Comment

The Role of Expertise in Discovery. Comment on Sutton and Griffiths (2018). Using Date Specific Searches on Google Books to Disconfirm Prior Origination Knowledge Claims for Particular Terms, Words, and Names. *Social Sciences* 7: 66

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Abstract: In claiming that expertise are unnecessary for making discoveries that contribute to knowledge, Sutton and Griffiths in their 2018 paper made analogous comparisons with metal detection, then proceeded to provide six examples in support of their argument. This response demonstrates the fallacy of that analogy, and reveals how each of those six examples were undermined by a lack of expertise in the relevant disciplines. The mistakes contained in that paper by Sutton and Griffiths make it evident that expertise are required to identify the validity of a discovery, and ensure that a claim is not false. This assurance is particularly needed for the bold claims made by the Sutton and Griffiths paper.

Keywords: big data; Internet Date Detection method; myth-busting; *Google Books*; database searches

1. Introduction

In claiming that expertise is unnecessary for making discoveries that contribute to knowledge, Sutton and Griffiths (2018) made analogous comparisons with metal detection and then proceeded to provide six examples in support of their argument. This response demonstrates the fallacy of that analogy and reveals how those examples were undermined by a lack of expertise in the relevant disciplines. The mistakes contained in Sutton and Griffiths (2018) make it evident that expertise is required to identify the validity of a discovery and ensure that a claim is not false. This assurance is particularly needed for the bold claims made by Sutton and Griffiths (2018).

Sutton and Griffiths (2018) accused evolutionary biologist Richard Dawkins of not accrediting his friend and colleague Bill Hamilton for selfish genes in "Dawkins used the term and concept without citing Hamilton's prior-publication as the origin of the term". The paper also questioned the authenticity of innovations by sociologists Robert Merton, Stanley Cohen and Jock Young and novelist Charles Dickens, either suggesting their cryptomnesia[1] or credulous accreditation by many subsequent authors. The paper also debased the *Oxford English Dictionary* and expert knowledge in general.

These claims arose from application of a "new research method ... a very precise six-stage Boolean date-specific research method on *Google*, referred to as Internet Date Detection (IDD)" (Sutton and Griffiths 2018, p. 2). Findings led to the opinion that:

"Answering the most basic research question, as to whether the manual IDD method, or using *Google Books* Advanced Book Search as it currently functions, is better than referring to expert knowledge in highly esteemed publications, the research conducted here found publications containing earlier than previously published use of words, terms, and names that had, until then, lain undetected in the historic publication record ... each of these newly found facts has been shown to disconfirm expert knowledge claims regarding the history of the published origins of specific names, terms, and phrases." (Sutton and Griffiths 2018, pp. 5–6)

Specifically, Sutton and Griffiths (2018) contended that earlier appearances of words and phrases "*disconfirm expert knowledge*" of their established etymology. For this to be so, those "*newly found facts*", offered as examples in support of the proposed method, must be shown to be factual, bear relation to the modern meaning and be more than just coincidental sequences of words. Indeed, the paper made an invitation to the reader, "*The date of any publication found using the IDD method should be verified independently*" (Sutton and Griffiths 2018, p. 4), and that is what this response has done, finding all of the data to be invalid.

This is a direct response to Sutton and Griffiths (2018), which deconstructs the method presented in the paper revealing it not to be "*an innovative and practical tool*", as claimed (Sutton and Griffiths 2018, p. 7), but simply an application of the existing, universally used facilities available in most *Google Services*. This response considers faults with that method, then proceeds *seriatim* to show how each of the examples Sutton and Griffiths (2018) gave in support of the claims were nullified through mistakes with data sampling and analysis. At no point is it intended to diminish the value of *Google* nor any of its services, or the value of valid non-expert contributions. Equally, the following criticisms of Sutton and Griffiths (2018) are not related to the etymological uncertainties of language; the claims made about word origins are invalid solely because of flaws in method and analysis. The only presumption made is that all published research ought to be carried out to the highest standards, deserving of its entry into the academic literature.

2. Faults with Method

Sutton and Griffiths (2018) attempted an analogy for the approach presented in the paper, to show how non-experts can make discoveries, "*An amateur discovered the largest known burial of Anglo-Saxon gold, with a metal detector* (Alexander 2011). *Analogously, Internet search engines enable non-experts to detect long buried literary treasures that experts would wish to find*" (Sutton and Griffiths 2018, pp. 2–3).

The fortuitous discovery of gold was used to draw parallels with how Internet search engines allow nonspecialists quick access to information, which would otherwise take experts many times longer, through precise, methodical enquiry. The analogy is fallacious. The misunderstanding was formed from the incorrect assumption that the discovery and the apparently quick recovery of the treasure comprised the full extent of invested effort (John Stuart Mill first described this *false analogy*, an informal, logical fallacy, Mill 1843). In reality, work on the 'Staffordshire Hoard' continued for a further seven years, via the usual gradual method of slow excavation to manually remove shallow soil strata. For an honest comparison, the figure needed to include this extended period after the original discovery,[2] yet Sutton and Griffiths (2018) used an analogy that accounts for only 0.4% of the relevant period spent on the site, and an imperceptible fraction of the contribution to the entire research effort required, which was contributed in the main by professional archaeologists.

If the value of discovery is reduced to financial gain, fame, praise, etc., alone, then it has little-to-no value for knowledge. If Sutton and Griffiths (2018) considered the 'Staffordshire Hoard' to be only of financial value, then using its initial discovery as an analogy for knowledge was irrelevant to the claims made by the paper, and a *non sequitur*. In reality, to achieve the discovery's contribution to knowledge required the focus of experts for years after.

3. Appropriation of Default Functionality

Sutton and Griffiths (2018) presented a method that was detailed in "*six following very specific steps*" (Sutton and Griffiths 2018, p. 3). Contrary to the claim that this is a "*new research method*" (Sutton and Griffiths 2018, p. 2), and also that these six steps constitute "*an innovative and practical tool*" (Sutton and Griffiths 2018, p. 7), any practical facility is purely as a result of *Google*'s innovation. Specifically, every detail of a *Google* search described by Sutton and Griffiths (2018) is explicitly catered for within the existing *Google* utility, and is strictly equivalent to existing options clearly intended for the user, and for whom they are accessibly documented within the online *Help System*.[3] Essentially, all *Google* search engines

employ a standard syntax, meaning that each of the steps presented by Sutton and Griffiths (2018, pp. 3–4. See Appendix A) already has a widely used[4] standard function within the *Google*-search user interface, including *Google Books*. It is specious to claim, "*The Internet Date Detection (IDD) method is a six-stage Boolean research method developed by the first author*" (Sutton and Griffiths 2018, p. 3).

4. Appropriation of Public Resource

As explained by the above deconstruction, the facilities provided for *Google* searches were default settings within the user interface, yet Sutton and Griffiths (2018) appropriated this existing, named public resource, renamed it "Internet Date Detection", and claimed ownership, "The present paper introduces a new research method that can be used within *Google Books* . . . a very precise six-stage Boolean date-specific research method on *Google*, referred to as Internet Date Detection (IDD) for short" (Sutton and Griffiths 2018, p. 2).

The paper also claimed that "IDD transcends using the search engine the way its developers apparently intended and involves altering *Google*'s default search parameters to get it to search on exact words, terms, and names multiple times in a very specific way". (Sutton and Griffiths 2018, p. 2).[5] This claim is based on the false assertion that "*Google*'s programmed default position is to stop users doing exactly that and to make them search wider and so is less precise" (Sutton and Griffiths 2018, p. 2). This is fallacious as *Google* is simply a search engine with default parameters for the user "Tools", namely, "Any country", "Any time" and "All results". These facilities simply filter existing results, and therefore cannot influence user behaviour. In this way, the user exerts control over their search items, so these facilities cannot be used by *Google* to "stop users" or "make them" conform to any predetermined Internet search behaviour (Sutton and Griffiths 2018, p. 2).

