methods and applications in our earlier work (Neocleous and Loizides 2020; Neocleous et al. 2022), having specifically designed an ML system to examine questions of authorship and collaboration involving J. S. Mill's corpus.

Second, we included all original articles we found from issues during Edger's editorship of *Social Economist* that were available in three London Libraries: the British Library, LSE Library and the University of London Library. But to minimize topic- and genre-variation, which could vitiate the results, we had to carefully chose texts from J. S. Mill's corpus. *On Liberty* (OL) and *Utilitarianism* (U) were obvious choices given OSF's topics and themes. Interestingly, the SWSE articles had little to no themes relevant to these which increased the risk that words associated with these themes (i.e., individualism, liberty, higher, lower) would lead to OSF's classification under JSM. In contrast, the SWSE articles and OSF shared themes with J. S. Mill's *Auguste Comte and Positivism* (ACP) and 'Chapters on Socialism' (COS). Therefore, we used these four texts by J. S. Mill to build models and run experiments.

Third, we used the standard edition for John Stuart Mill's (Robson 1963–1991) as digitized by Liberty Fund and we digitized the SWSE articles ourselves. We did not intervene in the texts, preserving spelling and punctuation. However, we did remove some text that was not written by the authors, such as long quotes (i.e., over 50 words), title/chapter headings, pagination, notes, references, italicization, and editorial notes/comments/variants (including characters/symbols to this purpose) that contaminated our writing samples.

Fourth, we were mindful of corpus size imbalance, even though the ML system we used has built-in safeguards (see Neocleous et al. 2022, p. 20942). ACP and OL had similar size to SWSE. U and COS were smaller in size, but well over 10,000 words which is an acceptable minimum corpus size, as we saw. However, we did run additional tests: first, we built models with U and COS joined together, not just individually. Second, we built models with J. S. Mill's COS as Class 1 and Edgar White's corpus as Class 2. We used Edgar White's corpus for two reasons. For one, his corpus, similar in size to COS, was the biggest of all other SWSE authors. For another, running tests comparing his corpus against every other SWSE author, OSF was consistently classified in his class. In total, we build more than a hundred models with all these different combinations and classes.

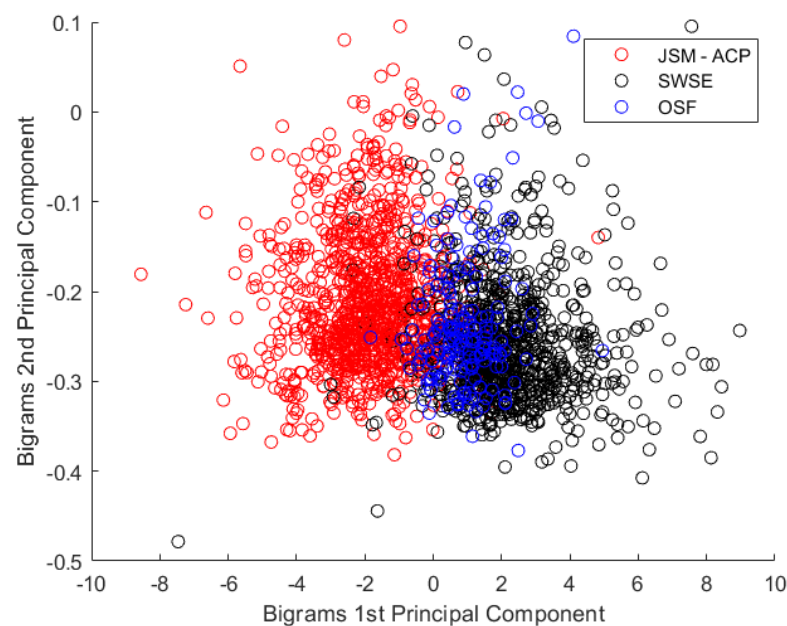
If OSF was classed under JSM, we would be right where we started: we would still need to identify other viable candidates, given the historical and textual analysis in Section 2. But if OSF was classed under SWSE, then we would have corroborated the verdict reached



by traditional means by a non-traditional method. In all these experiments, the ML system classified OSF under SWSE rather than JSM. OSF did not belong to the class ‘John Stuart Mill’s works’.

To recap: authorship analysis using machine learning is a process that involves training a computer program to identify the author of a given text by analyzing distinct writing patterns. It begins by assembling texts from different authors for training purposes. These texts are then analyzed to extract features such as word usage, sentence structure, and punctuation preferences. These extracted features are transformed into a format that a machine learning algorithm can understand. By selecting an appropriate algorithm and feeding it both the features and the corresponding author labels from the training texts, the model learns to associate specific writing traits with each author. After training, the model’s accuracy is evaluated using separate texts that it has not seen before. Once validated, the model can predict the likely author of unknown texts by analyzing their features and identifying unique markers.

