

Opportunity Cost (OC) in Ecology of Decisions with Bricolage of Rhetorical
Questions: What, When, Who, and Why?

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ABSTRACT

Every living human makes decisions, and decisions involve choices to select and reject. The selected choice is akin to the ‘road taken’, and the rejected choice is akin to ‘the road not taken’. Today, we know this phenomenon as opportunity cost (OC), but we do not know the context of the conceptual usage. What are the roads, when are they taken, who has taken them, and why (where) are these roads taken? This essay elaborates on the notion of OC, contextualises it in the primers of decisions through rhetorical questions: content (what), timing (when), actors (who) and sectors (why). Based on a variety of the literature (academic and non-academic), the essay presents answers to these primers of OC in four charts. The content (Fig 1) shows the narratives of the gold market, economic news, corporate earnings, and financial institutions. Education and personnel subjects using OC take the middle position. The timing (Fig 2) patterns of OC show a linear increase in narratives from 1989 to 2020. The actors (Fig 3) using OC vary in diversity and scale. The sectoral context overlaps, showing the scale of industries, sectors and agencies (Figure 4). Organisations in health services, natural environment and social development are absent from the narratives in the last 30 years. The reference to FDA (Food and Drug Administration) appears parallel to petroleum companies.

Keywords: Opportunity cost (OC); road not taken; rhetorical questions; primers of decision; contextual bricolage

INTRODUCTION

Every decision we make forces us to choose between alternatives, leaving us wondering whether it was the best choice than the alternative that we have omitted. Analytical views in methodological contexts refer to these doubts as ‘errors of commission or of omission’. Ideally, the benefits of the selected option should be greater than the benefits of the foregone alternative. This judgement primes the decision of humanity science the human began to think about decisions. Today, the attention to primers of decision has become a ubiquitous issue, and it has gained the conceptual legitimacy of opportunity cost (OC) in the economic discipline. From there, it has diffused to other disciplines as a common vocabulary of a decision primer. Sometimes OC appears explicitly, and sometimes it appears in contextualised narratives.

Implicitly, Robert Frost (1874-1963) has put it as: “The Road Not Taken” in 1915.

*Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth*

The road taken versus the road not-taken has a lot to do with the notion of OC, albeit in a latent manner. While the direct and indirect reference to OC in the decision process has diffused across disciplinary glossaries, the taken-for-granted status of OC does not tell us very much about its diffusion across contexts. The assumption tells us that we can judge the reality of both alternatives, the committed one and the omitted one, without telling us much about the contents (what), timing (when), actors (who), and environment (why). These rhetorical questions and their possible combinations alter the values of the primer for the decision, depending on what it means to the decision-maker. Two identical people received Inline skaters of the same brand as gives. One of them knows how to do inline skate; the other does not know it. If they were to sell those skates the same day in an identical market, their meanings would define the OC rather than the market. The forgone opportunities (omission) remain unseen, and decision ecology can easily overshadow its true properties.

This essay explored the ecology of decision through rhetorical questions and their contextual bricolage: what, when, who, and why. The response to these rhetorical questions

produces rhetorical answers: timing, contents, actors, and system. Together, these contextual questions and answers form pairs of bricolages. The essay focuses on the descriptive analysis of OC used in the literature of all sorts in the last 30 years to understand its diffusion. The analysis uses all the documents produced in digital repositories from 1991 to 2020 globally. This ecology of decisions assesses about 95% of the OC usage in the 30 years in the broad literature (academic, industrial, public discourse, policy documents, opinion essays, press releases, and media editorials [1]). Thus, the ecology of decisions rests on the contextual questions as follows.

