DID KEYNES HAVE SYPHILIS?

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Fecha de recpeción: 29 de agosto de 2024
Fecha de aceptación: 15 de diciembre de 2025

> Disease, and most specially opprobrious, suppressed, secret disease, creates a certain critical opposition to the world, to mediocre life, disposes a man to be obstinate and ironical toward civil order
>
> —Thomas Mann, *Doctor Faustus*

Resumen: Basándose en material de archivo hasta ahora inédito, este artículo explora la hipótesis de que John Maynard Keynes pudo haber padecido sífilis. A partir del marco clásico para el diagnóstico retrospectivo de esta enfermedad, se analizan su vida sexual, la evolución de sus síntomas y los tratamientos médicos que recibió. Un aspecto especialmente revelador es que la mezcla de sustancias tóxicas que le administraron en los años previos a su muerte coincide con el Tratamiento Combinado que entonces se empleaba contra la sífilis. El estudio pone en duda que sufriera endocarditis bacteriana y plantea que la sífilis cardiovascular es la explicación más plausible. Además de su problema cardíaco, el artículo ayuda a comprender mejor el estado de salud general de Keynes.

Palabras clave: John Maynard Keynes; sífilis; endocarditis bacteriana.

Clasificación JEL: B20; B31.

Abstract: Drawing on previously unpublished archival material, this paper considers the hypothesis that John Maynard Keynes had syphilis. Applying the classical framework for retrospective syphilis diagnosis, the paper examines his sexual history, evolving symptoms, and medical treatments. Most notably, the mix of toxic substances he received in the years before his death was the

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standard Combined Treatment for syphilis. This investigation raises substantial doubts about bacterial endocarditis and proposes cardiovascular syphilis as the most plausible alternative. Beyond his heart condition, the paper contributes to a broader understanding of Keynes's health.

Keywords: John Maynard Keynes; syphilis; bacterial endocarditis.

JEL Classification: B20; B31.

I.
INTRODUCTION

It is notoriously difficult to determine the cause of death of historical figures. For much of history, systematic medical records were either nonexistent or inadequate by modern standards. The absence of modern diagnostic tools such as imaging, laboratory tests, or pathology makes it difficult to identify the precise cause of death for many historical figures. Historians must often rely on secondhand accounts—sources prone to error and bias. These challenges collectively constitute what scholars call the problem of retrospective diagnosis. As a result, historians are often limited to offering hypotheses rather than definitive conclusions about the cause of death.

John Maynard Keynes died of heart failure on the morning of April 21, 1946. The mystery surrounding his death involves the underlying cause of his long-term heart condition. The prevailing view is that he had bacterial endocarditis—a bacterial infection of the inner lining of the heart chambers and heart valves. Robert Skidelsky (2000) popularized this view, and it is often repeated in the literature. For example, Gilles Dostaler wrote, "On May 16, 1937, Keynes suffered a serious heart attack caused by a bacterial endocarditis" (2007, 215). According to Richard Davenport-Hines, "In 1937 he became dangerously ill with bacterial endocarditis" (2015, 310)[1].

The words "bacterial endocarditis" do not appear anywhere in Keynes's surviving medical records. These words are never

[1] Also see Wapshott (2011, 83), Steil (2013, 93), Conway (2014, xiv, 5-6, 91-92), and Cristiano (2014, 4).

mentioned in his official biography by Roy F. Harrod (1951). They cannot be found in Keynes's *Collected Writings* (Keynes 1971-1989). Donald E. Moggridge was a managing editor of the *Collected Writings*, but he never mentions bacterial endocarditis in his authoritative Keynes biography (Moggridge 1992). In fact, Skidelsky (1992) originally denied the diagnosis. His wavering suggests that he lacks decisive proof for or against the condition. Scholars must approach the bacterial-endocarditis hypothesis as just that—a mere hypothesis.

Drawing on previously unpublished archival material, this paper examines an alternative hypothesis: Keynes had cardiovascular syphilis. At the outset, it is important to stress that this is a hypothesis. Conclusive proof of syphilis is relatively new in the history of the disease. There were no blood tests until Keynes was in his mid-twenties. Before this time, "the Pox was identified by the cumulative weight of many 'suspicion arousers'" (Hayden 2003, xvii). Given the preponderance of evidence, open-minded scholars cannot ignore the possibility that he had cardiovascular syphilis.

The next section offers background on syphilis and a framework for its retrospective diagnosis. Section three covers Keynes's sexual history to illustrate that he put himself at extreme risk of contracting syphilis. The fourth section examines the period in which he allegedly suffered secondary syphilis. Sections five and six are the most significant, as they show Keynes received the leading treatments for syphilis after May 1937. The seventh section covers potential problems with the syphilis and bacterial-endocarditis hypotheses.

II.
BACKGROUND AND FRAMEWORK

It can be difficult for people living in the age of antibiotics to comprehend the great historical significance of syphilis. It not only caused much suffering and death, but it had a profound impact on the development of commerce and empire (Harrison 2004; Hays 2010). Although hundreds of millions have had the disease since 1495, historians suspect many famous figures had syphilis: Columbus, Henry VIII, Ivan the Terrible, Shakespeare, Napoleon, Beethoven, Darwin, Lincoln, Dickens, Nietzsche, Lenin, and Hitler.

During Keynes's life, approximately 15 percent of the population in Europe and America had syphilis (Hayden 2003, 305). A leading syphilologist wrote in the decade of Keynes's death, "Syphilis ranks with cancer, tuberculosis, and pneumonia as one of the four greatest killing diseases" (Moore 1943, 35).

In Keynes's case, it is essential to remember that syphilis is a disease that kills slowly over many years. It commonly develops through three stages: primary syphilis, secondary syphilis, and tertiary syphilis. Moreover, there are typically latent periods after the primary and secondary stages. Table 1 is a staging chart that shows the timing and description of each stage. Concerning Keynes, it reveals that cardiovascular syphilis typically develops in the tertiary stage fifteen to thirty years after initial infection.

TABLE 1.
SYPHILIS STAGING CHART

Stage	*Time from Exposure*	*Duration*	*Description*
Incubation Period		Average: 3 weeks Range: 1-12 weeks	After exposure to the bacterium *Treponema pallidum*, there is an incubation period before symptoms appear.
Primary Syphilis	Average: 3 weeks Range: 1-12 weeks	Average: 3 weeks Range: 1-6 weeks	A chancre (a painless, ulcerative sore) appears at the site of infection. The chancre is usually genital, anal, or oral. The highly infectious chancre may go unnoticed and heals spontaneously.
Early Latent Period	Average: 6 weeks Range: 2-18 weeks	Average: 6 weeks Range: 4-8 weeks	The infection commonly enters a dormant phase, during which no symptoms are present.
Secondary Syphilis	Average: 12 weeks Range: 6-26 weeks	Average: 4 weeks Range: 2-6 weeks	The patient suffers a general infection characterized by symptoms such as fever, rash, and various mucous membrane lesions. The rash can cover the entire body or be hardly noticeable. Mucous membrane lesions can cover the tongue, tonsils, cheeks, and lips.

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Stage	*Time from Exposure*	*Duration*	*Description*
Late Latent Period	Average: 16 weeks Range: 10-32 weeks	Years or decades	The infection commonly enters a dormant phase, during which no symptoms are present.
Tertiary Syphilis	15-30 years	Years or decades	Severe complications, such as damage to the heart, blood vessels, brain, nerves, bones, joints, mouth, and other organs.

Sources: Moore (1943, 7-9), Stokes (1944, 25-26), French (2007, 144), and Loscalzo et al. (2022, 1407-1410).

Note: This chart is standard, but syphilis progression can vary significantly between individuals. Moreover, syphilis affects the body even during latent periods.

Since Keynes's treatment plan in the 1930s and 1940s is central to the syphilis hypothesis, it is necessary to provide a brief overview of how syphilis was treated during his life. Mercury was the primary substance used to treat syphilis from 1497 to 1910. Syphilologists added iodides to the treatment plan in the 1830s. Mercury and iodides were still the main substances used to treat syphilis when Keynes became sexually active in 1901 (Abraham 1948).

In 1905, Fritz Schaudinn and Erich Hoffmann discovered that the bacterium *Treponema pallidum* is the causal organism of syphilis. This was a significant breakthrough that paved the way for more accurate diagnosis and treatment. August von Wasserman introduced the first blood test for syphilis in 1906. In 1909, Paul Ehrlich and Sahachiro Hata identified the arsenic compound arsphenamine (Compound 606). The following year it was branded as Salvarsan, and it quickly became the most prescribed drug in the world. In 1912, the safer compound neoarsphenamine was branded as Neosalvarsan. In the years before Keynes died, arsenical therapy was "the primary form of treatment of syphilis" (Parascandola 2009, 17).

In 1921, syphilologists discovered that the heavy metal bismuth enhances the efficacy of arsenicals. This ignited a new therapeutic era in which "Combined Treatment" with mercury, iodides, arsenic,

and bismuth was the main treatment for syphilis (Stokes 1944, 163; Quétel 1990, 143). Discovered in 1932, Prontosil was the first commercially available antibiotic after 1935. Unfortunately, it did not work on syphilis. Finally, John Mahoney and his collaborators successfully cured syphilis in 1943 with penicillin. It became widely available in 1945, but it could not reverse prior damage done by the disease (Moore 1943, 286).

In connection with Keynes, it is important to stress two aspects of syphilis: (1) it was a secret disease, and (2) it was difficult to diagnose. First, syphilis is primarily a sexually transmitted—or venereal—disease. Consequently, it has always been highly stigmatized. Since they faced shame and ostracism, syphilitics commonly went to extreme lengths to hide their condition. Syphilis was known as the "Secret Malady" (Merians 1996). Syphilitics confided only in close friends, family, or doctors who were sworn to absolute secrecy. As a result, references to syphilis are often absent from letters, diaries, medical reports, and death certificates.

> "The word syphilis was taboo … [It was] rarely written, either in correspondence or in print, and even more rarely spoken, and then only to a few intimate friends of the poor victim, with an implicit agreement that it was never to be repeated … Doctors had to be trusted to maintain confidentiality, often at the cost of great ethical conflict if there was known risk of the disease being spread." (Hayden 2003, 60)

Second, syphilis was particularly difficult to diagnose before reliable blood tests became available in the twentieth century. It has been called "The Great Imitator" and "The Great Pretender" because it mimics so many different diseases (Hutchinson 1879; Vora and French 2018). It can attack any part of the body, and symptoms vary widely from patient to patient. As the legendary syphilologist John H. Stokes (1944, 1) wrote,

> "Syphilis is an infectious disease due to *Spirochaeta pallida*; of great chronicity; systemic from the outset; capable of involving almost every structure of the body in its course; distinguished by a florid of manifestations on the one hand and years of completely asymptomatic latency on the other; able to simulate a large proportion of the entities comprising the field of medicine … [Syphilis is

> treatable] by the use of derivatives of arsenic, mercury, bismuth, the iodides, and nonspecific fever therapy. To this range and to this essentially Machiavellian facility in disguise, deceit and malevolence we owe an interest to syphilis."