5. Misconceptions about Mechanism

Sutton and Griffiths (2018, p. 3) stated, "*The Internet Date Detection (IDD) method is a six-stage Boolean research method developed by the first author*", and that limitations in the method were due to constraints in the *Google* search algorithm, "*the loss of functionality of the IDD method is that Google Inc. introduced a new autonomous artificial intelligence deep learning program (called RankBrain)*" (Sutton and Griffiths 2018, p. 7). However, *RankBrain* (launched in April 2015; Schachinger 2017) is unrelated to the date-related aspect of the *Google* (contained in a core algorithm called *Hummingbird*) semantic search engine (Shewan 2014). *Rankbrain* uses 'vector space' machine learning (Mikolov et al. 2013) to better sort items based solely on the user's context, i.e., it attempts to second-guess the user's intention for making a specific search and presents items earlier in the results that it predicts the user will favour (Pedraza 2017). *Rankbrain* is only third in line with respect to determining the order of search results (Schwartz 2016), after page content (identified by keywords) and popularity (measured by the number of links to a page). It therefore plays no part in restricting those stronger 'signals', because its action is subordinate and only related to sorting, not filtering (Sullivan 2016). Hence, while "*the IDD method first used to unearth it, no longer detects Fraser's Magazine (1841)* [sic][6] *use of the term 'self-fulfilling prophecy' as it did when the first author detected it on 30 October 2013*" (Sutton and Griffiths 2018, p. 6), this could not have been as a consequence of *Rankbrain*.

More impactful on *Google*-algorithm functionality are the frequent updates (Moz 2020), especially roll-out of its *Bidirectional Encoder Representations from Transformers* unit, a.k.a. *BERT* (Devlin et al. 2019), which, rather than simply matching keywords, seeks to contextualise search terms using 'natural-language processing', from which the main consequence for search effectivity in *Google Books* has been an improvement in parsing extracts ("snippets"). Previously, the *Google Books* search engine was known to be inconsistent and inaccurate, especially when setting date windows; for example, it was advisable to 'manually' search within results from a wider range of years than strictly required: a search for "self-fulfilling prophecy" by the current author on 18 September 2019 failed to find Fraser's Magazine (1841) (see Note 6 above) within a 30-year span (1 January 1825 to 31

December 1855), whereas it is now possible to locate Fraser's Magazine (1841), not only for the large time window used in Step 4 of the method (Sutton and Griffiths 2018, p. 3. See Appendix A), but right down to the exact year (i.e., searching for "self-fulfilling prophecy" with a date range from 1 January 1841 to 31 December 1841).

Despite these improvements, problems over consistency remain, not least from licensing changes for individual titles and corrections being made to metadata: for example, varying the parameters for the method elicited additional early instances of the search term (Watson 1842, p. 84; Barbour 1854a, p. 21; Barbour 1854b, p. 522). Given the specifics of the *Google* algorithm, any previous anomalous results found for the method, such as for "*Hoffman (1841)* [*sic*]" (Sutton and Griffiths 2018, p. 6), will more likely have been due to the specified search parameters, rather than a limitation within the search engine, *per se*.

In science, instrumentation, and models in particular, typically undergoes a Sensitivity Analysis, where parameter variables are tested for how they influence outcomes. Sutton and Griffiths (2018) failed to submit the proposed method to a Sensitivity Analysis, otherwise such anomalous behaviour would have been apparent, quite independent of developments in *Google* technology since 2013. Despite such sensitivity issues having been largely solved since then, through updated algorithm architecture, there is still a huge potential for human error, which brings us onto the faults with the examples tendered in support of the proposed method.

6. Faults with Examples

Testing the six examples offered in support of the proposed method and claims presented in Sutton and Griffiths (2018) reveals problems with the data and the related analysis: that the data are erroneous (Examples 1, 2 and 6), that the interpretation is erroneous (Examples 1, 3, 4 and 6) and that it is a misrepresentation of the literature (Examples 1, 5 and 6). The specific issues within these examples are discussed below, organised according to each claim, with details of the test process (a precise repeat of the proposed method as presented) and the subsequent results.

Example 1. *'Self-fulfilling prophecy'.*

There seems to be a healthy appreciation in Sociology that Merton was honest about his sources (e.g., "*Although the term "self-fulfilling prophecy" was new, the idea was not, and Merton wove it into his text with no claim of originality. Indeed, he abjured pretenses of innovation*", Wineburg (1987)). Indeed, Merton (1948) clearly traced development of the concept from even before its formal introduction by William and Dorothy Thomas in 1928,

> "W. I. Thomas, the dean of American sociologists, set forth a theorem basic to the social sciences: "If men define situations as real, they are real in their consequences". . . . essentially the same theorem had been repeatedly set forth by disciplined and observant minds long before Thomas . . . we find this mixed company (and I select from a longer if less distinguished list) agreeing on the truth and the pertinence of what is substantially the Thomas theorem . . . To what, then, are Thomas and Bossuet, Mandeville, Marx, Freud and Sumner directing our attention?" (Merton 1948, p. 193)

Merton then spent a large portion of that seminal 1948 paper applying the self-fulfilling prophecy concept to race relations in the USA, while giving a precise definition that revised the idea to create a functional sociological model, the explicit negation of an initial falsehood, absent in the Thomas original (e.g., Joubert 1992, p. 93),

"If men define situations as real, they are real in their consequences". (Thomas and Thomas 1928)	"The self-fulfilling prophecy is, in the beginning, a false definition of the situation evoking a new behaviour which makes the originally false conception come true". (Merton 1948)

Thomas' original work (Thomas and Thomas 1928) had built on his and Florian Znaniecki's concept "*definition of the situation*" that called for personal assessment within the context of society and "*the traditions, customs, beliefs, and aspirations of his social milieu*" (Thomas and Znaniecki 1918). Merton's innovation combined the Thomas theorem with counteraction, in response to a false "*definition of the situation*", with the outcome of situation reversal (in contrast to his earlier work on the "self-defeating prophecy", Merton (1936)).

Claim 1.1: "*Textbooks (e.g., Gold 2009; Hoffer 2010), and arguably less scholarly online sources such as Wikipedia (https://en.wikipedia.org/wiki/Self-fulfilling_prophecy, access on 29 September 2020) simply claim that the sociologist Merton (1948) coined the basic term*" (Sutton and Griffiths 2018, p. 3).

Test: Sutton and Griffiths (2018) alleged the references provided claimed Merton coined[7] the term "self-fulfilling prophecy", before applying the method to "*verify whether Merton was the originator of the term 'self-fulfilling prophecy'*" (Sutton and Griffiths 2018, p. 3). It follows that the accusation is that those references claimed Merton invented the phrase "self-fulfilling prophecy".

However, the first reference provided, "*Gold 2009*", does not state Merton (1949) contained the first appearance of "self-fulfilling prophecy" ever to be seen in print,[8] just that it was the first in the context defined by Merton,

> "Robert King Merton coined English *self-fulfilling prophecy* (Cohen 1998, pp. B9, B13) and first used it in print in his *Social Theory and SocialStructure* (1949, p. vii). That is indeed the earliest citation for the term in *The Oxford English Dictionary*, which should have added that he coined it." (Gold 2009, p84 footnote)

Gold's (2009) original source in *The New York Times* had only a single mention of "self-fulfilling prophecy" and also made no suggestion that "*Merton was the originator of the term*",

> "Even if most people haven't heard of Mr. Merton, they have probably heard of his ideas. He coined the phrase ''self-fulfilling prophecy" and developed the idea of 'role models'". (Cohen 1998)

The second reference given, "*Hoffer 2010*", is even clearer in its attribution, and again the verb 'to coin' is used legitimately, without specifying invention,

> "The self-fulfilling prophecy is rarely given credit for what it is—an argument about causation. The term was coined in 1949 by the sociologist Robert K. Merton, but the phenomenon is as old as human psychology". (Hoffer 2010, p. 76)

Despite doubts about Wikipedia's value in research, it is also accurate in identifying Merton's adaption of an earlier idea to develop the novel concept and qualifies the statement with an academic citation[9].,

> "Using Thomas' idea, another American sociologist, Robert K. Merton, coined the term "self-fulfilling prophecy", popularizing the idea that "a belief or expectation, correct or incorrect, could bring about a desired or expected outcome" . . . Merton applied this concept to a fictional situation. In his book *Social Theory and Social Structure*, he uses the example of a bank run to show how self-fulfilling thoughts can make unwanted situations happen".

