

Research of Reports on the Refugee Issue from the Perspective of Agenda Setting

— Quantitative Research Based on Search Engine Index

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Abstract: The international refugee issue remains serious in 2020. Based on the trends and indexes of Google and Baidu search engines, this paper explores the media agenda setting for the refugee issue and its impact, with the European refugee crisis from 2015 to 2020 as the research subject. The analysis of linear correlation coefficient shows the declining ability of traditional media in agenda setting and the diversification of subjects of agenda setting for the refugee problem; the analysis of media agenda trends suggests that the media and public have paid less attention to the refugee issue since 2015. The refugee issue may be “dormant or disappearing from the agenda”. Therefore, international organizations and non-governmental organizations should realize their important role in the refugee issue, and the ability of diversified subjects to set the agenda for the refugee issue should be given full play, so that the refugee issue can return to the "ritualization" stage.

1. Introduction

Middle East and North Africa have suffered from wars since 2015, and more and more refugees in West Asia and Africa have fled to Europe through the Mediterranean and southeast European routes. As the largest flow of refugees swept Europe since World War II, the refugee issue has been gradually brought into the attention of governments and mainstream societies around the globe. Today, five years later, influenced by the global COVID-19 pandemic, the refugee issue remains extremely serious. Refugees and displaced people are hard hit by impacts of COVID-19 pandemic. In fact, according to the Refugee Brief–11 March 2020 “Syrian crisis moves into the tenth year, more than 5.5 million Syrians are now living as refugees in the region, displaced Iraqis and returnees at growing risk, warn aid agencies [1].”, and COVID-19 is “potentially catastrophic” for already food insecure nations.

However, the international media agenda setting for the refugee issue has lacked behind, leading to the absence of the discourse power and attention of refugee issue in the media; media agenda setting is featured by “mutual exclusion”, which may bring the refugee issue into the stage of dormancy or even disappearance. Based on the trends and indexes of Google and Baidu, this paper explores the media agenda setting of reports on the refugee issue and its impact, thereby providing a realistic basis for understanding the relationship between media reports and refugee issue, and offering a feasible path for the re-ritualization of refugee issue in the media.

2. Theoretical basis of research

2.1. Agenda-setting theory

Agenda-setting theory describes the "ability (of the news media) to influence the importance placed on the topics of the public agenda" [2]. This theoretical hypothesis was first proposed in the paper Setting Function of Mass Media published by McCombs and Shaw in 1972. The communication effects are divided into three levels: cognition, attitude, and action. The agenda-

setting theory focuses on the initial stage where the effect forms, that is, the effect on the cognitive level. The early agenda-setting theory believes that mass media has a function of setting “agenda”. Through the number of reports and the tendency of the discourse system, the media can place difference degrees of importance on topics, thereby influencing the public attention to the topics through filter and shape reality [3]. In short, the agenda-setting function of mass media can play a role in concentrating attention. In addition, the media may be unsuccessful most of the time in telling people what to think; but it is surprisingly successful in telling readers what to think [4]. Rogers and Dilling divided the agenda setting process into three parts: media agenda, public agenda and policy agenda, laying emphasis on how the media agenda produces the most ideal effect for the audience, as shown in Figure 1 below [5].