- Contents or subjects (what)
- Timing (when)
- Actors (who)
- Environment, structure, sector, or system (why)

OPPORTUNITY COST (OC)

The concept of OC has existed since humans began to align communication with thoughts, some 45000 years ago. In modern usage, the OC entered the scenes in narratives of economics, explicitly or implicitly. The utilitarian thinkers popularised it. John Stuart Mill (1806-1873), a philosopher and economist, contributed to OC based on the comparable utilities between choices. As a prominent exponent of utilitarianism, Mill inspired the ensuing economists, including those in Austrian School. The idea of OC resonates with economic utility today, which says that the utility of a decision needs to be more than its opportunity cost—the utility of the next best alternative is lower than the selected choice. In other words, the net decision primer is the benefits of the chosen alternative divided by the value of the foregone alternative [2]. Formally, Britannica defines the opportunity cost as “the opportunities forgone in the choice of one expenditure over others. For a consumer with a fixed income, the opportunity cost of buying a new dishwasher might be the value of a vacation trip never taken or several suits of clothes unbought. The concept of opportunity cost allows economists to examine the relative monetary values of various goods and services”¹.

This essay avoids indulging in the debates and conflicts of ideologies, theories and perspectives. Moreover, to avoid any legal, political or ethical conflicts with other scholars and

¹ <https://www.britannica.com/topic/opportunity-cost>

analysts. Instead, this essay makes use of the author’s research works in rhetorical questions. Table 1 shows the distribution of the theories in this sample. Dividing these theories into four groups, I present their trends on the timeline in Figures 1 to 4 to answer basic questions.

Table 1: Rhetorical questions/primers of decisions

OC	Path taken	Project
How	Real option as strategic technology uncertainty reduction mechanism	[3]
Who	Effects of Managerial Strategic Resources on the Outsider CEO Succession	[4]
How	Disparate association between alliance social capital and firm’s performance	[5]
Why	National Institutional Differences and Cross-Border University-Industry Knowledge Transfer	[6]
What	Complexities of scope and scale in patent claims	[7]
What	Positive effects of opinion-count on job satisfaction of team members	[8]
Why	Institutional barriers in the diffusion of a high technology	[9]
Where	Cultural distance and its implication for the duration of the international alliance	[10]
Where	Defence Investment and the Transformation of National Science and Technology	[11]
Where	Varieties of capitalism, innovation performance and the transformation of science	[12]
When	Sino-Russian negotiation styles: A cross-cultural analysis of situated patterns.	[13]
Who	Founder’s Apprehension in Small Family Business Succession	[14]
Where	Institutional Causes and Cures of National Morbidities	[15]
Who	Security Analyst Firm Reputation and Investors’ Response to Forecasted Stocks	[16]
Who	Entrepreneurial State vs Liberal Market: Chinese Comparative Advantage	[17]
When	The negative spillover effect in sports sponsorship	[18]
When	Contextual bricolage and the Founder’s Apprehension in the inter-generational Succession	[19]
When	Inter-temporal and inter-spatial institutional change influencing the duration decision	[20]
Where	The Belt and Road Initiative (BRI) Project Legitimation	[21]
Why	Culturally Imprinted Anxiety and the Itinerary of Clinical Trial Projects for its Management.	[22]
How	The Transformation of National Patents for High-Technology Exports	[23]
When	The impact of population pressure on global fertiliser use intensity, 1970–2011	[24]
How	Social Media Versus Personal Experience in the Consumer’s Apprehension on Imported Food	[25]
Who	Former Employer’s Prestige, the TMT’s Post-Migration Rewards in the Biopharma Industry.	[26]
Where	The Disclosure Decision of Foreign Clinical Trials in China	[27]
Who	Chinese Universities Moderating FDI and DDI for the City’s Innovativeness in the ICT Sector	[28]

Ecology of questions: *contents, actors, location, timing, method, system/structure*

METHODS

The essay aimed to explore the diffusion of OC across rhetorical contexts, using corresponding rhetorical questions to assess the contextualised primers of decisions. The diffusion of a concept or theory depends on the attention it gains. Some concepts gain glory because of high attention by prestigious entities and their followers. Some concepts receive disdain because of low attention, and inattention leads them to their mortality. The diffusion and demise of concepts in their contexts fit very well with the following verses.

*Failed them their commitments,
and failed them their struggle sanguine,
In search of some conceptual glory,
They have earned their disdain.*

The OC gained attention and glory across contexts, and the intensity (frequency) of attention represents conceptual legitimacy. Unfortunately, the alternatives (demise and disdain) cannot be discerned because of the ‘unknown-unknown’. ‘The Road Not Taken’ is omitted from this analysis in the literature search. The literature search includes multiple sources via the internet through specialised techniques and dedicated search protocols. The analysis rests on the content analysis for data gathering, organising and analysing [1, 29] from various types of literature.