The culture of secrecy surrounding the disease, coupled with its protean nature, led syphilologists to develop the classical framework for diagnosing syphilis (Hutchinson 1909; Hayden 2003). The classical framework focused on six questions:

1. Did the patient engage in high-risk sexual activity?
2. Did the patient have a sudden change in health?
3. Did the patient suffer various sicknesses in the years after the sudden change in health?
4. Did the patient's various sicknesses cause confusion?
5. Did the patient receive substances used to treat syphilis?
6. Did the patient have a cause of death consistent with syphilis?

III.
KEYNES'S SEXUAL HISTORY

Sexual history is central to the retrospective diagnosis of syphilis. Thus it is necessary to address Keynes's sexual history. First, he was a homosexual. While this was unknown to the public for decades, it was always an open secret in British academic circles (Lawlor 1995, 180). Michael Holroyd revealed Keynes's sexuality to the public in his 1967 biography *Lytton Strachey* (Holroyd [1967] 2005). After 1967, "the convention of not talking about his homosexuality [was] followed even by those post-Holroyd writers on Keynes" (Skidelsky 1983, xxii). By the mid-1980s, scholars could openly discuss the "promiscuous nature of that homosexuality" (Himmelfarb 1986, 43).

Along with surviving medical records, Keynes's sex diary is the key piece of documentary evidence in the syphilis hypothesis. He kept detailed records of everything from his expenses to his gambling winnings and golf scores (Dostaler 2007, 158). His habit of meticulous record-keeping carried over to his sex life. The *Keynes Papers* contain four handwritten sheets related to his sex life—the

so-called sex diary (Moggridge 1992, 288-89)[2]. Table 2 is Keynes's tabulations of his sexual activity from May 1906 to August 1915. There is some mystery surrounding Table 2 because it is written in code. Specifically, he labels three of the columns *c*, *a*, and *w*. While it is uncertain what these labels mean, scholars have speculated (Zimroth 2008). Table 2 suggests that Keynes averaged 18.46 encounters per quarter—or about seventy-four per year.

Table 3 lists the full names of his partners from 1901 to 1915 along with the initials he recorded in his diary[3]. There are two key takeaways. First, Keynes was never monogamous in the period 1906 to 1915. The list shows that he maintained relationships with several regular lovers over multiple years. Still, he never had an exclusive relationship with any of his long-term lovers. That he and his regular lovers were not monogamous increased his risk of contracting syphilis (sexual concurrency risk).

TABLE 2.
KEYNES'S TABULATIONS OF HIS SEXUAL ACTIVITY (1906-1915)

Year	*Months*	*c*	*a*	*w*	*Total (Quarterly)*	*Total (Last 4 Quarters)*
1906	May 13-Aug 12	4	11	4	19	
	Aug-Nov	1	8	7	16	
	Nov-Feb	3	12	4	19	
1907	Feb-May	3	12	4	19	73
	May-Aug	2	20	3	25	79
	Aug-Nov	1	15	3	19	82
	Nov-Feb	2	18	1	21	84
1908	Feb-May	1	12	3	16	81
	May-Aug	17	4	4	25	81
	Aug-Nov	28	0	3	31	93
	Nov-Feb	16	4	2	22	94

…/…

[2] See plates 9 and 10 of the photo inserts.
[3] See Moggridge (1992, 838-39) for the full names of Keynes's partners.

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Year	*Months*	*c*	*a*	*w*	*Total (Quarterly)*	*Total (Last 4 Quarters)*
1909	Feb-May	20	4	2	26	104
	May-Aug	12	7	2	21	100
	Aug 13-Nov 12	13	4	0	17	86
	Nov-Feb	16	3	2	21	85
1910	Feb-May 12	10	3	3	16	75
	May 13-Aug 12	1	9	5	15	69
	Aug 13-Nov 12	8	6	6	20	72
	Nov 13-Feb 12	7	9	2	18	69
1911	Feb 13-May 12	11	5	2	18	71
	May 13-Aug 12	16	4	5	25	81
	Aug 13-Nov 12	3	8	2	13	74
	Nov 13-Feb 12	9	2	1	12	68
1912	Feb 13-May 12	6	6	4	16	66
	May 13-Aug 12	12	4	0	16	57
	Aug 13-Nov 12	4	10	5	19	63
	Nov 13-Feb 12	8	6	4	18	69
1913	Feb 13-May 12	7	7	4	18	71
	May 13-Aug 12	11	6	3	20	75
	Aug 13-Nov 12	7	8	4	19	75
	Nov 13-Feb 12	4	7	2	13	70
1914	Feb 13-May 12	10	3	1	14	66
	May 13-Aug 12	8	5	0	13	59
	Aug 13-Nov 12	7	6	0	13	53
	Nov 13-Feb 12	7	5	1	13	53
1915	Feb 13-May 12	7	7	5	19	58
	May 13-Aug 12	7	6	5	18	63

Source: Keynes Papers (PP/20A/1). Also see plate 9 in Moggridge (1992, 288-289).

Note: In 1915, Keynes miscounted in Feb 13-May 12. He recorded 21, but the actual total is 19.

TABLE 3.
JMK'S LIST OF SEXUAL PARTNERS

Year	*Name*
1901	Alfred Dillwyn Knox (ADK)
1902	Alfred Dillwyn Knox (ADK) Daniel Macmillan (DM)
1903	Nil
1904	Nil
1905	Nil
1906	Lytton Strachey (GLS) James Strachey (JBS) Arthur Hobhouse (ALH)
1907	Lytton Strachey (GLS) James Strachey (JBS)
1908	Lytton Strachey (GLS) James Strachey (JBS) Duncan Grant (DG)
1909	James Strachey (JBS) Duncan Grant (DG) Francis Arthur St. George Nelson (StG) Stable boy of Park Lane
1910	Duncan Grant (DG) Francis Birrell (FB) Francis Arthur St. George Nelson (StG)
1911	Duncan Grant (DG) Jack Colby Rosario Sciacca 16-year-old under Etna Auburn haired of Marble Arch Francis Arthur St. George Nelson (StG) Lift boy of Vauxhall Black boy
1912	Duncan Grant (DG) Benoy Kumar Sarkar (BKS) Scientist Jew boy Patrick John Chester Purves (Chester)
1913	Duncan Grant (DG) Francis Arthur St. George Nelson (StG) Patrick John Chester Purves (Chester) Francis Birrell (FB) Sidney Russell-Cooke (Cookie) Brush Salem Cairo Benoy Kumar Sarkar (BKS)
1914	Francis Arthur St. George Nelson (StG) Benoy Kumar Sarkar (BKS) Sidney Russell-Cooke (Cookie) Arthur Elliot Felkin (Felkin) Duncan Grant (DG)
1915	Duncan Grant (DG) David "Bunny" Garnett (BG) Francis Birrell (FB) Lytton Strachey (GLS) Grip John Tressider Sheppard (Tressider) Sidney Russell-Cooke (Cookie)

Source: Keynes Papers (PP/20A/2). See Moggridge (1992, 838-839) for the names.

Note: Some of Keynes's known sexual partners in the period are not listed.

Second, Table 3 indicates that Keynes had anonymous sex. This is critical, for anonymous sex greatly increases the risk of contracting syphilis[4]. Table 3 shows that he nicknamed thirteen anonymous partners: Stable Boy of Park Lane, 16-Year-Old Under Etna, Jew Boy, etc. Moggridge published Table 3 in 1992, meaning Keynes experts have known for decades that Keynes had anonymous sex (Hession 1993). Yet Moggridge did not publish the second half of the sex diary. These sheets contain more anonymous partners. The following is a transcription of documents PP/20A/3 and PP/20A/4 from the *Keynes Papers* (appendix, document 1)[5].

L[a]rkin de Baldi	Tiboldi
Cyril Robertson	
The Swede of the National Galle1y	
The American of Victoria Street	
Ives	
The Sculptor of Florence	
The Baron of Mentone	
The Grand Duke Cyril of the Paris Baths	
The French Youth of the Baths	
The Soldier of the Baths	The Bookmaker of Bordeaux
The French Conscript	The Art dealer on the Quays
The Shoemaker of the Hague	
Nigel Farrell	
Lee Farrell	
J.B.S.	
G.L.S.	
A.L.H.	
J.M.K.	
The young American near the British Museum	
The young man in the Park	
Mr. Rhodochanachi	David Erskine M.P.
The Medical Student	

[4] According to recent estimates, 76 percent of syphilis cases had anonymous sex (Brown 2011, 79).

[5] Davenport-Hines (2015, 215-16) lists many of these names, but does not provide a full transcription.

The beautiful young man in the P. Shed	Mr. Blaker
The Clergyman	
The Chemist's boy of Paris	
The Irish nobleman of the Whitechapel Baths	
St. George Nelson	
The Blackmailer	
Captain Bonnyman	
The Actor of Whitechapel (illegible)	
Bo[bbi] Ross's young man	

This list contains twenty-six anonymous partners. With the thirteen from Table 3, this means Keynes had at least thirty-nine anonymous partners in the period 1906 to 1915. And the actual number is almost certainly higher. Indeed, some suggest that Table 2 is a tabulation of only his anonymous partners (Zimroth 2008). If that were correct, he had 683 anonymous encounters between 1906 and 1915—or, approximately six per month. Although this may seem too high, it underscores the point that Keynes had many anonymous partners[6].

Beyond the raw numbers, an assessment of Keynes's syphilis risk must consider how he met anonymous partners. It is convenient to classify his anonymous partners as (1) cruisers, (2) bathers, and (3) prostitutes. He was a cruiser who met many of his anonymous partners cruising in London (Clarke 2009, 29). The sex diary includes examples such as The Young American near the British Museum, The Young Man in the Park, and The Beautiful Young Man in the P. Shed. Davenport-Hines (2015, 214) explains in his must-read chapter on Keynes's sex life,

> "How did [Keynes] meet his partners? Offering or lighting cigarettes, asking the time of day, standing side by side gazing into shop windows (the duller the contents, the better the sexual prospects), spotting a young man with his fingers crossed or with both hands crossed behind his back, friendly glances at passers-by—these were

[6] Keynes's friends were appalled by the numbers (Devenport-Hines 2015, 229).

> discreet openings to sexual overtures. There were numerous pick-up points in London: the bronze statue of Achilles, showing naked muscles and an adamant look, near Lover's Walk at Hyde Park Corner, was popular (not least for its proximity to the Horse Guards' barracks)."