Result: Claim 1.1 is false because none of the references offered by Sutton and Griffiths (2018) used 'to coin' to state that Merton invented the term "self-fulfilling prophecy".[10]

Claim 1.2: Sutton and Griffiths (2018, p. 3) stated aim was, "*Avoiding opening up a new debate as to whether Merton's use 'coined' a specific sociological meaning, but to simply verify whether Merton was the originator of the term 'self-fulfilling prophecy', the six following very specific steps were taken . . .*". At this point the paper expounded on the method, describing the six-stage

process executed in *Google Books*, discussed above and deconstructed in Appendix A. The paper claimed that it produced, "*numerous pre-1948 books containing the precise phrase, many books in the nineteenth century. This proves that Merton never coined the term*". (Sutton and Griffiths 2018, p. 3, Step 5). Again, it is clear that the accusation was related to invention and not application to a new context.

Test: Repeating the same search "self-fulfilling prophecy" between 1 January 1500, and 31 December 1948 (Sutton and Griffiths 2018, p. 3, Step 4), returned 20 viable items for verification (Table 1). After checking, 18 items were deemed invalid for inclusion, all having been published later than 1948. Only two (items #2 and #19) qualified for further consideration, as they were dated correctly in their metadata, with publication dates prior to 1949. Of these two, one (#19) was Merton's 1948 paper.

Table 1. Search results obtained by repeating the method presented in Sutton and Griffiths (2018, pp. 3–4). Test carried out on 20 July 2020, producing 20 viable items for verification after 4 items were omitted because there was no option to "preview" the publication nor the ability to see a "snippet". Eighteen of the twenty items were labelled with incorrect dates and were actually published after 1948. Two items were correctly dated (asterisks), one of which was the original use of the phrase by Merton (1948). Links in *Google Books* and sources used to verify publication dates are provided in Appendix B.

	Google Books	**Label**	**Actual**
1	Records and Briefs of the United States Supreme Court	1832	1973
2 *	Fraser's Magazine—Volume 23	1841	1841
3	The Annals of the American Academy of Political and Social Science, Volume 423	1890	1976
4	The Sociology of Crime and Delinquency in Britain	1900	1971
5	The Law Society's Gazette—Volume 60	1905	1963
6	Monographs of the Society for Research in Child Development	1935	1971
7	Parliamentary Debates (Hansard): House of Commons Official Report, Volume 317	1936	1998
8	Public Affairs Pamphlet	1936	1975
9	Social Education—Volume 26	1937	1962
10	The American Biology Teacher—Volume 34	1938	1972
11	Public Utilities Fortnightly—Volume 28, Issue 2	1941	1980
12	American Scientist—Volume 57	1942	1969
13	North Carolina Libraries—Volumes 38–39	1942	1981
14	Educational Leadership	1943	1972
15	Etc: A Review of General Semantics—Volume 22	1943	1965
16	Bulletin of the Atomic Scientists—Volume 32	1946	1976
17	Elementary English—Volume 51	1947	1974
18	Research Memorandum—Volumes 6373–6385	1947	1970
19 *	The Antioch Review—Volume 8	1948	1948
20	Common Ground—Volumes 9–10	1948	1949

Sutton and Griffiths (2018, p. 4) forewarned that "*The date of any publication found using the IDD method should be verified independently, because it is not an infrequent occurrence for Google to attribute the wrong date to some of its scanned publications*", yet they clearly failed to follow this advice. The items produced by the method, and, hence, the evidence

for the claim that "*numerous pre-1948 books containing the precise phrase*", were labelled incorrectly in their metadata with spurious dates, all earlier than their actual publication dates. Displaying an incorrect publication date is a characteristic flaw of *Google Books*, one of several "endemic" errors (Nunberg 2009) that ensure the corpus should never be trusted at face value, so all data have to be thoroughly checked. It is apparent that Sutton and Griffiths (2018) failed to check these search results to confirm those publication dates against the printed dates on each of the publications' title pages.

Rejecting the 18 items with publication dates later than 1948 and the Merton (1948) paper, the single remaining, correctly dated item (#2 in Table 1), is an authentic earliest occurrence of the search phrase. Having said that the wish was to avoid "*opening up a new debate as to whether Merton's use 'coined' a specific sociological meaning*" (Sutton and Griffiths 2018, p. 3), the paper then proceeded to offer this item as proof of the method working in such a way that considering the "*specific sociological meaning*" was unavoidable, since "*the simple term was used by Hoffman in 1841 [sic], long before Merton's own first published usage, and arguably with the same essential meaning*". Checking this claim, regarding the similarity of "*essential meaning*" against what Fraser's Magazine (1841) actually said, we can see that it differed markedly to Merton's concept,

> "It is not in such a way that truth operates and grows, as it is not by the putting together of particles that life is produced; but the life puts together the parts, and constitutes the body; and *from* the operation of the awakened idea to its development in the practical form is the right process of conviction and conversion in the minds of men... We say, let the *idea of what we want* penetrate our rulers and our people, and it will be a *self-fulfilling prophecy of what we shall have*." (Fraser's Magazine (1841, p. 130); original emphasis)

This is equivalent in positivity to Thomas and Thomas (1928), "*If men define situations as real, they are real in their consequences*", but nothing about negation and reversal, for a "*false conception come true*", and so not the "*same essential meaning*" as Merton (1948).[11]

Other than having no evidence for having found "*numerous pre-1948 books containing the precise phrase*", Sutton and Griffiths (2018) also wrongly questioned, "*Merton's originality in coining the term 'self-fulfilling prophecy'*" and falsely claimed, "*many recent textbooks... and peer-reviewed papers... are wrong about Merton's originality*". While most writers can discriminate between stating an original concept and the development and application of a concept to a new context, instead, the paper perpetrated a 'straw man'[12] by incorrectly claiming "*the same essential meaning*" between the Thomas theorem and the Merton model.

Identifying early examples of the Thomas theorem should come as no surprise: Merton (1948, p. 193) had already stated "*essentially the same theorem had been repeatedly set forth by disciplined and observant minds long before Thomas*". If people set their minds to achieving something, they can make it a reality (Fraser's Magazine 1841, p. 130). The likely terminal patient is told they will die, and that most likely outcome is realised (Watson 1842, p. 84). Virginians are downcast and self-destructive and were warned that depression would inevitability follow (Barbour 1854a, p. 21; 1854b, p. 522). The reinforcing, "positive feedback" (Daipha 2015, p. 214) in response to the "false definition" in Merton's concept is markedly distinct from this linear causality of the Thomas concept, constituting a different context that is not reflected in those early uses of the term.