- (i) Academic literature
- (ii) Industrial literature
- (iii) Public discourse
- (iv) Policy documents
- (v) Opinion essays, press releases or media editorials.

Analytically, the OC overlaps across contexts. For instance, a concept appears in response to what questions and actor or why questions. After analysing, cleaning, and trimming, I transformed from tables into charts presents in four sections associated with rhetorical questions and primers of decisions.

RESULTS

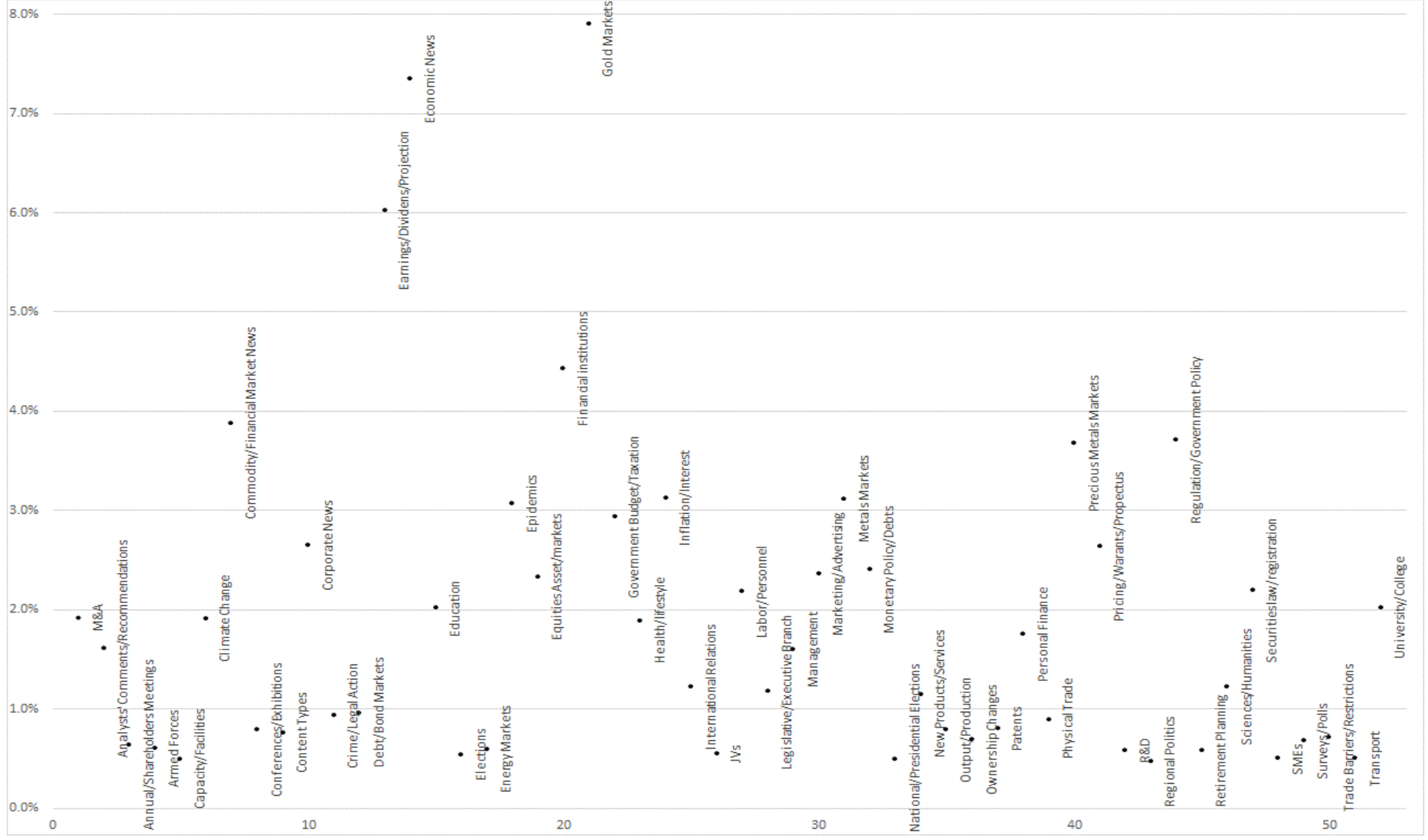
The result shows simple frequency to highlight the attention of the OC and its context associated with four types of questions. First, the OC appears in the frequency chart of contents (what). Second, the timeline of OC shows temporal attention in the literature. Third, the OC