In addition to cruising, Keynes met anonymous partners in public sauna baths. The sex diary includes examples such as The French Youth of the Baths, The Soldier of the Baths, and The Irish Nobleman of the Whitechapel Baths.

> "There were twenty-five public baths, ranging downwards in cost from the Savoy Turkish Baths in Jermyn Street and the basement amenities of the Imperial Hotel in Russell Square to those in Whitechapel and Bermondsey. Frank sexual approaches and uninhibited responses, without fear of complaints or arrest, were possible in most sauna-baths: it was enough to watch the movements of other men's eyes, and to see whom their looks were following, to discover whom it was safe to accost. The Jermyn Street baths were also conveniently located for those who preferred to scrutinize younger men, with towels girding their loins, before offering to take them for tea at Lyons Corner House or home for bed." (Davenport-Hines 2015, 214-15)

His encounters with anonymous cruisers and bathers put Keynes at a high risk of contracting syphilis. Still, his encounters with prostitutes put him at the greatest risk.

> "No-one at the time would have questioned the extent of links between the pox and prostitution. … The estimated percentage of prostitutes who were syphilitic varied between 30 and 70 according to the time, the place, and the generosity of the statisticians; but from this point onward there was a tendency to argue that every prostitute would inevitably be infected with syphilis after a certain number of years. It was this which led a syphilologist just after the 1914-1918 war to describe prostitutes as "treponema machine-guns." (Quétel 1990, 219)

He was consorting with prostitutes by February 16, 1906: "I am off to dine at a low sodomitical haunt in Soho which Fay has

discovered, where guardsmen offer their services at half a crown a bottom" (Keynes 1906, 113). In the following years, "he frequented the underworld of male prostitution" (Delany 1984, 129)[7]. He was well-traveled, and he put himself at even greater risk by visiting brothels in underdeveloped countries such as Tunisia and Egypt (Holroyd ([1967] 2005, 281)[8].

In summary, Keynes's sex diary indicates that he had encounters with at least fifty-eight different partners between 1906 and 1915. A modern study estimates that 11.37 percent of males in London had syphilis in 1913 (Szreter 2014, 525). Contracting syphilis is a numbers game, and these figures can be used to calculate the probability of Keynes's contact with syphilitic partners.

TABLE 4.
KEYNES'S PROBABILITY OF SYPHILIS CONTACT

Number of Partners with Syphilis	*Binomial Probability*	*Cumulative Probability*
0	0.09%	99.91%
1	0.68%	99.23%
2	2.48%	96.76%
3	5.93%	90.83%
4	10.46%	80.36%
5	14.50%	65.86%
6	16.44%	49.42%
7	15.67%	33.75%
8	12.82%	20.93%

Note: This table is based on the binomial probability distribution. It assumes Keynes had 58 partners ($n = 58$) and 11.373 percent of males in England's biggest cities had syphilis ($p = 11.373\%$).

[7] Davenport-Hines agrees, "Naturally, Keynes paid on some occasions" (2015, 216).

[8] On Tunisia and Egypt as centers of male prostitution, see Mackrell (2008, 203) and Hayden (2003, 138). See Moggridge (1992, 186-87) on his many travel destinations from 1909 to 1914.

In Table 4, the binomial column shows the probability that Keynes never had contact with a syphilitic partner is only .09 percent. It is most probable that he had exactly six syphilitic partners. The cumulative column shows the probability that he had contact with three or more syphilitic partners is 90.83 percent.

In fact, the probabilities in Table 4 underestimate his risk. First, the syphilis rate among cruisers, bathers, and prostitutes was higher than the general population. Second, Keynes had known lovers not listed in his sex diary. Third, Table 4 assumes that he only had one encounter with each of his regular lovers—for example, Duncan Grant. Since Keynes had open relationships with his regular lovers, there was sexual concurrency risk not captured in Table 4 (appendix, document 2). For example, Virginia Woolf's brother Adrian Leslie Stephen was Duncan Grant's lover. Adrian caught syphilis from a prostitute around 1905 (Glendinning 2006, 123). Grant was sexually involved with both Keynes and Adrian after 1909, and the three lived together from 1911 to 1914 (Moggridge 1992, 186, 217; Spalding 1998, 96-97)[9].

Even using the most conservative assumptions, Keynes would have been incredibly lucky if he never had contact with a syphilitic partner. He was certainly aware of the risk. Lytton Strachey wrote to him on November 24, 1905: "It's just occurred to me how shocked [Bertrand] Russell would be if he read our correspondence. I expect he'd say it was all very sad, and when I died in a hospital for syphilitic imbeciles, he'd add that that was only to be expected" (1905, 190). Keynes wrote to Strachey, "But for heaven's sake keep this good and evil genie Zeb in his bottle. Zeb and his daughter syphilis. What a charming mythology for our holy religion!" (1906, 77). Gerald Shove warned Keynes that his anonymous "adventures" were risky: "I'm not sure that your passion for low life isn't vicious; but perhaps you keep it within bounds. If not, you'll let me have the brief when it ends as it inevitably must, won't you?" (1910, 18-19).

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[9] See Drumright (2004) on sexual concurrency risk. As one commentator put it, the Bloomsbury Group "lived in squares and loved in triangles," and "Duncan Grant [was] the erotic hub of Bloomsbury" (Marler 2016, 135, 139).

IV.
SECONDARY SYPHILIS

The syphilologist looks for a sudden change in the patient's health during the diagnostic process. As illustrated above, Keynes's sex diary reveals that he was engaged in high-risk sexual activity. Was there a sudden change in his health that might indicate secondary syphilis?

After Christmas 1913, Keynes traveled to Roquebrune on the French Riviera (Skidelsky 1983, 282). He was a member of the Royal Commission on Indian Money and Finance, and was scheduled to return home for meetings on January 12-13. Before he could leave France, however, he came down with a "serious illness" (Moggridge 1992, 228). He wrote to his mother on January 3, 1914,

> "Just as I was to start yesterday for home I was smitten down by a somewhat bad attack of tonsillitis—temperature 103 and so forth. I am being very kindly nursed by Mrs. Rendel, Madame Bussy's sister. Today I had a French doctor from Menton who describes it as a bad "quinsy" but certainly nothing worse and thinks I may be able to travel in five days. Of course he prescribes gargling and it's torture! I feel very miserable but the disease is going its normal course." (Keynes 1914a, 223-24)

He wrote to his mother the next day:

> "The doctor has been again tonight and takes rather a gloomy view—thinks there may be an abscess after the quinsy is over. But I feel very much better in myself and am sure he is wrong. The fact is, no gargle and painting efforts arrived until the disease had been on me 36 hours; and then they were of much too mild and pleasant a kind (as compared with what Geoffrey would have been) to do much good to the [throat] for such a hole. But the discharge which was so [unsettling] for about 36 hours has now practically left; and my temperature which didn't fall below 102 yesterday has been down to a comfortable 100 in the course of today. I may have to make arrangements for other people to see to the economics [course] at the beginning of term. If so, I'll write

> tomorrow to father. I'm getting feeble from want of food, it having been a struggle even to swallow milk." (1914b, 225-26)

Keynes did not recover in the expected five days. The severity of his illness could no longer be denied by mid-January. He wrote to his father on January 13 to suggest that Dennis H. Robertson take over his teaching duties at Cambridge. Keynes reported, "my throat is still closed by what monstrosities and I'm weak from want of food" (1914c, 228). On January 14, he sent his mother an urgent telegram to tell her that his diagnosis had been changed from quinsy to diphtheria. He wrote that the diphtheria diagnosis was "doubtful" (1914d, 229). Still, he informed her that he was being moved to a nursing home in Menton. She left for France to help with his recovery. He wrote her, "There is still some illness in my throat though I think I have got benefit from the gallons of serum they pumped into me yesterday and the day before" (1914e, 232). After being seriously ill in France for nearly a month, he returned to England on January 30 (Moggridge 1992, 228).

Naturally, Keynes's telegram of January 14, 1914, has led many to believe that he had diphtheria (Skidelsky 1983, 282; Moggridge 1992, 228). He did indeed show some symptoms of diphtheria in January 1914, most notably the aforementioned "illness" and "monstrosities" in his throat.

TABLE 5.
DIPHTHERIA SYMPTOMS

Symptom	*Description*
Sore Throat	Often severe and persistent.
Fever	Low grade.
Thick Gray Membrane	A thick, grayish pseudomembrane forms on the throat and tonsils.
Bull Neck	Swollen lymph nodes in the neck.
Weakness	Fatigue and general feeling of being unwell.

Source: Loscalzo et al. (2022, 1203-1208).

There are problems with the diphtheria hypothesis. First, the doctors who diagnosed him with diphtheria originally diagnosed quinsy. And Keynes himself doubted diphtheria. This indicates that there was confusion over his illness. Second, he was likely too old for diphtheria: "Prior to the vaccination era, most individuals over the age of 10 were immune" (Loscalzo et al. 2022, 1204). Third, his severe fever contrasts with the low-grade fever associated with diphtheria. Lastly, there is no independent evidence of diphtheria; all of the evidence comes from Keynes.

In 1914, diphtheria and secondary syphilis were easily confused because of overlapping symptoms (Cornil 1882, 42; Stokes 1944, 586). Keynes's severe fever and sore throat are classic symptoms of secondary syphilis. The illness and monstrosities in his throat are consistent with secondary oral syphilis (Ulmer and Fierlbeck 2002; Gedela and Boag 2012). In fact, "manifestations in the oral cavity and pharynx … are the most common extra-genital sites of syphilis" (Baarsma et al. 1985, 601). The abscess and discharge in Keynes's throat are more consistent with syphilis than diphtheria (Hutchinson 1909, 212-13). Evidence of the syphilis rash is lacking. Still, the rash at this time could be so subtle that it might be unnoticeable (Stokes 1917, 36-37; Jones 1993, 3). Lastly, even if Keynes was informed, it is unlikely the doctor would inform his family:

> "Some were so terrified that they refused to face the truth … It was a short step from being unable to acknowledge to oneself that one has syphilis to being unable to acknowledge it to others. Syphilis was more shameful than ever, and could be endured to the death without the sufferer ever saying anything to his [family]. The doctor was therefore often obliged to treat [them] in conspiracy and silence". (Quétel 1990, 195-97)

The syphilologist must ask: what was Keynes's health like in the years and decades after his sudden illness of 1914? His niece and nephew noted, "he was often the victim of minor ailments" (Hill and Keynes 1989, 18). In April 1922, he started a long-term correspondence with his future wife Lydia Lopokova. They repeatedly

refer to the ups and downs in his health as his "cycle"[10]. After they married in August 1925, their correspondence reveals constant anxiety over his fragile health (Mackrell 2008, 329-30). Given his sexual history, a syphilologist working around 1940 would view his serious illness in early 1914 and his volatile health thereafter as suspicion arousers for syphilis.