Result: Sutton and Griffiths (2018) was wrong in this claim because it mistook a history of citation and misrepresented the literature by asserting equality for an antithetical context. If any misappropriation occurred, it was by Thomas copying from one of the early publications, but this is tenuous given the sociological framework that was constructed (Thomas and Thomas 1928, Thomas and Thomas 1928), since they did not employ the phrase "self-fulfilling prophecy". Vitally, Merton (1948) did not misappropriate the concept from Thomas and Thomas (1928), nor the phrase "self-fulfilling prophecy" from any previous writer, because the search items produced by Sutton and Griffiths's (2018) proposed

method were predominantly invalid (19 out of 20 is equivalent to a 95% error rate), and whenever it did appear earlier, the context was antithetical to Merton's concept.

Example 2. '*Humpty Dumpty*'.

Humpty Dumpty and *Punchinello* have documented histories that do not coincide. *Punchinello* has origins in C16th. *Commedia dell'Arte* (Fava 2014, p. 109). *Pulcinella* is a *pagliaccio*, ("clown") (*Polichinelle* in France, later as a puppet; introduced into England C17th. as the puppet *Signor Bologna*, also known as *Punchinello* and later *Punch* and *Mr Punch*. His wife *Judy* was originally the character *Zezza* in Italy). Humpty Dumpty's origins are lost in myth, but there exist several well-known potential sources: none of them a character from Italian comedy. They include,

- C15th.: Nickname for obesity, "short and broad", possibly from Scottish "*dumpy*" for "*short and thick*"; also, a hunchback (e.g., Jamieson 1841, p. 345; Hotten 1860, p. 135).
- 1485: Battle of Bosworth—Richard III—horse named "Wall", also slang for Welshman Henry Tudor.
- 1530: Cardinal Wolsey's flight from Cawood, Yorkshire, returning to London, but died in Leicester.
- 1648: A cannon that broke through Colchester's St. Mary's Church's tower roof on June 15th, when fired by One-Eyed Jack Thompson, during the Second English Civil War (*see below*). Moreover, suggested is Charles I, himself.
- c. 1690: "*Ale boil(e)d with Brandy*" also known as *Humptie Dumtie* and *Humptey-Dumpt(e)y* (Gent 1698; Carew 1782, p. 239).
- C18th.: A clumsy person.
- 1797: As a character in nursery rhyme (Samuel Arnold's *Juvenile Amusements*).
- 1810: *Gammer Gurton's Garland* (Ritson 1810), with a variation of the original poem.
- 1841: James Orchard Halliwell's *The Nursery Rhymes of England*, with a modification of the original verse (Halliwell 1842, p. 92).
- 1843: The 2nd edition of Halliwell's work, with further modification (Halliwell 1843, p. 113).
- c. 1850: A pantomime character, "*Humpty Dumpty is an intelligible sprite, who issues from an egg*" (Tallis 1850, p. 83).
- 1871: The egg in Dodgson's (Lewis Carroll) *Alice in Wonderland*.

Additionally, the eponymous nursery rhyme has independent histories in France, Germany, Sweden and Norway (e.g., Eckenstein 1906, pp. 91, 104–114, 219). This could be important because it provides alternative paths for introduction of the name as a translation from abroad. Therefore, there are no grounds for the comparative mention of two otherwise-distinct characters, based upon a stated incongruity of character, to be taken as evidence that their origins are shared.

Claim 2: "*The character name Humpty Dumpty appears to be derived from the classical comedy character villain Punchinello (predecessor of Mr. Punch)—see Anonymous (1701, p. 28): 'Beau Humpty-dumpty next appears/A merry Lump well grown in Years/With Back and Breast like Punchanello' Moreover, disconfirming the apocryphal story of the siege of Colchester (e.g., Willock et al. 2014), the present authors found no evidence whatsoever in the historic literature record of a Royalist force cannon in the English civil war named Humpty Dumpty. But IDD originally revealed that there was one used by the Parliamentary forces named Punchinello (see Pepys 1665, p. 1065).***" Sutton and Griffiths (2018, p. 4)

Test: There is an allusion only ("*like*"), to a similar body type, in the quoted poem, "*Beau Humpty-dumpty next appears/A merry Lump well grown in Years / With Back and Breast like Punchanello*". The poem then immediately proceeds to dissociate the two characters, "*But for his parts has not his fellow*". Sutton and Griffiths (2018, p. 4) omitted that contradictory part and, thus, presented a false comparison to forward an unfounded suggestion that "*The*

character name Humpty Dumpty appears to be derived from the classical comedy character villain Punchinello" (Sutton and Griffiths 2018, p. 4).

Instead, the established narrative traces Humpty Dumpty to a colloquial nickname for being overweight, which was translated into clumsiness, characterised in a poem about falling off a wall, personified on the stage and popularised as an egg by Lewis Carroll. Despite some references to historical incidents,[13] all other suggestions are anecdotal.

Result: Sutton and Griffiths (2018) presented false evidence and, thus, did not connect Humpty Dumpty with *Punchinello* other than via juxtaposition. Hence, the Colchester folktale is still relevant, and was not about a gun called "Humpty Dumpty", as was claimed. The later gun seen by Pepys is likely unrelated.

Example 3. '*Living fossil*'.

Charles Darwin's concept of a living fossil described an ancient lineage captured in an extant descendent, indicated by some obvious physical characteristic that has been maintained, essentially unchanged, since prehistoric times: for example, ferns, crocodiles, horseshoe crabs, coelacanths, etc.

Claim 3: "*The OED claims Charles Darwin (1859) coined the term 'living fossil'. The term 'living fossil' appears in the literature at least 147 years earlier in the work of a Welsh Botanist Lhwyd [sic] (1712, p. 506)*" (Sutton and Griffiths 2018, p. 4).

Test: The article Sutton and Griffiths (2018, p. 4) claimed to have first mentioned the term "living fossil", was a letter by Edward Lhuyd (his chosen spelling), reporting to the editor of the Philosophical Transactions that he was to return with "*the Account of the living Fossil Muscles*", a witness statement to be signed by four labourers attesting to having found some specimens of interest in Wales (Lhuyd 1699).[14]

In identifying these muscle specimens, we know that soft tissues do not fossilise, so there is something odd about "*muscles*" in this context. *Johnson's Dictionary* (Johnson and Walker 1827, p. 483) confirms that it is an old spelling of the shellfish mussel (*Mytilus* species). Lhuyd's intrigue with the specimens was that they were an anomaly, found near Mold, Flintshire, which is today over six miles from the nearest estuary at Connor's Quay, and 185 m above sea level. Lhuyd was wondering how these animals were where they were, about a metre underground, and ought only to have been there if fossilised. Typically (for the period), they were assumed to have been deposited by the Biblical flood, 4000 years beforehand.

Result: The mention by Lhuyd was referring to an anomaly of some mussels being strangely discovered in inland Wales, miles from the sea and at altitude, and unrelated to a modern organism appearing ancient. Sutton and Griffiths (2018) are wrong in this claim because it refers to a coincidental word sequence and has nothing to do with their palaeontology nor phylogenesis. Even by coincidence, *Mytilis* is not considered a living fossil (*sensu* Darwin 1859).

Example 4. '*Moral panic*'.

Moral panics occur when fear about moral situations become exaggerated, usually through media attention (Cohen 1972), resulting in ostracism of behavioural 'deviants' by moral panickers (Young 2011). The development of the concept is particularly associated with sociologists Stanley Cohen and Jock Young.

Claim 4: *The term, close to its most basic modern usage of escalating demonization of a group, as opposed to a flight caused by conscience (e.g., Quarterly Christian Spectator 1830), was used at least 46 years earlier than reported by the OED (see Journal of Health Conducted by an Association of*

Physicians 1832): 'Megandie a French physician of note on his visit to Sunderland where the Cholera was by the last accounts still raging praises the English government for not surrounding the town with a cordon of troops which as 'a physical preventive would have been ineffectual and would have produced a moral panic far more fatal than the disease now is'. (Sutton and Griffiths 2018, pp. 4–5)

Test: The François Magendie quote was from a letter to the President of the *French Institute*, Constant Duméril; thus, the original (Delaunay 1933, pp. 38–39) was, of course, in French, where it is significant that any equivalent words for "moral" and "panic" do not appear. This is because the quote appearing in the *Journal of Health* cited by Sutton and Griffiths (2018, p. 4) was a mistranslation, an artefact of translation, and, therefore, an invention of the translator and a coincidental word sequence. An alternative, accurate translation appeared in the *Cholera Gazette* in 1832, in which the words "moral" and "panic", quite rightly, also do not appear. Instead, the effect of poor sanitation was said to produce "consternation or despair" (Magendie 1832, p. 6).