appears in entities such as organisations, institutions and government agencies. Fourth, the OC appears with the environment (sectors and industries).

(i) *OC contents (What)*

Figure 1 shows the contents (subjects, ideas) and their frequencies. The X-axis shows the alphabetically ordered subjects, and the Y-axis shows frequencies. As expected, financial, oil/gas, real-estate and other conventional economic ideas represent OC more than others. Among the non-economic subjects, climate change, education, epidemics, and crime have risen to prominence. Climate change takes about 1.9% of the sample, education (including universities) takes 4% of the sample, epidemics take 3.1% of the sample, and crime takes about 0.9%. Together, these ideas make up 10% of the sample, and 90% go to the conventional economic field. The next question is about the temporal distribution of theories [30], and this time, the focus is on the diffusion of OC commissioned in all types of literature.

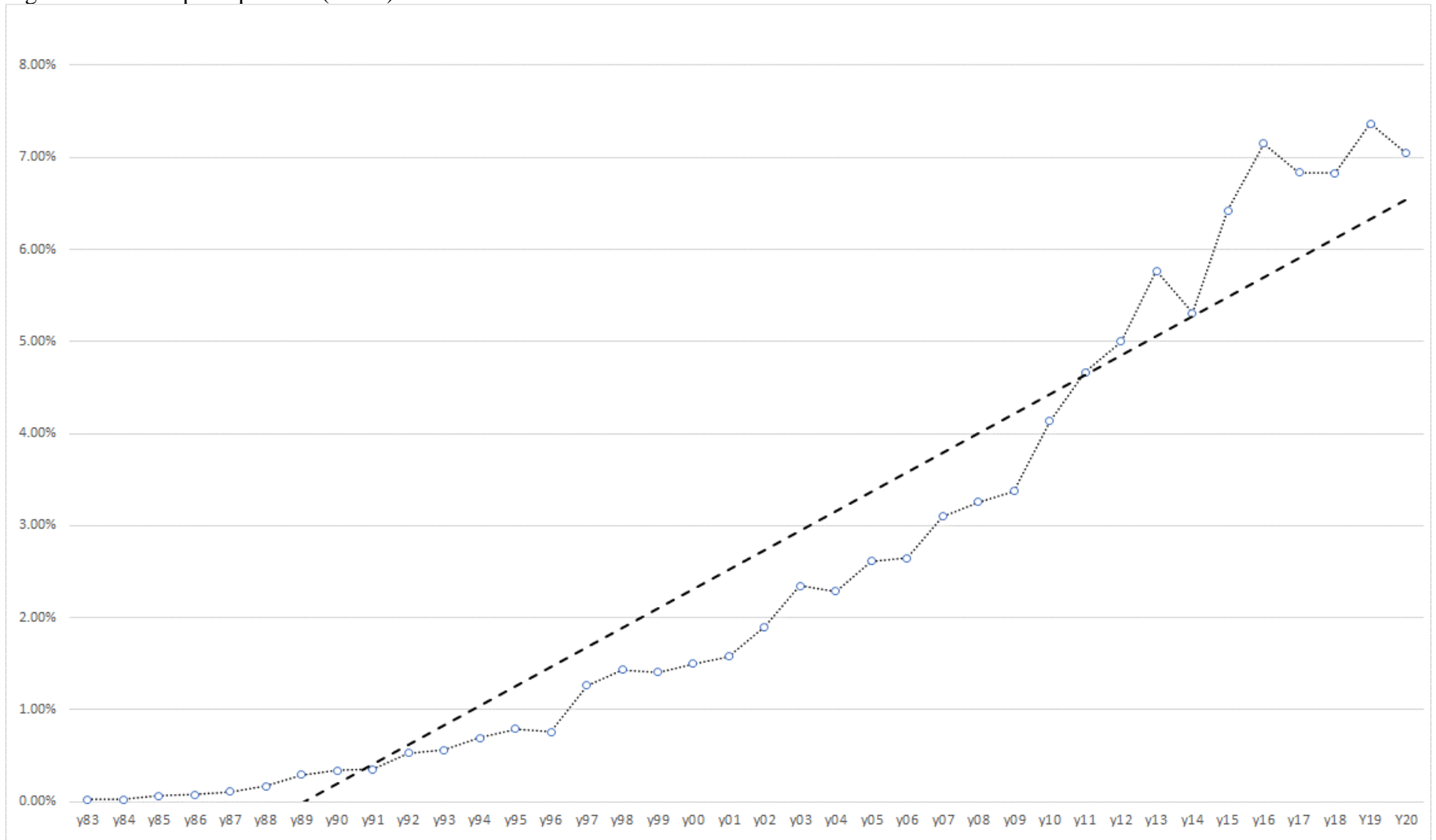
Figure 1: OC Contents (What)