V.
RUTHIN CASTLE

Tertiary syphilis manifests in several forms (Moore 1943; Stokes 1944). The first is a lesion called gumma. These lesions can occur on the skin, heart, brain, bones, joints, mouth, and other organs. The bone and joint lesions (osteitis or periostitis) can cause significant rheumatic pain and discomfort. The second form is cardiovascular syphilis, which affects the ascending aorta, leading to conditions such as syphilitic aortitis and aortic aneurysm. Syphilitic aortic insufficiency may cause cardiac events that resemble heart attacks. Cardiovascular syphilis typically progresses to sudden heart failure from aortic aneurysm ruptures or severe aortic insufficiency. The third form is neurosyphilis, which affects the brain and spinal cord. Neurosyphilis can cause conditions such as tabes dorsalis, characterized by impaired coordination and movement, and general paresis, leading to dementia, epilepsy, and paralysis.

Keynes began complaining constantly of rheumatism in the fall of 1931 (age forty-eight). Rheumatism is not a specific medical condition, but a term used to describe various chronic, intermittent aches, pains, and stiffness affecting the joints, muscles, and connective tissues. He wrote to Lopokova on October 25, 1931: "I woke up yesterday with the most dreadful pains in my chest, so bad that I telephoned at once for a doctor. It turns out to be a sort of rheumatism, an inflammation of the sheaths of the small muscles which encircle the lungs (*x* intercostal). Not at all dangerous or

[10] For examples, see the collection by Hill and Keynes (1989, 115, 121-22, 188, 190, 209, 213, 215, 217, 270, 332).

serious but horribly painful" (1931a, 51). He wrote three weeks later, "I occasionally have a rheumatic twinge; my eyes are not quite so strong—just like last November; and my teeth are tender. And I still walk slowly, but I make progress" (1931b, 62). Along with chest pain, leg pain and low back pain (lumbago) became lingering issues. His rheumatism after 1931 is a suspicion arouser for tertiary syphilis.

In the years after 1931, he continued to experience shooting pain around his chest. But the pain became extreme in early 1937. He wrote to Lopkova on January 22, "My health is progressing, though I feel very tired about six o'clock and my breath is terribly short and painful if I move upstairs or walk fast (which probably means that the rheumatism in the chest is not far below the surface)" (1937a, 175). He urged her not to worry, but his father was very concerned:

> "My breathing muscles were so wonky today that I only just managed to walk to Harvey Rd. So F[ather] in a low voice, strong with power, and a most tyrannical manner, insisted on sending for his favorite doctor to see me. He has given me two kinds of tablets to swallow and an ointment … So don't worry. The complaint is exactly what I thought it was—rheumatism in the little muscles of the chest plus post-influenza." (1937b, 177)

Chest pain (angina pectoris) and breathlessness (dyspnea) on exertion are common symptoms of cardiovascular syphilis: "This rates easily as the most important complaint in patients with early [syphilitic] aortitis" (Stokes 1944, 907). By spring 1937, he could not walk more than a few dozen yards without experiencing severe chest pain and breathlessness. His maternal uncle was a medical doctor named Sir Walter Langdon-Brown. His uncle examined him on March 31, 1937, and reported to Keynes on April 8: "There is no evidence of organic change" (1937a, 3). His uncle, Dr. Hanton, and Dr. Bedford prescribed barbiturate drugs—namely, luminal, prominol, and protheonal, all containing the sedative phenobarbital (3). In retrospect, they underestimated the severity of his heart problem (Moggridge 1992, 608).

After a big scare on May 4, Keynes suffered a serious cardiac event on May 16, 1937, at his parents' home in Cambridge. He spent

the next month in bed recovering. His uncle comforted his mother by suggesting it was "pseudo-angina" (Langdon-Brown 1937b, 186). Still, "the minimum of six months of complete rest must be imposed" (185). Complete bed rest was common in the treatment of cardiovascular syphilis (Stokes 1944, 962).

On June 18, 1937, Keynes took an ambulance to a private sanatorium called Ruthin Castle in North Wales. Ruthin Castle was "a private hospital for the investigation and treatment of obscure medical diseases" (Allison 1977). He was assigned to Room C5 at a rate of £35.1 per week. Sir Edmund Ivens Spriggs was Ruthin's consulting senior physician, and Sydney Wentworth Patterson was the resident physician. The bacterium that causes syphilis is a spirochete, and Patterson was a bacteriologist and expert on spirochetes (Patterson 1917).

Patterson's report dated September 22, 1937, is a key piece of evidence in the debate over Keynes's heart condition (appendix, document 3). The section "Summary of History" confirms that his uncle underestimated the severity of his heart condition:

> "In 1933 febrile attacks with pain in the chest. Attributable to intercostal rheumatism. August 1936 began to complain of pain behind sternum on exertion; worse in December and movement more restricted. January 1937 febrile attack ("influenza"), pain behind sternum more severe after; another attack of pyrexia in February and third attack in May … Electrocardiogram in April, much left axis deviation, flattened T2 and reversed T3." (Patterson 1937, 5)

The diagnosis was "Coronary disease, large heart and aorta; septic tonsils" (Patterson 1937, 5). The report continues, "heart enlarged to left, poor first mitral sound, no murmur; aortic second clear; with x-ray, left ventricle left auricle enlarged, wide ascending aorta; electrocardiogram gross left axis deviation, T2 and T3 reversed" (5). First, a wide ascending aorta is a hallmark of cardiovascular syphilis (Stokes 1917, 47; Hayden 2003, 57-58). Second, the enlarged heart, including both the left ventricle and left auricle, is consistent with syphilitic myocarditis. Third, the electrocardiogram findings of gross left axis deviation and reversed T waves are consistent with cardiovascular syphilis (Stokes 1944, 908, 939).

Along with his heart, Keynes's "septic tonsils" might suggest tertiary syphilis. Lopokova went with him to Ruthin, and she telegrammed his mother: "Verdict delivered this evening, fatigue and tonsils to blame. … Recurrent fever probably due to state of the tonsils" (1937a, 12). She wrote, "his throat is treated all the same in a serious manner" (1937b, 18). She reported, "His throat is much better, but the abscess is still there" (1937c, 19). Oral manifestations of tertiary syphilis include syphilitic gummas in the throat (Smith et al. 2021, 790). Moreover, these syphilitic lesions can become necrotic. The ulcerated and necrotic tissue can serve as an entry point and breeding ground for bacteria such *Streptococcus viridans*, *Streptococcus haemolyticus*, and fusiform bacilli (Schöfer 2011, 159).

Keynes's treatment plan at Ruthin Castle suggests syphilis. The "Treatment" section of Patterson's report reads, "half a grain of gray powder at night; throat swabbed daily with weak N.A.B. solution and sprayed twice a day with a lotion containing one teaspoonful of equal parts of biborate, bicarbonate and chloride of soda in tumbler of water" (Patterson 1937, 5). The gray powder was mercury with chalk (*hydrargyrum cum creta*). It was called gray powder because blending mercury and white chalk produces a powdery texture that is light gray. Taken by the grain, the powder could be made into pills or mixed with food and drink. His mercury treatments are highly suggestive, as gray powder was used at the time primarily for treating syphilis (Hutchinson 1909, 508; Hayden 2003, 47).

The N.A.B solution was arsenic. Recall, the arsenic compound neoarsphenamine was re-branded as Neosalvarsan in 1912. Novarsenobillon was an English brand of neoarsphenamine, and it was abbreviated N.A.B. (appendix, document 5). Keynes was certainly treated with arsenic at Ruthin. On July 4, 1937, his wife told a friend that the Ruthin doctors "treat his throat with weed-killer [arsenic]" (1937d, 69). Keynes wrote to his brother on July 10,

> "I have a flabby and dilated heart muscle, which is the matter with which they are seriously concerned, and I also have some dilation of the small blood vessels in the middle of the chest. A throat specialist whom they brought in discovered my tonsils to be in what he considered shocking condition, covered with pus to the naked

> eye and creeping apparently with animals called fusillaria (?), not apparently the virulent kind, but the common or garden. I gather he took the view, which the others are inclined to share, that there was enough poison distilling in the system here to account for all the other symptoms. They have been tackling this by painting the tonsils ten times with a preparation of organic arsenic. Since they were afraid that any more would irritate the tonsils too much, I have now been having a few days rest, after which I gather they propose to continue painting with some iodine mixture [Mandl's Paint]. The latest swabs taken showed a very greatly reduced population, but a few specimens were still there. I am kept entirely in bed." (1937c, 185-86)[11]

The use of arsenic on the tonsils suggests syphilis. It seems his doctors applied neoarsphenamine locally as a paint to treat the lesions in his throat. In addition to arsenic paintings, "Throat painting was continued three or four times a week with Mandl's paint" (Patterson 1937, 6). Mandl's paint contained potassium iodide, iodine, and glycerin. Historically, potassium iodide was central to treating tertiary oral and cardiovascular syphilis (Hutchinson 1909, 217; Stokes 1944, 959). Finally, the lotion sprayed on the tonsils twice a day was a mixture of borax, baking soda, and sodium chloride. This mixture has antiseptic properties. If Keynes had syphilitic lesions in his throat, this lotion would have been used to reduce inflammation and disinfect the sores. In short, Keynes received Combined Treatment with mercury, iodides, and arsenic at Ruthin Castle.

Keynes was treated with mercury, iodides, and arsenic throughout the summer of 1937. And the treatments worked. On August 17, Lopokova alerted his mother that they expected to leave Ruthin at the end of September: "P.S. his throat does not swell at all" (1937e, 27). Keynes told his brother on September 5, "Subjectively, my [heart] sensations have enormously improved. … Meanwhile, my tonsils have become, so far as can be, quite clean, though they are still painted two or three times a week" (1937d, 187-88).

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[11] See Kildea (2014, 532-34) on the connection between flabby heart, aortitis, and tonsillitis in tertiary syphilis. Benjamin Britten had tertiary syphilis with both cardiovascular and tonsillar involvement, and his case was confused for bacterial endocarditis.

Keynes was discharged from Ruthin on September 22, 1937. Patterson's report reads, "Feels better; can walk for an hour without symptoms; throat no pus; no fusiform bacilli, tonsils still soft and inclined to bleed easily; x ray shows further diminution of transverse diameter of the heart" (Patterson 1937, 6). He was instructed, "Continue the throat spray daily and the half grain of gray powder at night, the throat being painted twice a week" (7). He left Ruthin and returned to his country house, Tilton in Sussex, where he was told to stay in bed for another six weeks. Lopokova (1937f, 32-33) wrote to Keynes's mother in her broken English,

> "The dilated muscle is diminishing, but the complete recovery is still to come for a long time, and Maynard is to go on with the same regime and to be re-examined Christmas time: he still has pains in the chest (not what they were) and it is to see they gradually diminish—but we are lucky to be allowed to go home, and it will be a task as it is already to keep him at bay."