> *"Le point capital est qu'aucune mesure sanitaire n'a été prise et tout le monde est d'avis que si le gouvernement anglais avait ordonné l'isolment par un cordon de troupes, la population de Sunderland, qui est d'environ 40,000 àmes, au lieu d'être comme aujourd'hui tranquille, ne paraissant donner ou ne donnant même presque aucune attention à la maladie, serait bientôt troublée et au désespoir et qu'il s'en suivrait des événments plus graves que le mal luimême."*

> ("The chief point is that no sanitary measure has been adopted, and all are of the opinion that if the English government had surrounded, by a cordon of troops, the people of Sunderland, who amounted to about 40,000, in place of being as they now are, tranquil, and gave little or no attention to the disease, they would have been soon thrown into consternation or despair, and events would have occurred more serious even than the disease itself.")

The statement "*would have produced a moral panic*" is a mistranslation of "*serait bientôt troublée et au désespoir*" ("troubled and despairing"). It is reasonable to suggest that the translator chose "*moral*" to mean "*morale*", the state of a person's sense of well-being; a contemporary dictionary, confirms the earlier spelling of modern day "morale" was "moral", in the sense that the word, "*may be applied to actions which affect only, or primarily and principally, a person's own happiness*" (Webster 1832, p. 148). Magendie's context is the individual, suffering anxiety and despair from poor sanitation during the onset of cholera, and not "*close to its most basic modern usage of escalating demonization of a group*" (Sutton and Griffiths 2018, p. 4).

Result: Sutton and Griffiths (2018) was wrong in this claim, as it is an artefact of translation, in reference to an individual's consternation (panic) and despair (morale), and is unrelated and a coincidental word sequence.

Example 5. '*Boredom*'.

"Boredom"[15] is used by Dickens (notably in "Bleak House", serialised between March 1852 and September 1853 and set, perhaps, a couple of decades previous), to describe a state of being: in each of its six appearances, boredom is a mental circumstance, an undesirable disposition to be avoided.

1. "Only last Sunday, my Lady, in the desolation of Boredom and the clutch of Giant Despair, almost hated her own maid for being in spirits."
2. "My Lady, whose chronic malady of boredom has been sadly aggravated by Volumnia this evening, glances wearily towards the candlesticks and heaves a noiseless sigh."
3. "The cousin, who has been casting sofa-pillows on his head, in a prostration of boredom yawns, . . . "
4. "But Volumnia the fair, being subject to the prevalent complaint of boredom and finding that disorder attacking her spirits with some virulence, ..."

5. "The fair Volumnia, being one of those sprightly girls who cannot long continue silent without imminent peril of seizure by the dragon Boredom, soon indicates the approach of that monster with a series of undisguisable yawns."

6. "Volumnia, in the course of her bird-like hopping about and pecking at papers, has alighted on a memorandum concerning herself in the event of "anything happening" to her kinsman, which is handsome compensation for an extensive course of reading and holds even the dragon Boredom at bay."

Claim 5: *"The word was used at least 29 years earlier [than Dickens' "Bleak House"] in a novel written by Catherine Grace Frances Gore called Romances of Real Life (Gore 1829, p. 99)"* (Sutton and Griffiths 2018, p. 5).

Test: In contrast to Dickens, the appearance of "boredom" that Sutton and Griffiths (2018, p. 5) claimed to be an earlier instance is not one of tedium. Gore's concoction was either an honest misunderstanding or wordplay, with the intended meaning to be either in the sense of "bearing" (as in "comport", "mien", "standing", "conduct"), "boring" (as in "drill", "penetration", "reach") or "bore" (*sensu* pugilism, "pressing", "forcing"),

> "She beheld her subjects transformed as by the influence of Circe's wand; she saw personages whom she had long esteemed as rational beings, excellent citizens, simple Christians, suddenly converted into ambling, mincing fops, or sententious formalities; poising their words, and polishing their sentences to the very acme of boredom. The men of the law attempted to talk like judges; the men of letters like academicians; both equally affecting to theorize and dazzle in their originality." (Gore 1829, p. 99)

It is apparent that Gore's ambitious characters wish to have wider influence or better professional and social standing and, thus, take care in their proclamations, being selective about vocabulary and grammar. If the sense given is that boring a hole leaves an uninteresting void, then there is a hint of destruction given by the sentence that immediately follows Gore's quote above, "*Ils gâtoient l'esprit qu'ils avoient, en voulant avoir celui qu'ils n'avoient pas*" (they spoiled the spirit they had, wanting to have the one they did not have), but it does not explain the ambitious nature of these individuals and their search for social standing.

Potentially, it is a joke, that the characters' speech was aloof and delivered as if bored by existential matters, but, again, this does not gel with their ambitions. Rather, the sense here is that the boredom of their conversation should elicit quite the opposite effect to tedium and *ennui*: it is not possible for them to be tediously boring and yet "t*heorize and dazzle in their originality*". Gore seems to have been suggesting a meaning for boredom along the lines of "*polishing their sentences to the very acme of impressiveness*".

Result: This claim is incorrect because it conflates meaning; Gore's intended sense of the word does not match one of tedium and ennui.

Example 6: '*Selfish gene*'.

William Donald Hamilton was a much-lauded evolutionary biologist, most known for solving one of the enduring mysteries in Darwinism, viz., why altruism? Fisher (1930) and Haldane (1932) had made some progress on forwarding our understanding of social behaviour, but Hamilton (1964a, 1964b) provided the genetic solution. This built upon his concept of 'inclusive fitness' (Hamilton 1963), where the reproductive success of an individual is not only the inheritance of genes directly by offspring, but the sum of that individual's genes passing into future generations: siblings share roughly half of their genomes, first cousins an eighth, etc., so extending generosity beyond immediate family can have indirect genetic benefits.

As one of the central architects to extend the Modern Synthesis (of Darwinism and Mendelian genetics) towards a gene-centred view of evolution, when Hamilton talked about behaviour, he was talking about an implicit, deterministic gene underlying that

behaviour (e.g., "*genes for altruism*"). His focus at that time asked whether altruism could be explained in terms of the benefits to the recipient compared with the costs to the actor (*donor*) and the genetic relatedness between them (e.g., Hamilton 1963). This reductionist economy was representative of *kin selection*, which developed in opposition to *group selection*, and contradicted its increasingly out-of-vogue "*for the good of the species*" interpretation of behaviours.

Hamilton's Rule (Hamilton 1964a, Hamilton 1964b; but also see Price 1972) is a mathematical formulation that showed altruism can be beneficial when genetic relatedness is sufficient to ameliorate the costs. Vitally, altruistic behaviour is motivated through selfish interest, where Hamilton adopted "selfish" as the antonym for "altruistic". So, Hamilton was using selfishness to describe behaviour in his landmark paper, "*The Genetical Evolution of Social Behaviour*" (Hamilton 1964a, 1964b), where he first referred to 'selfish genes' in the context of selfishness being a competitive strategy,

> "We note again that the selfish genes for seed growth tend to waste their powers a little not only because of the assortation due to relationship but also because of the purely chance occurrence of extreme situations where gene-replicas are largely in competition with one another". (Hamilton 1964b, p. 48)

In contrast, the selfishness in Dawkins' *The Selfish Gene* is a metaphor for all genes, that if they were conscious, they would be single-minded in promoting their survival and subsequent inheritance. For this concept, Darwinian natural selection must act at the scale of the gene, being the 'unit of selection'. It follows that all else is invisible to evolution, which is why Dawkins suggested we are but "*vehicles*" for our genes. Dawkins has done much to popularise the gene-centred view of evolution, but his selfish genes were a metaphor for molecular motivation and explicitly not the behaviour of whole organisms.