(ii) *OC timeline (When)*

Figure 2 shows the timeline of OC, from early 1980s to 2020. The focus of the analysis is on the 30 years (1991-2020). The trendline shows a consistent rise of the OC the media and academic literature. Unlike the decline of transaction cost and other globalisation processes [30], the OC continues to attract attention across contexts. Appendix A complements the temporal attention to OC in the literature. Based on google analytics, the timeline in Appendix A shows four major changes. From 1961 to 1984, it shows a rise. From 1984 to 2006, it shows stabilised attention. Between 2006 and 2015, it shows fluctuation followed by a steep decline from 2015 to 2019. Compared to all types of literature in Figure 2, Appendix A relies on books published.

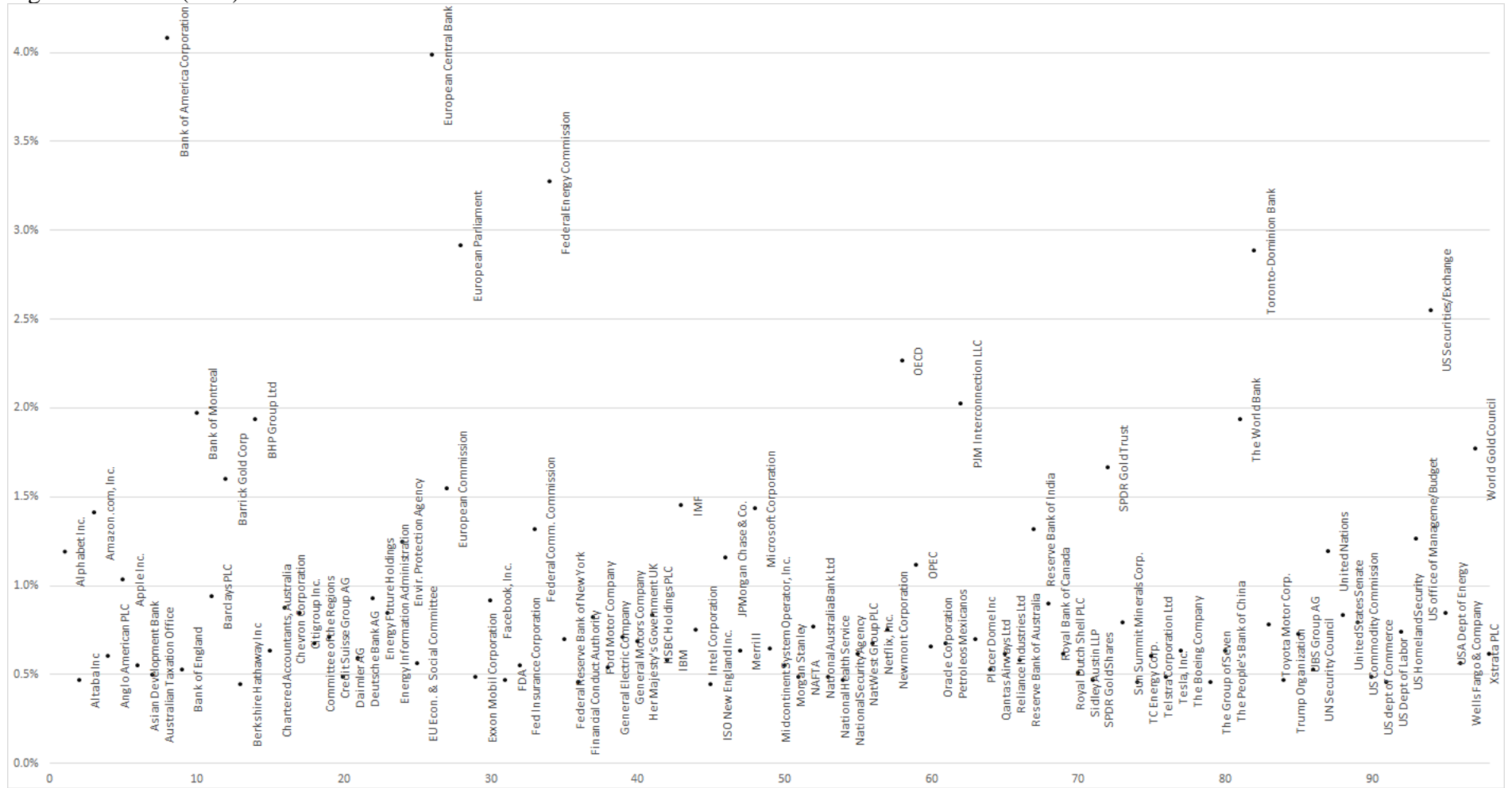
Figure 2: OC Temporal patterns (When)