Significantly, poisonous treatments with mercury, iodides, and arsenic improved Keynes's health. The September 1937 report reads, "The condition is due to coronary and myocardial trouble probably associated with the tonsils. These have improved and treatment should be continued" (Patterson 1937, 6)[12]. Treatments continued after Ruthin as instructed. Keynes wrote to Spriggs on December 7: "My general health has been very good … My local doctor now paints my tonsils once a week … But, on the whole, the progress is very marked indeed" (1937e, 1). He convalesced at Tilton until he was healthy enough to travel to London on February 17, 1938. He reported to Spriggs on June 27, "I am quite a new man. … General health very good. … My throat is now being painted only at rather longer intervals" (1938, 8-9). The fact that his arsenal of toxic treatments improved his health suggests that Keynes had syphilis[13].

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[12] See Kildea (2014, 532-34) on the connection between heart trouble and the tonsils in tertiary syphilis

[13] Hayden wrote, "a [syphilis] diagnosis was only confirmed when the patient got better with (toxic) treatment, or infected a lover, or provided postmortem proof such as a syphilitic heart" (2003, 65).

Keynes's description of himself as a new man after Ruthin leads to a vital point: his statements about his own health are not always reliable. Although his condition improved, his health was far from good. Lopokova was so concerned that she kept a medical diary from November 1937 to April 1941. She had a litany of keywords for his health: weak, broken, breathless, nerves, cramps, body aches, shaky, tension, trembling hands, low vitality, etc. Her constant use of the word "tired" indicates that he lived in a state of almost continuous exhaustion. Perhaps her most important keyword was "chesty," for it shows that chest pain was always an issue. He managed the pain with bromide. His health was so frail in the eighteen months after Ruthin that, by March 1939, he took the drastic measure of calling János Plesch.

VI.
JÁNOS PLESCH

In March 1939, Keynes came under the care of a Hungarian doctor named János Plesch (1878-1957). Born in Budapest, Plesch had a successful medical practice in Berlin from 1910 to 1933. He has been described as a celebrity or playboy doctor because he seemed to know every important person in Central Europe. His patients included the Kaiser, the Pope, and Einstein. He was Jewish and thus fled Germany for London in 1933. He treated many famous individuals in Britain, including Winston Churchill, Margot Asquith, Bernard Shaw, and Keynes.

Plesch and his career are widely misunderstood. First, he is sometimes called a charlatan and a crank. Even Keynes described him as "something between a genius and a quack" (quoted in Skidelsky 2000, 40). In reality, he was a highly accomplished practitioner and professor of medicine with an impressive range of publications. Second, he is often portrayed as a mere heart specialist. He indeed published a book called *Physiology and Pathology of the Heart and Blood Vessels* (Plesch 1937)[14]. At the same time, however,

[14] Keynes (1939a, 3) was familiar with Plesch's book on the heart.

he was an expert on syphilis. As Plesch (1947, 84-97) wrote in his autobiography, he was present for the key syphilis breakthroughs of Schaudinn, Wasserman, and Ehrlich[15]. His 1937 book on the heart discusses syphilis (Plesch 1937, 150). His 1953 book *Rembrandts Within Rembrandts* shows that he had a detailed knowledge of the history and nature of syphilis. In fact, he argued it caused the Renaissance:

> "When syphilis takes a hold of a brain whose original development and qualities are high then the result can be performances rising to the height of genius. Capacities which are already very considerable can be gigantically enhanced: consider, for example, Erasmus of Rotterdam, Albrecht Durer, Lorenzo de' Medici, Heinrich Heine, Louis Pasteur and Friedrich Nietzsche, all of whom were known to be syphilitic, and many others. … The 'Renaissance type' suddenly appeared everywhere in the civilized world and in all cultural and artistic spheres. So much was this so that we are entitled to say that such a general phenomenon must have had a general cause, and I think I am right in suggesting that syphilis was the general cause. Syphilis produces profound biological and intellectual changes in everyone who becomes infected with it. So much so that it is impossible to conceive of an adequate historical representation of the Renaissance without giving the pandemic syphilitic infection of that era its proper place. In any case, I propose to maintain my syphilis theory until someone comes along and provides a better one to help us understand that unique flowering of the human spirit known as the Renaissance." (Plesch 1953, 111-12)[16]

Keynes first contacted Plesch after having a bad flu in late February 1939. Lopokova recorded in her medical diary on March 1, "bad, called Plesch, bad" (1939, 15). According to her diary, he started "treatment" with Plesch on March 11 (18). In the following days, he was "weak" and "very weak" (19). On March 17, Plesch gave Keynes his first dose of "Protonsil" [sic] (20-21). If her diary is

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[15] Unfortunately, Plesch (1947, 206) only includes one inconsequential comment on Keynes in his autobiography.

[16] The idea that syphilis could produce genius was somewhat common (Quétel 1990, 172; Hayden 2003, xvi-xvii).

accurate, he took Prontosil over four days. She recorded on March 20, "very weak, Protonsil [sic] finished, sickly" (21). On March 22 he was a "little stronger with energy 50-50." By March 25, he was "much better, stronger" (22).

Keynes's own account of his Prontosil treatments contradicts Lopokova's diary. According to Lopokova, he took Prontosil from March 17-20. But on March 18, Keynes told Dr. Hanton that he had not yet started Prontosil:

> "I made the bold plunge of going to a German refugee, Dr Plesch, formerly professor of Internal Medicine at Berlin, who was very strongly recommended to me by some patients he had cured, as the most eminent heart specialist in Germany. … He tackled my main trouble with great vigour. His diagnosis was really the same as Ruthin's, but a bacteriological examination shows that the streprococci, both virdana and haemoleticus, are both present again in my throat in enormous numbers. He regards this as the source of the trouble, and considers that my heart itself is not fundamentally injured, and is capable of complete recovery. I gather the name he gives to my condition is myocarditis, produced by toxaemia, due to the infection. … Against the infection he is injecting me with my own antitoxin, and talking shortly of giving me doses of Prontosil against the streptococci themselves. … He claims that the heart could very soon be got back into perfectly decent order, if the chronic toxaemia, which he considers to be of very old standing indeed, can be got rid of." (Keynes 1939a, 1-2)

Keynes does not give any details about his "antitoxin." But it is clear that Prontosil was neither the first nor the only substance used for treatment. Significantly, Plesch treated Keynes with arsenic. Plesch went on vacation to Monte Carlo in early April and wrote to Keynes on April 10: "I think we carry through aswell the arsenic, and the opium cure. The sleepiness will give pass in further 3-4 days. The chief thing is your having only few heart ailments and no pains" (1939a, 13). Keynes wrote to Richard Kahn on April 11:

> "Indeed, the Ogre [Plesch] seems to have worked a miracle on me. It is only a few days since I was allowed to get out of bed, after five

> weeks torture. But the extraordinary thing is that I feel perfectly well. All the subjective heart symptoms have entirely disappeared. I fell no sensations whatever. I can walk better than I have been able to for 2½ years, and have not yet discovered the limits of my powers." (1939b, 110)

Two days later Keynes joked with Plesch about his arsenic dosage: "I suggest that you will find it profitable in your present place of residence if on each day you back the number of drops of arsenic which it is appropriate for me to take on that day. … Meanwhile I am progressing very well indeed, and according to programme. … Arsenic has now risen to 9 drops" (1939c, 14-15). Plesch replied from Monte Carlo on April 16,

> "It was very unwise from you to run for a train. Please in the next year use your car. You never ought to be in a hurry. I told you it will last 1½ years until the last is finished. You must not exaggerate motions in this time. I hope the effective amount of arsenic drops will suit. You better believe my backing of the numbers. Not even your statistics 1/20 have proved right. But I was amused." (1939b, 16)

Virginia Woolf wrote to Ethyl Smyth on April 14, 1939, "Maynard Keynes is being cured by your Plesch, whom he says is the greatest genius that ever lived" ([1939] 1982, 327). Keynes wrote a playful letter to Plesch on April 18: "I suspect that you must have made a mistake about the relation of the arsenic to the date. I have reached the maximum to-day. … Meanwhile, I am feeling extremely well. … The arsenic, the opium, the thyroid, the bath and the washout have all been performed according to instruction" (1939d, 19).

On August 14, he traveled to the Royat-Palace, a luxury hotel in Royat, France. Royat was a spa town known for its thermal baths, and it was a popular destination for medical treatment. The trip was not a simple "holiday" (Skidelsky 2000, 44). He received medical treatments, and Plesch was there for part of his stay. Keynes originally planned to stay six weeks, but his treatment was cut short due to the looming threat of war: "I have just completed half

the cure. … It is tiresome to break it off. But the doctor thinks it has done me a lot of good and suits me. … Plesch is of great reputation here with the doctors as the superintendent of the baths and they all use his apparatus … 'Les docteurs anglais n'aiment pas Plesch'" (1939e, 235). He arrived back at Tilton on August 29, just days before Nazi Germany invaded Poland.

Keynes played a central role in the British Treasury during the Second World War (Skidelsky 2000, xvii, 135). As will be seen, his heart condition affected his war effort. His chest pain had improved by early 1940, but he wrote on February 29: "The only symptoms I ever have, which still do recur from time to time, are a feeling of distress in the aorta region" (1940a, 55). Recall, cardiovascular syphilis involves aortic disease (Kampmeier 1946, 258, 262). Plesch replied,

> "I am not of a jealous nature, and so I do not want to analyse which part of the treatment was the most useful to you: but I dare say that the combination of the simultaneous application of the vaccine and the Prontosyl was a brain-wave which I think helped you so much. Last but not least the pectoral and other muscular injections, it seems to me, were so helpful." (1940, 56-57)

Keynes shared Plesch's enthusiasm and wrote to Spriggs on March 31, 1940,

> "So I have every reason to be extraordinarily grateful to you for having put me on the right road when I was very low indeed, and to Plesch's subsequent treatment. The real turning point came about a year ago when Plesch came to the decision that it was essential to attempt, even by the most drastic method, to remedy my condition of chronic toxaemia, which was retarding any effective recovery of the heart. So he gave me a very elaborate and stringent treatment of Prontosil, prepared and assisted by my own vaccine. At the time it made me iller than I had ever been before, and I could scarcely stand on my feet. But the results were quite extraordinarily satisfactory. The bacteriologist who had previously reported that I had virulent streptococcus Haemolatius, declared that I was, after the Prontosil, completely free from it and that the chronic toxaemia had entirely disappeared. This meant, of

> course, that I felt a new man. I still keep very strict rules of rest and diet. But Plesch declares that there is no organic or permanent injury to the heart … I do not know what would have happened to me if I did not go to Ruthin at that critical stage." (1940b, 11-12)

Again, optimistic statements about his health must be approached with caution. Lopokova's medical diary shatters any notion that he was a new man. Rather, it paints a picture of a man plagued by poor health. He had a cardiac event just seven months after starting treatments with Plesch. Then he suffered cardiac events on May 14 and May 17—just two months after he told Spriggs he was a new man. As Table 6 shows, he had at least eight cardiac events under Plesch's care. Also, his throat problem was never cured. He had throat issues in January, August, and September 1940. He received treatment from Plesch, and on October 9 he acknowledged that his throat would never fully recover: "My throat was greatly improved after your brutal bashing and has given me no trouble lately; though I suppose I ought to have a similar suffering at appropriate intervals" (1940d, 83). Despite repeated claims that he was a new man, the reality is that Keynes lived after 1937 as a "semi-invalid" (Hill and Keynes 1989, 18)[17].