Claim 6: "*Over 100 science websites, scholarly books, and peer-reviewed journal papers . . . all assert that the renowned Darwinist, Richard Dawkins, coined the term 'selfish gene' in his 1976 book of the same name. The IDD method demonstrated that William Hamilton used it in a prior published paper (*Hamilton 1971*). Five years later, he cited other publications by Hamilton as a major influence on his thinking, but Dawkins used the term and concept without citing Hamilton's prior-publication as the origin of the term.*" (Sutton and Griffiths 2018, p. 5)

Test: This final example offered in support of the method, perhaps more than any of those preceding it, highlights how locating words and phrases without context is a fatuous exercise. More importantly, it demonstrates how crucial it is to have expertise in the relevant discipline, in order to possess an understanding of context. Having found Hamilton's writings within the biological literature published before *The Selfish Gene* (Dawkins 1976), Sutton and Griffiths (2018) made an accusation of plagiarism over the origins of the term, then quoted epigenetics' theorists Eva Jablonka and Marion Lamb as if they were corroborating that claim,

> "Jablonka and Lamb (2005) provide another example of confident expert dissemination of the claim that Dawkins coined the term:
>
> '*Richard Dawkins took up Hamilton's approach. Extended it and popularised it. He suggested that taking a gene's eye view can help us to understand the evolution of all adaptive traits, not just the paradoxical ones like altruism. He coined the term selfish gene, which recognizes that the "interests" of a gene may not coincide with the interests of the individual carrying it.*'" (Sutton and Griffiths 2018, p. 5)

This is a misrepresentation of Jablonka and Lamb (2005). The sentence preceding this quote explained Hamilton's context,

> "From the point of view of a gene for altruism, it can increase its representation in the next generation if it makes the animals carrying it help their kin to survive and reproduce, because kin are likely to carry copies of it." Jablonka and Lamb (2005, p. 35)

Therefore, "*Dawkins took up Hamilton's approach*" towards the gene-centric view of Darwinian natural selection and not the notion of altruism, with its foundation in selfishness. Dawkins then extended gene-centricity to the context of all genes, but his use of the adjective "selfish" was in a completely new reference to that of Hamilton: Hamilton was specifically referring to genes that cause selfish behaviour in individuals, whereas Dawkins was talking about genes, as if they themselves had a capacity for selfishness in perpetuating themselves through inheritance.

Indeed, Jablonka and Lamb (2005) proceeded to explain exactly that part of Dawkins' breakthrough, in the sentence immediately after where Sutton and Griffiths (2018, p. 5) chose to terminate the quote,

> "Metaphorically speaking, the gene is 'selfish' because the effects it has on the well-being or the reproductive success of the individual carrying it do not matter so long as they enhance the chances that it, the gene, will have more representatives in the next generations." Jablonka and Lamb (2005, p. 35)

To claim that an individual's selfish behaviour and a comparative analogy for gene preservation, are one and the same, is to have thoroughly misunderstood the biological concepts: the only connection being a coincidence of language. Yes, genes for selfish behaviour and Dawkins' selfish gene operate at the same scale, both expressed using the same cellular apparatus, and some of Dawkins' selfish genes will code for Hamilton's selfish behaviour. However, the entities being described as "selfish", behaviours and genes, are entirely different, and occupy markedly separate scales. People are made up of quarks, yet people and quarks are both described as "down" and "strange" without such confusion, and, equally, there is no confusion over selfish genes within the biological sciences. Despite this stark semantic difference, Sutton and Griffiths (2018, p. 5) made the serious accusation "*Dawkins used the term and concept without citing Hamilton's prior-publication*".

Familiarisation with the concepts would have avoided such an egregious error of judgement. However, instead of citing the original sources (Hamilton 1963, 1964a, 1964b), which featured that first mention of the term, in 1964, Sutton and Griffiths (2018) wrongly cited a later work (Hamilton 1971), which even has in its title a mention of the selfish behaviour discussed within, "*Selection of selfish and altruistic behavior in some extreme models*".

Result: Sutton and Griffiths (2018) were wrong in this claim because all genes are "selfish" (*sensu* Dawkins), but not all genes code for selfish behaviours (*sensu* Hamilton). These applications of the term are fundamentally different and, consequently, cause no confusion for those familiar with the related theory.

7. Discussion and Conclusions

Sutton and Griffiths (2018) questioned the role of expertise in knowledge discovery. A method was proposed that was claimed to be new and innovative, despite its adoption of the familiar utilities provided by the *Google* search engine. Mistakes made whilst executing searches in *Google Books* and during the subsequent checking of search results led Sutton and Griffiths (2018) to make fallacious claims about etymology.

8. False Accusations

Sutton and Griffiths (2018) adopted a service provided by a globally used Internet search engine, to locate instances of words and phrases. These instances were taken to prove that subsequent appearances were simply not novel, so were in some way derivative or were offered as evidence of duplicity. Each of those claims has been shown to be false, simply by mistaking the literature record or by contextual irrelevance and coincidence.

Regardless of the uncertainty of word and phrase origins though the history of the English language, if an etymology is based on error, then that etymology is invalid. Summarising the main etymological claims of Sutton and Griffiths (2018), each example was found to be invalid for the following reasons,

1.   'Self-fulfilling prophecy': the evidence for earlier appearances of the phrase was false.

2. 'Humpty Dumpty': the quote given was incomplete and misrepresentative.
3. 'Living fossil': the earlier appearance of the term was unrelated and coincidental.
4. 'Moral panic': the earlier instance was an artefact of translation, unrelated and coincidental.
5. 'Boredom': the earlier instance was unrelated and coincidental.
6. 'Selfish gene': the earlier concept was distinct and causes no confusion within biology.

9. Academic Value

In addition to disqualification of the examples provided in support of the method, also in question is the value of the sole motivation for the paper: the discovery of the first occurrences of words and phrases. Not only is the exercise rendered meaningless from the existence of coincidental word sequences ('*Living fossil*', '*Moral panic*', '*Boredom*'), and unfamiliarity of the relevant disciplines ('*Self-fulfilling prophecy*', '*Humpty Dumpty*', '*Selfish gene*'), but what is the academic purpose? When a specific word first appeared is of little interest, if devoid of historiographical context. A first instance per se communicates no historical, cultural nor philosophical value,[16] especially when limited to English (Sutton and Griffiths 2018, p. 7, did mention that word and phrases often have etymological origins in other languages but then ignored that potential). Etymologies reveal the memetic development and spread of languages, but, as we can see in these examples, the concept and meaning follow their own epistemological pathways and rarely correspond to the parallel passage of symbolism in words and phrases; fundamentally, words have precursors, surrogates and multiple meanings, particular to a period in time.

In English, polysemy, or double meanings, are used all the time for making puns, metaphors, euphemisms, innuendos, double entendres, wordplay, crosswords, etc. (Garcia et al. 2007). It is very much a part of our sense of humour; there are unlimited possibilities when exploring the comedic or dramatic potentials of an honest misunderstanding ("Why did the chicken cross the road? . . . To get to the other side"—trad.; "My dog's got no nose . . . So, how does it smell? . . . Terrible!"—trad.). The humorous leverage is realised though the conflation of meaning, when a word's context becomes confused. Ignoring context strips a word or phrase of its meaning, which makes it all the more preposterous for Sutton and Griffiths (2018) to have claimed that coincidental word clusters possess an intact linear heritage, from their earliest appearance through to modern day use.