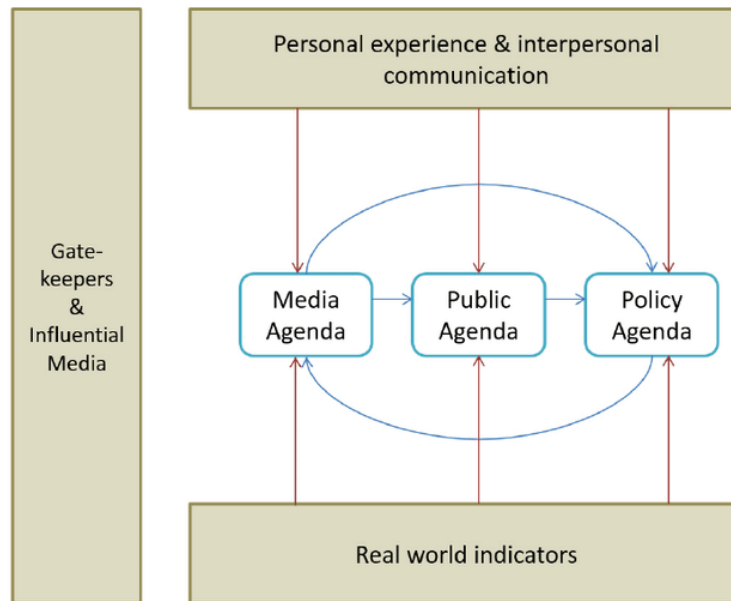


Figure 1. The Agenda Setting

However, with the development of Internet technologies and the advent of new media, diversified interactive communication modes such as the "point-to-point", "point-to-multipoint", and "multipoint-to-multipoint" modes have become the mainstream and trends, and have largely broken the original rules of information flow, resulting in huge changes in the media environment [6]. Network allows people to have access to various sources of information, so that the access to news and information no longer depends on a single mass media. The right to distribute information is given to every individual who has access to the Internet, which means that the public dependence on traditional mass media is greatly reduced, and traditional mass media can no longer monopolize public attention. Besides, the network environment is also a "de-dominance" environment, which means that there is no unified or fixed leader in the network environment [7]. Although the actors, direction and process of agenda setting are different from those in the past, many researchers have found through empirical research that the influence of media on public agenda setting in the network environment cannot be underestimated [8]. In short, the agenda-setting theory in the context of new media emphasizes that the emergence of new media will change the absolute dominant position of traditional media in agenda setting, and although the audience have access to diversified channels for obtaining information, the influence of traditional media on the audience still exists.

2.2. Search engine index

2.2.1. Google trends

Google Trends, which is a service based on search log analysis, can analyze the search results of keywords in Google, provide users with the search frequency of a certain keyword in Google and relevant statistical data in each period, and can also display the difference in the attention to a

certain keyword between regions on the map.

The Search Volume Index (SVI) in Google Trends reflects the proportional relationship between the actual number of searches T_i for a certain keyword and the average search volume in a certain area and a certain period of time [9], as shown in formula (1):

$$SVI_{timeperiod}^{T_i} = V_{now}^{T_i} / EV_{timeperiod}^{zone_j} \quad (1)$$

where $V_{now}^{T_i}$ denotes the current volume of search for keyword T_i in the search engine, $EV_{timeperiod}^{zone_j}$ indicates the average search volume of all keywords in a certain area and a certain period of time when the search volume is examined, and the larger the value, the higher the degree of attention to the keyword T_i . The search volume index (SVI) uses the total traffic in the corresponding area to standardize the data, and it shows the relative increase and decrease ratio of the search volume of a certain keyword compared to the average search volume in the current period. At the same time, when the user changes the statistical time span of the search data, the change of the SVI sequence will be shown [10].

2.2.2. Baidu index

Baidu Index is a data sharing platform based on the behavior data of active netizens in Baidu. Its main content and research direction are similar to those of Google Trends, but it has different functional modules and statistical algorithms.

Baidu Search Index refers to the attention of Internet users to the search of keywords and the continuous changes in the attention. Based on the search volume of Internet users in Baidu, with keywords as statistical objects, the weighting of the search frequency of each keyword in Baidu web search is analyzed and calculated. The media index refers to the amount of news related to the keywords reported by major Internet media and included in the Baidu News Channel, with the keywords contained in the news headlines as the statistical standard. The data source and calculation method have no direct relationship with the search index [11].

3. Study on the Media Agenda Setting for Refugee Issue Based on the Search Engine Index

3.1.1. Diversified Subjects of Agenda Setting for Refugee Issue: Based on Linear Correlation Coefficient Analysis

The linear correlation coefficient can be used to measure the linear relationship between two variables. The linear correlation coefficient $r(X, Y)$ between two random variables X and Y is:

$$r(X, Y) = \frac{Cov(X, Y)}{\sqrt{Var(X)}\sqrt{Var(Y)}} \quad (2)$$

Where $Cov(X, Y)$ is the covariance of variables X and Y ; $Var(X)$ is the variance of variable X , and $Var(Y)$ is the variance of variable Y .