TABLE 6.
KEYNES'S CARDIAC EVENTS

Date	*Description*
May 4, 1937	Mild
May 16, 1937	Severe
October 5, 1939	Mild
May 14, 1940	Mild

…/…

[17] Similarly, Davenport-Hines (2015, 311) uses the word "invalid" in connection with Keynes.

.../...

Date	*Description*
May 17, 1940	Mild
July 19, 1944	Severe
October 7, 1945	Mild
February 20, 1946	Mild
March 16, 1946	Severe
April 21, 1946	Fatal

Sources: Moggridge (1992) and Skidelsky (2000).

Unfortunately, there are two gaps in the Keynes-Plesch correspondence: (1) from February 1941 to April 1942, and (2) from July 1942 to March 1945. On April 28, 1942, he contacted Plesch about an "affection in the nose which the local doctor at Cambridge might become something of the nature of erysipelas" (1942a, 88). Plesch treated his nose through July 1942, and then the correspondence broke off again[18].

Keynes started experiencing heart palpitations in March 1944, and Plesch ordered him to stay in bed for a month on March 17. Keynes wrote on April 9, "I have been suffering more from excess of drugs and all kinds of medicine than anything else" (1944, 10). On the evening of July 19, 1944, during the Bretton Woods Conference, Keynes darted across the hotel to scold Henry Morgenthau, Jr., over the Bank for International Settlements. Shortly after his tirade, he was "knocked out" for fifteen minutes (Skidelsky 2000, 355). News of his "heart attack" got into the press, and "by the time it reached Germany, the rumour said that I was dead and I am told that I received most satisfactory obituaries" (Keynes quoted in Conway 2014, 272).

[18] Geoffrey Langdon Keynes destroyed sensitive parts of Keynes's papers (Holroyd 1967 [2005], 695; Skidelsky 1992, 36; Skidelsky 2000, 493). Geoffrey was a medical doctor, and it is possible that he destroyed sensitive documents related to Keynes's health. This might explain the glaring gaps in the Keynes-Plesch correspondence.

Throughout the war, his heart condition prevented him from traveling by airplane. Since cabins were often not fully pressurized at the time, passengers were exposed to lower oxygen levels at higher altitudes. This could place strain on those with heart conditions. Consequently, Keynes was forced to travel by sea and rail[19]. In March 1945, Plesch gave him an "inoculation" for "the whole condition" (Plesch 1945, 96). Keynes told Plesch the injection made him feel "seedy" (1945a, 97). He reported to a friend on March 28, "My heart is very deficient in strength (lungs, liver and kidneys beyond reproach fortunately) and I cannot walk. I find it profitable to spend 12 hours of every 24 hours in a horizontal position in bed" (1945b, 286).

On January 5, 1946, Keynes warned Plesch that his "old heart" was starting to "give way" (1946a, 98). He dealt with his symptoms by lying down as much as possible and placing ice bags on his chest. He wrote to Plesch, "What really got me through, however, was the marvelous effect of the sodium Amytol which you prescribed" (99)[20]. A cardiac event on February 20 prevented him from welcoming King George VI to the Royal Gala for the reopening of the Royal Opera House (Mackrell 2008, 395-96). On March 19, he was knocked out while on a train from Savannah to Washington. A group of men had to carry his unconscious body through the train, and he was laid out on a table in the dining car (Moggridge 1992, 833n)[21]. He remained unconscious on the table for an hour. Characteristically, he downplayed the seriousness of the event in his last surviving letter to Plesch:

> "Unfortunately in the enormously long train in which we travelled back to New York, I walked too fast down the swaying carriages what seemed almost a quarter of a mile (and I think it must have been just about that distance) to the restaurant car. When I got there I was quite knocked out, and so remained for about an hour. This time I had no palpitations or heart symptoms at all,

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[19] For example, see Moggridge (1992, 724, 738, 780, 828, 832).

[20] Sodium amytal (also known as sodium amobarbital) is a strong barbiturate sedative. Conway (2014, 328) suggests that this "truth serum" may have affected his work in the British treasury.

[21] On this event, also see Skidelsky (2000, 468) and Mackrell (2008, 396).

> except that I felt exactly as though I was at the end of a long running race, but a certain measure of distress continued for much longer." (1946b, 105-6)

A month after this knockout, Keynes died suddenly of heart failure on the morning of April 21, 1946—Easter Sunday—at Tilton. He had set up a bedroom downstairs near the front door so he did not have to climb the stairs. After Easter breakfast, he suffered a cardiac event in bed and died within three minutes. There is no record of his last words. Clive Bell ([1946] 2023, 29) described Keynes's last moments:

> "Maynard died as suddenly as possible. Lydia had brought him in a cup of tea at ten o'clock in the morning: he made a grimace and collapsed. Lydia didn't realise that he was dead; but old Mrs. Keynes, who happened to be staying in the house, and was called into the room, did. I had known for some time, and probably so had you, that any of these heart attacks which have become so common with him of late might be fatal. He might just as well have died that night at the Covent Garden as yesterday morning."[22]

The death certificate was registered on April 22. The cause of death column reads, "1a. Coronary Thrombosis, 1b. Myocarditis" (appendix, document 6)[23]. The cause of death is certified by "J. Plesch LRCP." There was no autopsy and he was cremated on April 24. In his will, he instructed his brother (executor) to deposit his ashes in a vault at King's College Chapel. His brother forgot, and his ashes were spread on the hills around Tilton where he used to walk with Lopokova (Moggridge 1992, 834). While Keynes died aged sixty-two, his sister lived to eighty-five, his brother to ninety-five, his mother to ninety-six, and his father to ninety-seven. As Peter Clarke observed, "other members of his family had notable

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[22] For other accounts, see Moggridge (1992, 836), Skidelsky (2000, 471), Mackrell (2008, 397-98), Clarke (2009, 94), and Davenport-Hines (2015, 359).

[23] Hayden wrote, "physicians were disinclined to give [syphilis] as a cause of death, fearing publicity for the patient, further hurt to a sorrowing family, or risk of losing insurance" (2003, 223).

longevity," and "Keynes might well have been expected to live into the 1960s or 1970s" (2009, 78, 94-95).

VII.
PROBLEMS WITH THE SYPHILIS AND BACTERIAL-ENDOCARDITIS HYPOTHESES

The most important piece of evidence against the syphilis hypothesis comes from Ruthin Castle. Two words in Patterson's 1937 report appear to read: "W.R. negative" (Patterson 1937, 5). W.R. is likely an abbreviation for the Wasserman Reaction test for syphilis. The words W.R. negative suggest that Keynes tested negative for syphilis in September 1937.

Some might claim that a negative Wasserman Reaction test in September 1937 proves Keynes never had syphilis. This would be incorrect, however. Concerning Keynes, there were three problems with the Wasserman test: (1) the false negative rate was between 25 and 56 percent, (2) it was not effective for detecting syphilis in later stages, and (3) successful treatment prevented it from detecting syphilis (Stokes 1944, 86; Kampmeier 1946, 44; Hayden 2003, 298). For these reasons, "Wasserman tests alone could not be trusted; they had to be supplemented by thorough clinical histories" (Jones 1993, 105).

Skeptics may raise the question of neurosyphilis. While beyond the scope of this paper, Keynes did show neurological symptoms consistent with tertiary syphilis. First, Keynes was infamous for his horrible memory: "Keynes would often laughingly say that he possessed the shortest memory in the world" (Robinson 1947, 67). Lionnel Robbins declared in a lecture, "[Keynes] had an extremely bad memory—an *extremely* bad memory" ([1979-81] 1998, 153)[24]. Second, there is anectodal evidence that some at Cambridge thought he had a split personality. Third, as noted, his wife reported that he had the shakes and tremors. Fourth, in his later years, he had a noticeable stoop in his posture.

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[24] For more on Keynes's terrible memory, see Bell (1956, 58-59), Skidelsky (1992, 627), and Annan (1999, 24).

Finally, his so-called knock outs could have been caused by neurosyphilis. It should be noted, however, that even the total absence of neurosyphilis symptoms does not preclude cardiovascular syphilis.

There are serious problems with the bacterial-endocarditis hypothesis. First, it presumes bacterial endocarditis is a condition that progresses slowly. For example, Clarke wrote, "The problem had been lurking since 1931. It seems that a bacterial infection affecting his heart was at the root of it" (2009, 77). Rather than progressing slowly, however, bacterial endocarditis progresses rapidly. And 99 percent of cases were fatal (Levine 1936, 196). The acute form normally caused death within weeks, while the subacute form typically caused death within months. Given its rapid progression, it is virtually impossible that Keynes had bacterial endocarditis from 1937 to 1946, let alone from 1931 to 1946.

Also, Keynes's surviving medical records raise doubts about bacterial endocarditis. No available records mention the word endocarditis. Furthermore, the key September 1937 report reads, "no murmur" (Patterson 1937, 5). The specific mention of no murmur is significant. Bacterial endocarditis results in the formation of vegetations (clumps of bacteria, fibrin, and platelets) on the heart valves. It was estimated that these vegetations cause an audible murmur in 99 percent of patients (Hunter and Paterson 1956, 23). He did not show other common signs of bacterial endocarditis, such as secondary anemia, petechial hemorrhages, splenic enlargement, or tender and clubbed fingers (Levine 1936, 188). The absence of all this might explain why numerous doctors—Cole, Langdon-Brown, Hanton, Bedford, Ryle, Spriggs, Patterson, Plesch, and three other unnamed specialists—never diagnosed him with the condition.