To avoid mistakes during the collection and interpretation of data and to avoid misrepresentation of the literature, expertise in relevant fields is critical. It follows that reviewers must be suitably qualified to assess the expertise of their peers. Therefore, while the intention of Sutton and Griffiths (2018) to transfer academic research from its ivory tower may have been well intended, ultimately, for users of their method, amateur enthusiasm is no substitute for expertise.

Appendix A

Step (1): The use of speech marks in Sutton and Griffiths (2018, p. 3) was not innovative, as using "*double speech-quotation marks*" is the same as the box labelled "with the exact phrase" in the *Advanced Search* facility[17], which is equivalent to selecting "Verbatim" under the user "Tools" menu when refining search results. Additionally, the assertion was false:

"If the user lets it, *Google* removes the Boolean element from the user's search after their first try . . . the IDD method overrides *Google's* programmed default position, on its default search engine page which is possibly there to save valuable server processing time in favor of non-academic users clicking revenue generating advertisements and leaving, rather than exploiting its method to the full for scholarly purposes." (Sutton and Griffiths 2018, p. 2)

Speech marks are discarded, only if no results can be found for the submitted search term, in which case the search engine reports "No results found for '[...]'" and provides the alternative "Results for [...]" (without quotes). The only apparent motivation is not to return an empty webpage to the user.

Step (2): To "*click the 'Book' tab on the screen*" was not a step specific to any method. According to the user's habits, the link for (*Google*) "Books" will either be visible (frequent *Google Books* user) or accessed via the "⋮ More" drop-down menu (infrequent user) when refining search results. It is exactly equivalent to directly navigating to the *Google Books* page (https://books.google.co.uk/ accessed on 29 September 2020) before submitting a search.

Steps (3) and (4): The date-specificity claimed in Sutton and Griffiths (2018) was an existing, adjustable date window already provided as a feature of the general *Google* search mechanism, which can be applied to any search with *Google, Google Images, Google News, Google Scholar* and *Google Videos*, with a similar mechanism for just the oldest items provided by *Google Finance* and *Google Personal*. Thus, the "'*Custom Range' option*" is the same as the *Advanced Search* box that is labelled "return content published between". It is also accessed via the "Tools" option when refining search results.

Step (5): The claim that "*Google* detected numerous pre-1948 books containing the precise phrase, many books in the nineteenth century. This proves that Merton never coined the term" was false because there was no evidence produced by the method to make this claim (see Example 1, Claim 1.2).

Step (6): The "'*Custom Range' option*" is a standard feature, as per Steps 3 and 4.

Appendix B

URL for Google Books Search Results Shown in Table 1. (All accessed on 20 July 2020).
https://www.google.com/search?q=%22self-fulfilling+prophecy%22&sxsrf=ALeKk02tXN9huFuXgKgUqM9G2yZN-vmGbg%3A1595291844669&source=lnt&tbs=cdr%3A1%2Ccd_min%3A1500%2Ccd_max%3A1948&tbm=bks

URLs for Numbered Search Results Listed in Table 1. (All accessed on 20 July 2020).

1. https://books.google.co.uk/books?id=m3CUsOIQ70YC&pg=RA20-PA17&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false
2. https://books.google.co.uk/books?id=VvQEAAAAQAAJ&pg=PA130&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false
3. https://books.google.co.uk/books?id=wnE5AAAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false
4. https://books.google.co.uk/books?id=cG0KAAAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false
5. https://books.google.co.uk/books?id=4xkvAAAAIAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false
6. https://books.google.co.uk/books?id=DbRQAQAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false
7. https://books.google.co.uk/books?id=w5tQAQAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

8.   https://books.google.co.uk/books?id=_zYgXGWwc9oC&pg=RA12-PA7&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

9.   https://books.google.co.uk/books?id=uwbRAAAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

10. https://books.google.co.uk/books?id=gEU8AAAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

11. https://books.google.co.uk/books?id=hCg1aya61bEC&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

12. https://books.google.co.uk/books?id=XflUAAAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

13. https://books.google.co.uk/books?id=3JoaAAAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

14. https://books.google.co.uk/books?id=7HhOPdP3jfQC&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

15. https://books.google.co.uk/books?id=KZkKAQAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

16. https://books.google.co.uk/books?id=aR1BAQAAIAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

17. https://books.google.co.uk/books?id=y54fAQAAMAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

18. https://books.google.co.uk/books?id=hnTcx61CCLYC&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

19. https://books.google.co.uk/books?id=M4xEAQAAIAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

20. https://books.google.co.uk/books?id=4uYZAAAAIAAJ&dq=%E2%80%9CSelf-fulfilling+Prophecy%E2%80%9D#v=onepage&q=Self-fulfilling%20Prophecy&f=false

URLs for Corrections (Actual Dates) to the Numbered Search Results Listed in Table 1. (All accessed on 20 July 2020).

1.   https://books.google.co.uk/books?id=m3CUsOIQ70YC&pg=RA20-PA1
2.   correct date
3.   https://www.jstor.org/stable/1041420
4.   https://www.worldcat.org/title/sociology-of-crime-and-delinquency-in-britain/oclc/220587514
5.   https://books.google.co.uk/books?id=4xkvAAAAIAAJ&q=1963
6.   https://www.jstor.org/stable/1165655
7.   https://publications.parliament.uk/pa/cm/cmvo317.htm
8.   https://books.google.co.uk/books?id=_zYgXGWwc9oC&pg=RA12-PP4
9.   https://books.google.co.uk/books?id=uwbRAAAAMAAJ&q=1962
10. https://www.jstor.org/stable/4443808
11. https://books.google.co.uk/books?id=hCg1aya61bEC&focus=searchwithinvolume&q=1980
12. https://www.jstor.org/stable/27828446
13. http://www.ncl.ecu.edu/index.php/NCL/article/view/628/687
14. https://books.google.co.uk/books?id=7HhOPdP3jfQC&q=1972
15. https://books.google.co.uk/books?id=jvorAQAAIAAJ&q=1965
16. https://books.google.co.uk/books?id=vwsAAAAAMBAJ&q=self-fulfilling%20prophecy
17. https://books.google.co.uk/books?id=y54fAQAAMAAJ&focus=searchwithinvolume&q=1974
18. https://archive.org/details/ERIC_ED052372/page/n65/mode/2up?q=self-fulfilling+prophecy
19. correct date

20. https://books.google.co.uk/books?id=4uYZAAAAIAAJ&focus=searchwithinvolume&q=1949

Notes

1   *Sensu* Brown and Murphy (1989): 'inadvertent' or 'unintentional' plagiarism, when copying has no premeditation of intent to cheat.

2   The initial 'Staffordshire Hoard' specimens were found in July 2009 by Terry Herbert, a metal-detecting enthusiast, in a newly ploughed field on Fred Johnson's farmland near Brownhills, which Herbert then revisited for five days, carrying off a total of five kilos of gold and 1.5 kilos of silver (Leahy et al. 2011). In terms of academia, the real value of discovery is practically nothing, if it doesn't then go on to contribute to knowledge. The major part of the excavation site was painstakingly worked by professional archaeologists over the subsequent three and a half years (of which 5 days is 0.4%). The professionals excavated about 3500 pieces, compared to the original 500 retrieved by Herbert (ibid.). In addition, the conservation project, to preserve and find meaning from the artefacts (e.g., Castriota 2016), was instigated at a conference in 2010, and only wrapped up in 2016, having involved "*Many professionals, students and volunteers*" (https://www.staffordshirehoard.org.uk/conservation-journal accessed on 29 September 2020). Meanwhile, Herbert and Johnson fell out over the shared reward (£3.28 million) for the hoard. They both accused the other of greed. Johnson said all Herbert would talk about is how much they were going to get (e.g., Roberts 2011). The draw of a financial reward often compromises what might be usefully gained for archaeology, motivating the plundering and wrecking of sites; careless removal of buried artefacts by "metal detectorists" is a much-despised activity, as it inevitably ruins the opportunity for professional archaeologists to learn about the historical context from the objects *in situ*. To excavate the 'Staffordshire Hoard', modern technology was used alongside classic techniques to scan for ditch emplacements and other structural features (Dean et al. 2010). However, the tools of choice for the field archaeologist are still small, precision implements (Carver and Evans 2005), which are used so as not to disturb the archaeological record, in order to access individual items with maximum accuracy and minimum disturbance. This obviously depends somewhat on the skills and knowledge of the person operating those scrapers and toothbrushes.