(iii) *OC actors (Who)*

Figure 3 shows the organisational actors associated with OC diffusion in the literature. We notice three types of actors based on their levels. The first type represents enterprises such as Facebook Inc. The second type represents institutions such as regulatory institutions. This level of actors includes federal agencies and governments. For the analytical purpose, we link them to national actors. For instance, FDA (Food and Drug Administration) in the USA is a federal agency that represents the nation. Likewise, Armed forces represent the nation. The third level and type of actors refer to integrated markets of several countries. European Union is one example of such integrated markets. While Banks make sense using OC, the usage of OC with the European Parliament is a surprise. After knowing about the actors, we move to the final question—the sector.

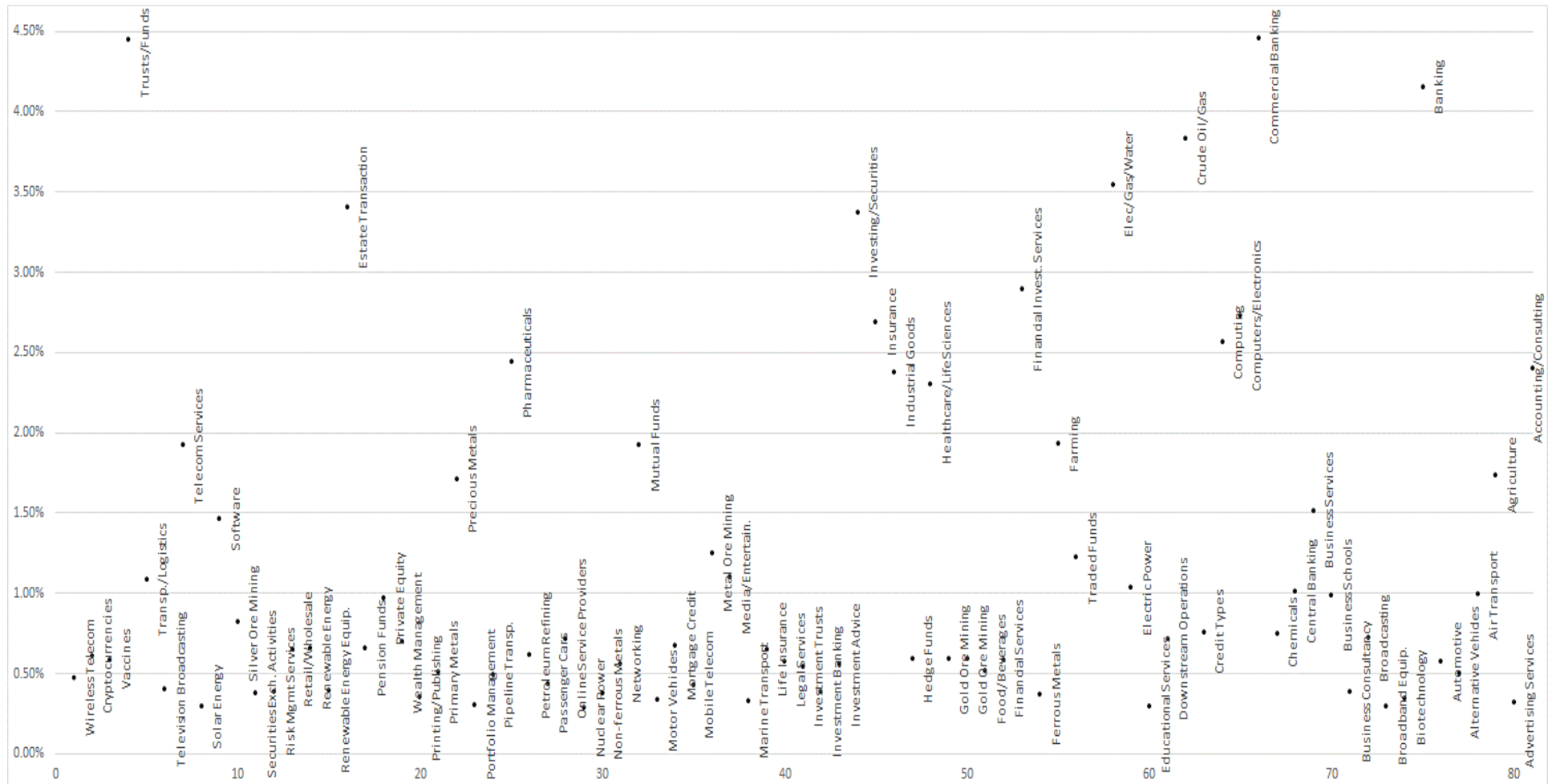
Figure 3: Actors (who) in OC



(iv) *OC sectors (Why)*

Figure 4 shows the diffusion of OC across sectors to capture broader environment (systems, structures). The ecology of sectors in the decision priming shows alphabetically ordered entities on the X-axis and their frequencies on the Y-axis. A majority of the sectors (environmental contexts) fall in the lower quartile in the chart, suggesting diversity of sectors using OC in narratives.

Figure 4: OC sectoral ecology (why)



DISCUSSION

Several concepts of the same phenomenon motivated the analysis of the diffusion of OC in a broad literature coverage. Among these concepts, uncertainty is the umbrella concept of fear, apprehension, and anxiety in decision making. Using attention to OC in the media and a variety of pieces of literatures, the essay analysed primers of decisions (contextual questions). The frequencies of OC in association with those contextual questions indicates the diffusion of the concept across subjects, periods, organisations and conceptual ecology. The frequencies presented in the result section against these four questions are self-explanatory. The conclusion of the story is listed as follows.

- The attention to a concept presents its legitimacy, and legitimacy drives actions. High legitimacy means greater diffusion of the OC in some dimension more than in others.
- Glory of the concept is easy to discern; the disdain of the concept is impossible. For instance, we can know about something explicit—a book written by a person. We do not know the rest of the knowledge of that person, organisation or nation.
- Conceptual legitimacy does not mean logical superiority. The power, control, and discretion of the user marks its salience.
- Sometimes the salience shifts to the top 5% of users; other times the salience sifts to the bottom 90%.