Since Skidelsky popularized the bacterial-endocarditis hypothesis, it is necessary to address some of the problems with his account. Skidelsky (1992, 635) originally denied that Keynes had bacterial endocarditis:

> "Bacterial endocarditis was the official diagnosis, a complication of rheumatic heart disease. Today this diagnosis seems unlikely. Subacute bacterial endocarditis is a sequel to damage of a heart

> valve from previous rheumatic fever, when s*treptococcus viridans* settles on the scarred valve. But the symptoms of which Maynard complained were the classic symptoms of 'angina of effort', as a result of the narrowing of the coronary arteries, with coronary thrombosis as a possible outcome. His collapse in May seems to have been due to such an attack."

There are many problems with this statement. First, bacterial endocarditis was not the official diagnosis. Careful readers will notice that Skidelsky does not cite a single primary or secondary source for the diagnosis. Second, bacterial endocarditis is not simply a complication of rheumatic heart disease. It is true that almost everyone who gets bacterial endocarditis has a pre-existing heart condition. However, in the 1930s, the most common predisposing factors were congenital heart defects, rheumatic heart disease, and cardiovascular syphilis (Moore 1943, 466). The inclusion of syphilis here means that even conclusive proof of bacterial endocarditis could not disprove the syphilis hypothesis; Keynes could have had both.

While originally denying bacterial endocarditis, Skidelsky changed his mind sometime between 1992 and 2000. He does not indicate or explain his change of mind in the third volume of his biography. Nonetheless, his revised account is also problematic:

> "The Ruthin doctors, that is, had diagnosed subacute bacterial endocarditis, caused by streptococcus viridaris, green bacteria which lodge in and attack the valves of the heart, or, in Lydia's phrase, 'dripped poison into die systeme'. This diagnosis was almost certainly right. It suggests that Keynes had been in trouble since the bouts of the intercostal rheumatism he had been experiencing since 1931." (Skidelsky 2000, 6)

First, Skidelsky does not cite any source to support his claim that Keynes was diagnosed with bacterial endocarditis. Second, he implies the condition progresses slowly. Third, he seems to confuse intercostal rheumatism and rheumatic heart disease. Despite its name, intercostal rheumatism is not related to rheumatic heart disease or the heart in general. Finally, given his narrative, it seems Skidelsky must maintain that Keynes had rheumatic heart disease

before bacterial endocarditis. So the question becomes: did he have rheumatic heart disease?

The Ruthin doctors and Plesch diagnosed Keynes with myocarditis—inflammation of the heart muscle. While bacterial endocarditis is distinct, myocarditis is typical in both rheumatic heart disease and cardiovascular syphilis (Moore 1943, 282). Both rheumatic heart disease and cardiovascular syphilis can explain the slow progression of his condition, as well as his chest pain and breathlessness since 1931. Significantly, however, rheumatic heart disease does not explain his wide ascending aorta—a key sign of cardiovascular syphilis (French 2007, 145). Another problem is that rheumatic heart disease tends to afflict young people. While it does not totally rule out rheumatic heart disease, Keynes's advanced age in 1937 is more consistent with cardiovascular syphilis (Stokes 1944, 909).

There are problems with Skidelsky's account of Keynes's treatment plan under Plesch. First, he greatly overemphasizes Prontosil (Skidelsky 2000, 42). Plesch used other substances before and after Prontosil, and he wrote: "I do not want to analyse which part of the treatment was the most useful to you" (1940, 56). By 1939, the medical community was aware that Prontosil does not work on bacterial endocarditis, rheumatic heart disease, or cardiovascular syphilis. Plesch likely used Prontosil to treat Keynes's throat, not his long-term heart condition.

Skidelsky acknowledges that Keynes received arsenic treatments at Ruthin Castle in 1937. He also recognizes that arsenic was "more familiar in treating syphilis" (Skidelsky 2000, 6)[25]. Unfortunately, however, he never mentions the mercury[26]. He notes Mandl's Paint but does not inform the reader that it contained potassium iodide. Most importantly, he never indicates that Plesch also treated Keynes with arsenic. Although Skidelsky (2000, 42) cites Keynes's letters to Plesch dated April 13 and April 18, 1939, he omits the vital passages on arsenic.

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[25] For other passing references in the literature to Keynes's arsenic treatments, see Skidelsky (1992, 635) and Davenport-Hines (2015, 310).

[26] An old saying about syphilis went, "A night with Venus, a lifetime with Mercury" (Hayden 2003, 237).

The very fact that there is confusion over Keynes's heart condition suggests syphilis rather than rheumatic heart disease or bacterial endocarditis. By the 1930s, the terms rheumatic heart disease and bacterial endocarditis were long established, and they were not stigmatized like syphilis. If Keynes had these conditions, numerous references should be easily found in letters, medical reports, and early biographies. By contrast, syphilis had an "aura of disgrace, shame and secrecy" (Ellmann 1988, 92n). Whereas discretion over syphilis would be expected, the silence over rheumatic heart disease or bacterial endocarditis is inexplicable.

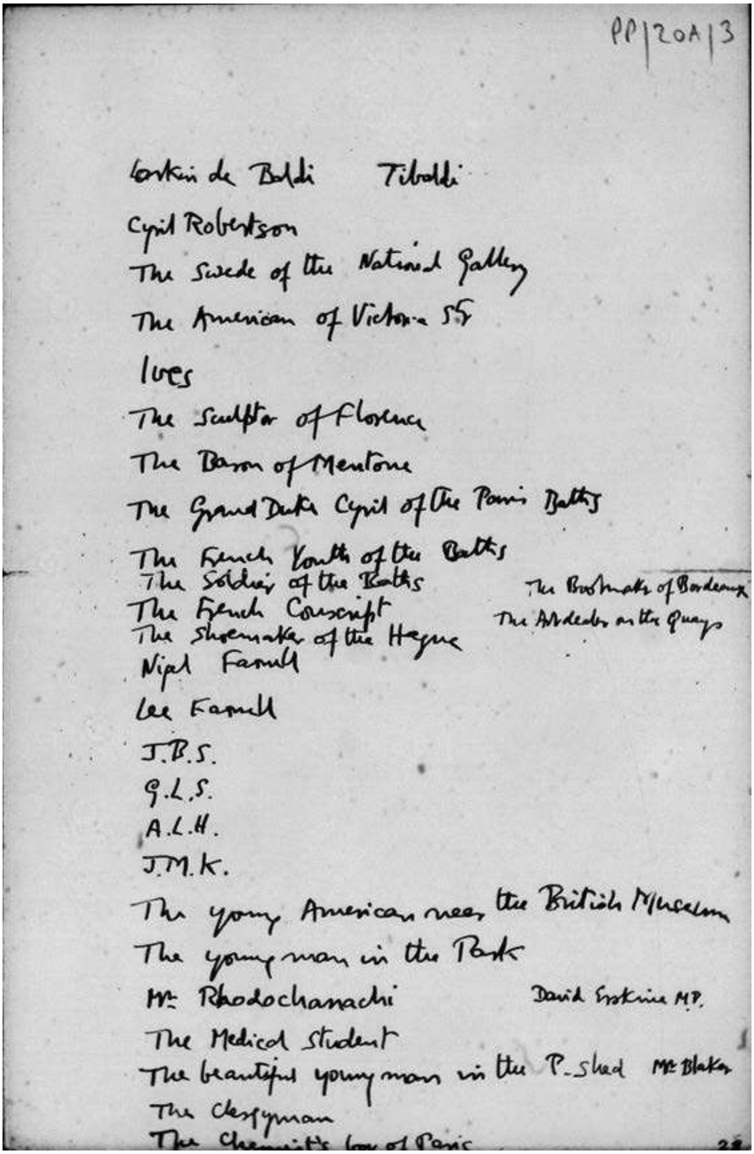
VIII.
CONCLUSION

Did Keynes have syphilis? The classical framework for diagnosing syphilis suggests that he is a very strong candidate: (1) he engaged in high-risk sexual activity, (2) there was a sudden change in health with symptoms of secondary syphilis, (3) he suffered various sicknesses in the years after his sudden change in health, (4) his various sicknesses caused confusion, (5) he received treatments with substances used to treat syphilis, and (6) his cause of death is consistent with cardiovascular syphilis. Most importantly, he received poisonous Combined Treatment therapy with mercury, iodides, and arsenic—the main treatment for syphilis at the time.

The evidence that Keynes had syphilis seems overwhelming. No doubt, the enormous stigma surrounding the disease will make Keynesians reluctant to admit syphilis. It must be stressed, however, that his heart disease was infectious, not genetic (Clarke 2009, 78). That leaves only three plausible options: endocarditis, rheumatic heart disease, or cardiovascular syphilis. Given its rapid progression, bacterial endocarditis must be abandoned. Consequently, rheumatic heart disease is the only viable alternative to syphilis. While Keynesians might plead rheumatic heart disease, his sexual history, wide ascending aorta, tonsils, advanced age, and treatment plan make it most likely that Keynes had syphilis.

APPENDIX

DOCUMENT 1.
KEYNES'S ANONYMOUS PARTNERS (*KEYNES PAPERS* PP/20A/3)