3   *Searching Google Books* https://support.google.com/books/partner/faq/3396243 (accessed on 29 September 2020).

4   There are 3.5 billion searches per day. *Google Search Statistics* (https://www.internetlivestats.com/google-search-statistics/ accessed on 29 September 2020). By 2022, this has risen to 7.5 billion.

5   Modifying the user experience and utilising *Google* facilities in any way other than intended is in contravention of *Google*'s rules of use, "*All of our brand features are protected by applicable trademark, copyright and other intellectual property laws. If you would like to use any of our brand features on your website, in an ad, in an article or book, or reproduce them anywhere else, or in any other medium, you'll need to receive permission from Google first. And please note that the user experience with all our products should never be altered*" (https://www.google.com/permissions/ accessed on 29 September 2020).

6   Hoffman was a publisher. The article cited in Sutton and Griffiths (2018) is an editorial review of "*Grundzügo der Societätsphilosophie. Von Franz Xaver Baader. Herausgegeben von Dr. Franz Hoffmann. Würzburg, 1837*" (Basic Principle of the Social Philosophy. By Franz Xaver Baader. Published by Dr. Franz Hoffmann. Würzburg, 1837). Identifying individual editors is problematic for the period (Houghton 1972), so a better citation is Fraser's Magazine (1841).

7   Coin means "to invent a new word or expression, or to use one in a particular way for the first time" (*Cambridge Dictionary* https://dictionary.cambridge.org/dictionary/english/coin/ accessed on 29 September 2020).

8   For the sake of accuracy, the term had already formed the title of his 1948 paper.

9   To ensure that this information was available to the first author, when they published the 2013 blog post on which Example 1 in Sutton and Griffiths (2018) was based, it is possible to inspect the history of edits made to each Wikipedia page. On 9 January 2013, the page said, " . . . *Merton who is credited with coining the expression "self-fulfilling prophecy" and formalizing its structure and consequences . . . stems from the Thomas theorem . . . Merton took the concept a step further and applied it to recent social phenomena. In his book Social Theory and Social Structure . . .* " (https://en.wikipedia.org/w/index.php?title=Self-fulfilling_prophecy&oldid=532098575 accessed on 29 September 2020).

10   For the sake of accuracy, Sutton and Griffiths (2018) falsely asserted that these sources, "*simply claim that the sociologist Merton (1948) coined the basic term*", whereas each of the sources actually cited Merton (1949).

11   The two additional instances (see *Misconceptions about Mechanism*) of "self-fulfilling prophecy" not detected using the method of Sutton and Griffiths (2018), employ the phrase in the same way, as a direct causality. In this case, there is suggestion of a psychosomatic influence, "*Thus. suppose a case where there was a strong probability that death would ensue, were we to announce that probability in the patient's hearing, the effect produced on his mind may convert probability into reality; the teacher's words may become a self-fulfilling prophecy, and he become the agent of the patient's death*". Watson (1842, p. 84). The second instance draws parallels between societal and personal collapse, warning against a growing weakness in the young men of Virginia, brought about by promiscuity and drugs (opium and laudanum), and lack of purpose, "*The miseries and misfortunes of nations as of individuals are oftener the results of their own follies and crimes, than of the cruelties and oppressions of others. But we dislike to acknowledge our own errors, and are too prone to the hasty sad generalization, and mournful self-fulfilling prophecy, that depreciation and final degradation are the inevitable laws of social and national existence as death is of man's mortal career*". Barbour (1854a, p. 21; 1854b, p. 522).

[12]　"*A type of fallacy of reasoning wherein one misrepresents the argument of an opponent and thereby easily defeats the weakened version and claims victory over the original, stronger argument*" (Aiken and Casey 2011).

[13]　Regarding the cannon called "Humpty Dumpty", Sutton and Griffiths (2018) claimed to have challenged, "*the apocryphal story of the siege of Colchester*" but failed to do so because the *Punchinello* claim is false; hence, the traditional origins for the nursery rhyme stand. Sutton and Griffiths (2018) claimed to have, "*found no evidence whatsoever in the historic literature record of a Royalist force cannon in the English civil war named Humpty Dumpty*", but this is another 'straw man' argument. *The established narrative regarding the damaging of St. Mary's Church's tower is not that a cannon was called "Humpty Dumpty"* (although that has since been conflated), but that a cannon's fall from the roof inspired the poem. The account of that event on 15 June 1648, can be traced to a report printed in the same year (Anon 1648), and later expanded (Cromwell 1825). The diary entry by Samuel Pepys is also misrepresented: by claiming "*IDD originally revealed that there was one used by the Parliamentary forces named Punchinello (Pepys 1665, p. 1065)*", the paper inferred a continuity in narrative. However, Pepys' note did not say the gun was being used in active combat, only that a gun was sited near Spitalfields (the Old Market has a Punchinello Gate named for its 2008 refurbishment) and that Pepys "by Captain Deane's invitation, did go to see his new gun tryed". Importantly, the diary entry was made for 20 April 1669, at least seventeen years after the end of the Civil War (the 1668–1669 year change is given on p. 990 of the same edition).

[14]　Sutton and Griffiths (2018, p. 4) cited the journal publication date of 1712, but Lhuyd had died three years earlier. The letter was dated 15 December 1699 (Abse 2000, pp. 92–95).

[15]　The concept of being bored (*sensu* "ennui", literally "annoyance", from "inodiare", to keep in hatred) conjures a state of restlessness and irritable melancholy (that reached us alternatively via acedia and taedium vitae and perhaps shares some etymology with the Spanish "*aburrir*"—bore, weary, tire—and its precursor in Latin, "*abhorrere*"—averse, cf "abhor"). Hence, boredom, as a state of tedium and as a state that can be induced by others who "bore", emerged out of the ethereality of Romanticism (e.g., Svendsen 2005, p. 28); Byron used "bores" and "bored" in 1823 (Paliwoda 2010; "bore" in this sense, is absent from Johnson's (1827) Dictionary (Johnson and Walker 1827, p. 77), and only appears in terms of making holes, but a definition is given as "*The pret.(erit tense) of bear*"), while Spacks (1995, p. 13) proposed a first appearance of someone being "bored" in a 1768 letter, but dates "boredom" to 1864. Haladyn and Gardiner (2016, p. 5) stated "boredom" dates from the 1760s, however gave no source, but recalled it was mentioned within their reading (pers. comm. Oct-2019). Nonetheless, the new, aesthete Victorian outlook found a need to contrast "the interesting" with the abhorrence of encountering "the uninteresting", an "*experience without qualities*" (Goodstein 2005). Therefore, parallel to 'boredom', the notion of 'interesting' arose, with a first appearance in print noted for 1775 (although a quick search to check revealed an earlier instance in Holwell (1765)).

[16]　Context is everything in determining semantics: "meaning in use" as the saying goes. Alternatively, "I seen a peanut stand, heard a rubber band . . . " (Wallace and Washington 1941).

[17]　https://books.google.com/advanced_book_search (accessed on 29 September 2020).

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