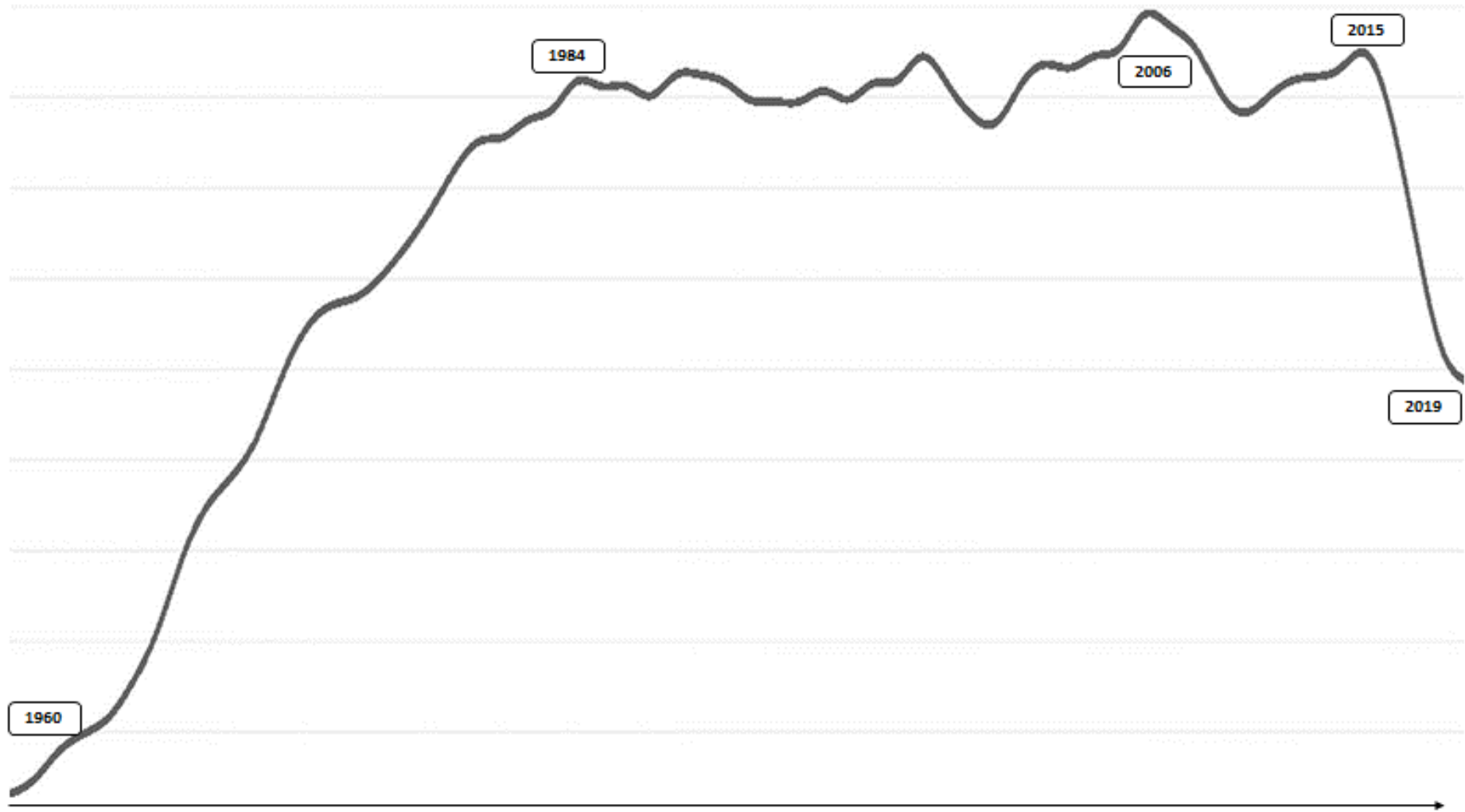
Nevertheless, like the poem ‘The Road Not Taken’ indicates, decision makers cannot see much farther than the curve of the road. The analysis presented in this essay suffers from the same problem. It has used commissioned OC to capture the omission of OC in the literature. We make decisions using OC by negotiation with ourselves, with other people, with enterprises, and with the state. The same goes for inter-organisational, inter-country and inter-regions. Unfortunately, the path taken is the obvious one, and the path omitted is the uncertain one. Uncertainty comes from both, the task and the conditions surrounding that task. Both prime our decisions at all levels.

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Appendix: Opportunity cost in Google (1960-2019)



Note: Google analytics