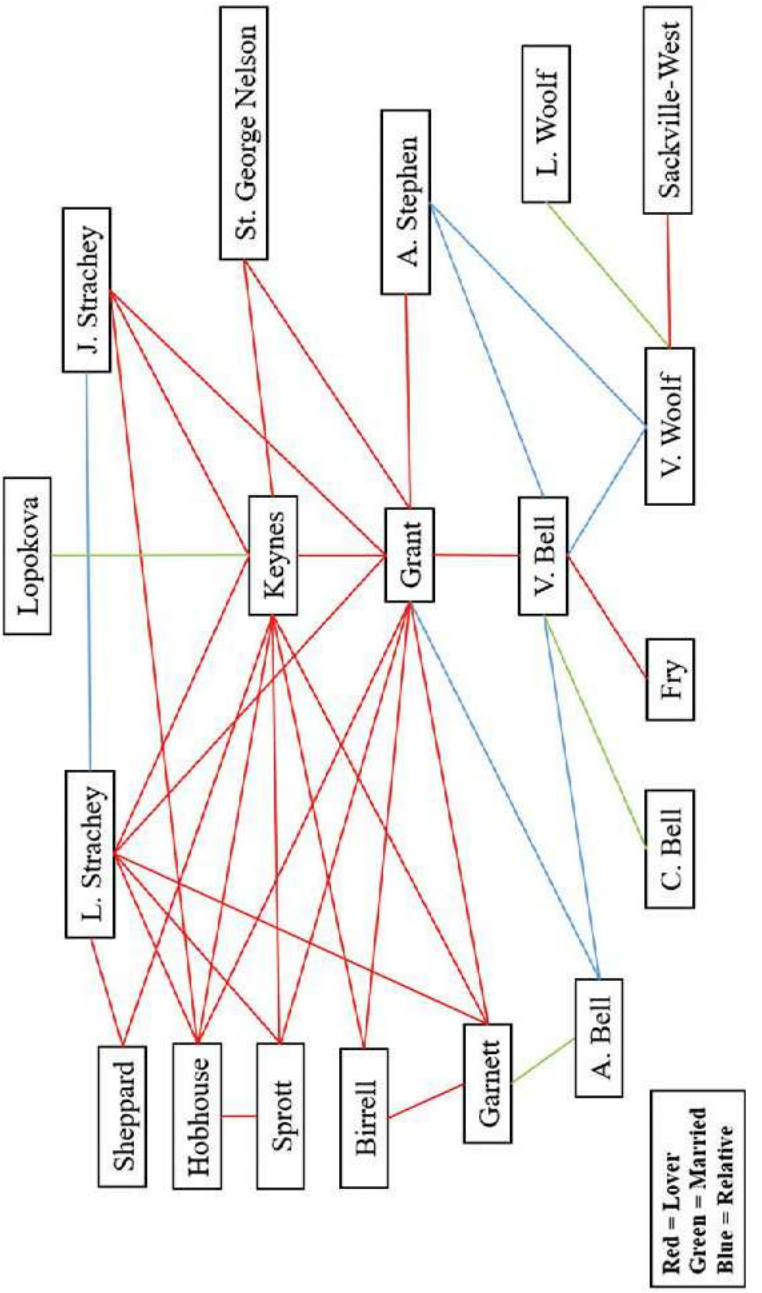
PP/20A/3

Lorkin de Boldi Tibaldi
Cyril Robertson
The Swede of the National Gallery
The American of Victoria St.
Ives
The Sculptor of Florence
The Baron of Mentone
The Grand Duke Cyril of the Paris Baths
The French Youth of the Baths
The Soldier of the Baths
The French Conscript
The Shoemaker of the Hague
Nigel Farnall
Lee Farnall
J.B.S.
G.L.S.
A.L.H.
J.M.K.
The young American near the British Museum
The young man in the Park
Mr. Rhodochanachi
The Medical Student
The beautiful young man in the P. shed
The Clergyman
The Chemist's boy of Paris

The Bootmaker of Bordeaux
The Artdealer on the Quays
David Erskine M.P.
Mr. Blaker

28

DOCUMENT 2.
BLOOMSBURY SEXUAL NETWORK DIAGRAM



DOCUMENT 3.
PATTERSON'S REPORT FOR KEYNES, 5 SEPTEMBER 1937
(*KEYNES PAPERS* PP/10/5)

PP/10/5

Confidential.

Copy.

TELEPHONE, 66 RUTHIN
STATION, RUTHIN, L.M.S.

RUTHIN CASTLE,
NORTH WALES.

22nd September 1937.

Mr. J. Maynard Keynes. Age 53.

Admitted 18th June '37. Length of stay 3 months.

Summary of history. Bilious in youth. Diphtheria 191?. Appendicitis with peritonitis 1917. In 1933 febrile attacks with pain in chest, attributed to intercostal rheumatism. August 1936 began to complain of pain behind sternum on exertion; worse in December and movement more restricted. January 1937 febrile attack ("influenza"), pain behind sternum more severe after; another attack of pyrexia in February and third attack in May, during which B.P. noted 95/75 (previously 120/64). Electrocardiogram in April, much left axis deviation, flattened T_2 and reversed T_3. Cholecystography normal.

Complaint on admission. Retrosternal pain and tightness with exercise and emotion; recurring attacks of pyrexia; muscular pains in right side of chest and along costal margin.

Examination. Weight 13 st. 2 1/8th lb. (loss of a stone since Xmas). Pale; blood 95% Hb., 4,600,000 red and 5,900 white cells per c.mm.; N.P.N. 29 mgm., uric acid 3.1 mgm. per 100 ml.; sedimentation rate 15 m.m. per hour; W.R. negative. Pulse regular, radial artery not thickened; B.P. 106/68 mm. Hg.; heart enlarged to left, poor first mitral sound, no murmur; aortic second clear; with x ray, left ventricle and left auricle enlarged, wide ascending aorta; electrocardiogram gross left axis deviation, T_2 and T_3 reversed. Chest clear; with x ray, massive adhesions of right diaphragmatic pleura, posterior mediastinum clear. Alimentary: tongue clean; tonsils septic, pus in right, fusiform bacilli, strept. viridans; abdomen not distended, liver not enlarged; P.R. scars of injected piles, prostate normal. Nervous reflexes, sensation and fundi normal. Urine: S.G.1018, normal; faeces nil abnormal on culture. Urea concentration (after 15 g. of urea) 1.6- 2.2%.

Diagnosis. Coronary disease, large heart and aorta; septic tonsils.

Treatment. Bed for further six weeks; gentle daily massage; light ordinary diet; half grain of grey powder at night; throat swabbed daily with weak N.A.B. solution and sprayed twice a day with a lotion containing one teaspoonful of equal parts of biborate, bicarbonate and chloride of soda in a tumbler of water.

p.t.o.

DOCUMENT 4.
SYPHILITIC SORES IN THE BACK OF THE THROAT (CIRCA 1900)

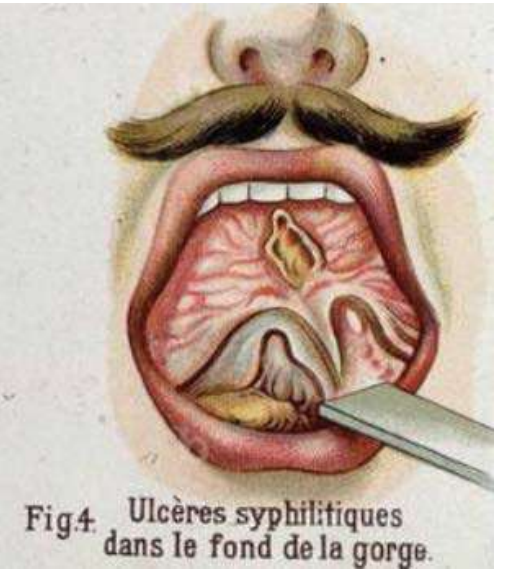
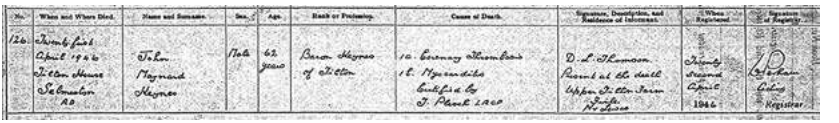


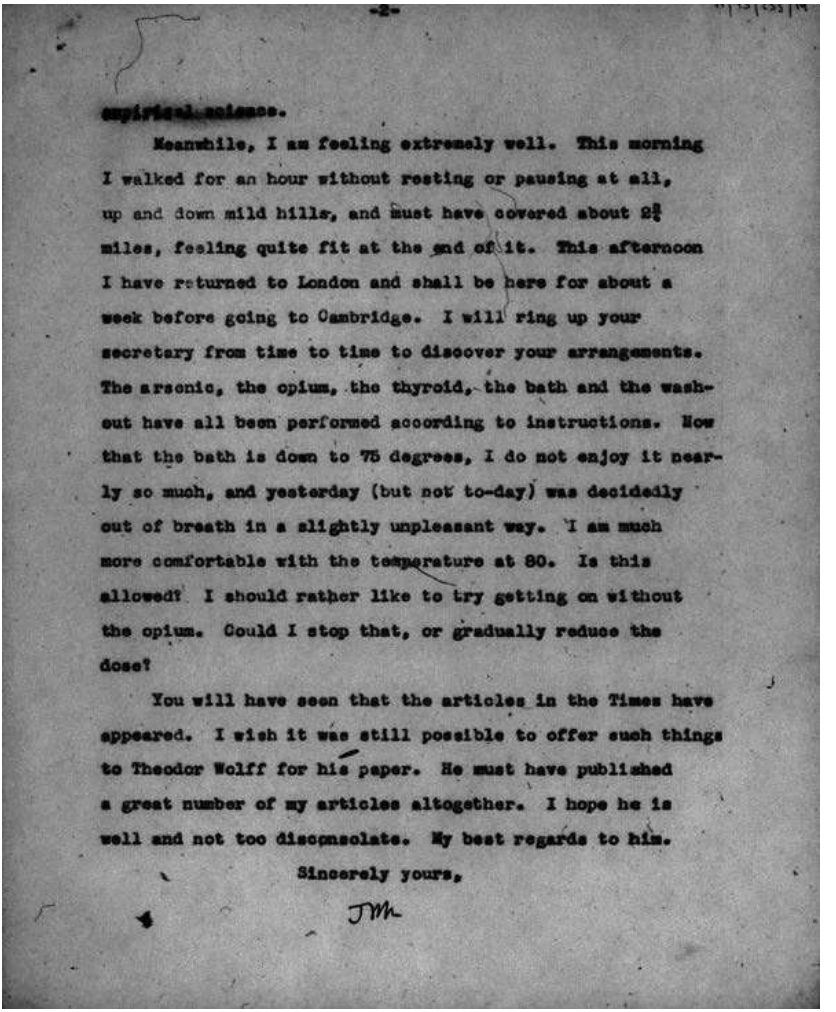
Fig.4 Ulcères syphilitiques dans le fond de la gorge.

DOCUMENT 5.
NEOARSPHENAMINE (N.A.B)

DOCUMENT 6.
KEYNES'S DEATH CERTIFICATE



DOCUMENT 7.
KEYNES TO PLESCH ON ARSENIC, APRIL 18, 1939
(*KEYNES PAPERS* PP/45/255/19)



-2-

empirical science.

Meanwhile, I am feeling extremely well. This morning I walked for an hour without resting or pausing at all, up and down mild hills, and must have covered about 2½ miles, feeling quite fit at the end of it. This afternoon I have returned to London and shall be here for about a week before going to Cambridge. I will ring up your secretary from time to time to discover your arrangements. The arsenic, the opium, the thyroid, the bath and the wash-out have all been performed according to instructions. Now that the bath is down to 75 degrees, I do not enjoy it nearly so much, and yesterday (but not to-day) was decidedly out of breath in a slightly unpleasant way. I am much more comfortable with the temperature at 80. Is this allowed? I should rather like to try getting on without the opium. Could I stop that, or gradually reduce the dose?

You will have seen that the articles in the Times have appeared. I wish it was still possible to offer such things to Theodor Wolff for his paper. He must have published a great number of my articles altogether. I hope he is well and not too disconsolate. My best regards to him.

Sincerely yours,

JMK

Conflict of interest

The author declares that he has no conflict of interest.

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