In Figure 1, we present a comprehensive view of our analysis, where two specific features have been extracted and compared across two distinct classes. In this example we show the first two principal components of the bigrams features for class 1 being the training set from J. S. Mill’s *Auguste Comte and Positivism* (Robson 1963–1991, pp. X.261–368) and class 2 the set from *Secular World and Social Economist*.



**Figure 1.** Visualization of the classification process.

In this graphical representation, each data point corresponds to an instance of 50 words from individual pieces of text within the dataset. The two axes of the graph are dedicated to the selected features, which have been carefully chosen based on their relevance and potential impact on class separation. The position of each point on the graph is determined by the values of these two features. As a result, the graph provides a visual snapshot of how the text data is distributed in the feature space for the two classes under consideration. For those unfamiliar with graphical representations of this kind, the graph shows how different pairs of words (bigrams), once complexity is reduced and the most important patterns identified (through principal component analysis—PCA), are related to each other based on their frequency and meaning in three sets of texts: J. S. Mill’s, E. R. Edger’s collaborators’, and OSF’s. The blue cluster (OSF) is closer to the black cluster (SWSE) than to the red cluster (JSM), which means that it has more affinity with the text supplied by Edger’s associates than with J. S. Mill. The red cluster, being more spread out, suggests diversity and variation, whereas the blue and black clusters suggest greater consistency

and similarity. Expectedly, some data points—of all colors—are farther distributed in the feature space, which means that they are rare or even irrelevant pairs of words.

One of the most striking aspects of this graph is the way the data points are distributed across the feature space. By analyzing the positioning and density of points for each class, it becomes evident whether the chosen features hold discriminative power. The figure at hand encapsulates a notable scenario where a pair of well-defined features is employed to differentiate between two distinct classes. During the training phase, the selected features effectively segregate the training data points into separate classes, creating distinct clusters for each category. This outcome underscores the success of the feature selection process in capturing the inherent differences between the classes. However, the most intriguing aspect emerges when examining the test data points. As anticipated, these instances are accurately classified into one of the two classes, aligning with the expectations set during the training phase. This alignment affirms the reliability of the selected features and the model's capacity to generalize its classification prowess to previously unseen data.

The sharp distinction observed in the training data's distribution, as well as the accurate classification of the test data, carries profound implications. Firstly, it validates the discriminative power of the chosen features, reaffirming their ability to effectively encapsulate the essence of each class. This validation, in turn, bolsters confidence in the feature extraction process and its alignment with the underlying characteristics of the classes. Furthermore, the alignment between the test data's classification and the anticipated outcome illustrates the model's robustness in handling real-world scenarios. It showcases the model's ability to not only learn from the training data, but also to generalize its understanding to make accurate predictions on new and unseen data points. In essence, the figure narrates a story of consistency and reliability. The clear separation between classes in the training phase, combined with the accurate classification of the test data, reinforces the effectiveness of the selected features and the model's aptitude for practical application. This alignment holds significance for both research and application, illustrating the successful translation of theoretical concepts into practical results.

#### 4. Conclusions

In 1966, 'On Social Freedom' was included in the annotated bibliography of *Evidence for Authorship; Essays on Problems of Attribution* (Erdman and Fogel 1966, pp. 509–10) as the one authorship problem involving John Stuart Mill. We think that that case can finally rest with high confidence—both traditional and non-traditional methods suggest that J. S. Mill was not the author.

In *Autobiography* (1873), J. S. Mill claimed that *On Liberty* was written by both him and Harriet Taylor Mill and that *The Subjection of Women* ought to be thought of as another product of collaboration, adding Helen Taylor to the list of authors (Robson 1963–1991, pp. 257, I.265). Neither was published with either Harriet or Helen as co-authors. The issue of their respective contributions (although most ignore Helen's contribution) is still debated. And that is a complicated authorship-analysis problem that warrants more attention.<sup>8</sup>

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**Conflicts of Interest:** The authors declare no conflict of interest.

## Notes

- <sup>1</sup> <https://www.britannica.com/quotes/John-Stuart-Mill>. Last accessed 5 October 2023.
- <sup>2</sup> All works by John Stuart Mill are cited as published in (Robson 1963–1991), followed by volume number and page number.
- <sup>3</sup> Helen Taylor was John Stuart Mill’s stepdaughter.
- <sup>4</sup> These notes had been part of the original publication in 1907 (Anon 1907).
- <sup>5</sup> Fosdick had just made some use of the essay in her own treatise on liberty (Fosdick 1939, pp. 47, 111).
- <sup>6</sup> For a detailed discussion and assessment of verification methods as applied in computer text forensics, see (Halvani et al. 2019).
- <sup>7</sup> Incidentally, ‘White’ was Edger’s mother’s maiden name.
- <sup>8</sup> Three recent computer-assisted stylometric analyses have been attempted on this collaboration. See (Neocleous et al. 2022; Schmidt-Petri et al. 2022; Neocleous and Loizides 2020).

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