With "Refugee" as the keyword, based on the daily search volume and the amount of keyword-related news included in Baidu News Channel in the five years from May 1, 2015 to May 1, 2020 provided by Baidu Index [12], Figure 2 can be obtained. After the correlation coefficient is calculated using formula (2), it can be obtained that $R^2=0.4587$, $r \approx 0.677$, and its scatter diagram is shown in Figure 3. Obviously, from the statistical significance, the correlation coefficient $r \approx 0.677$ between Search Index and Media Index related to "refugee" is between 0.6-0.8, indicating strong correlation, but not very strong correlation.

This phenomenon is ascribed to the declining agenda-setting ability of traditional media and the diversification of the subjects of agenda setting for refugee issue. As Mansbach and Vasques pointed out, due to the anarchic state of international politics, there is a lack of clear and authoritative decision-maker, thus there will be no official or formal agenda like domestic politics [13]. As an international agenda setting, the refugee issue is obviously influenced by this aspect; in

addition, as mentioned above, due to the progress in Internet technologies and the declining agenda-setting ability of traditional media, the channels for the audience to seek for information related to refugees become diversified, which further weakens the ability of actors centered on nations and traditional mainstream media to set agenda on the refugee issue. The actors of agenda setting for refugee issue can be classified into the following categories.

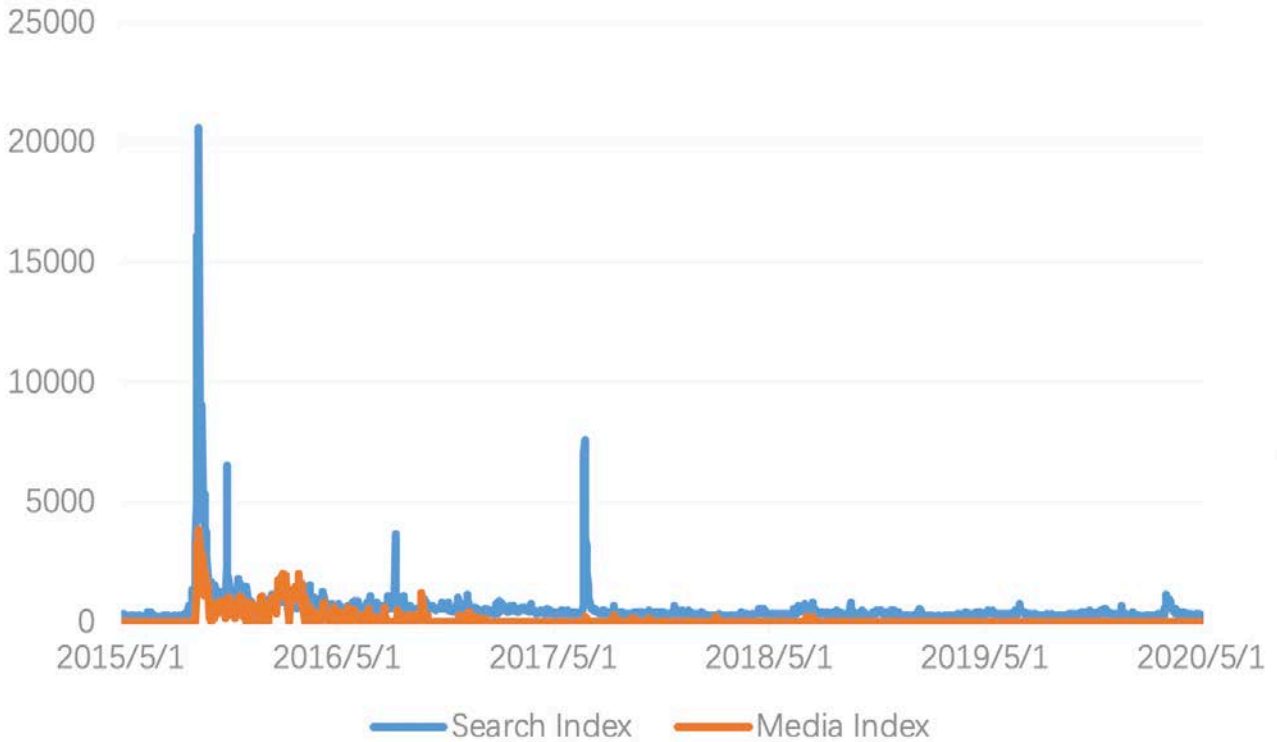


Figure 2. Search Index and Media Index Comparison

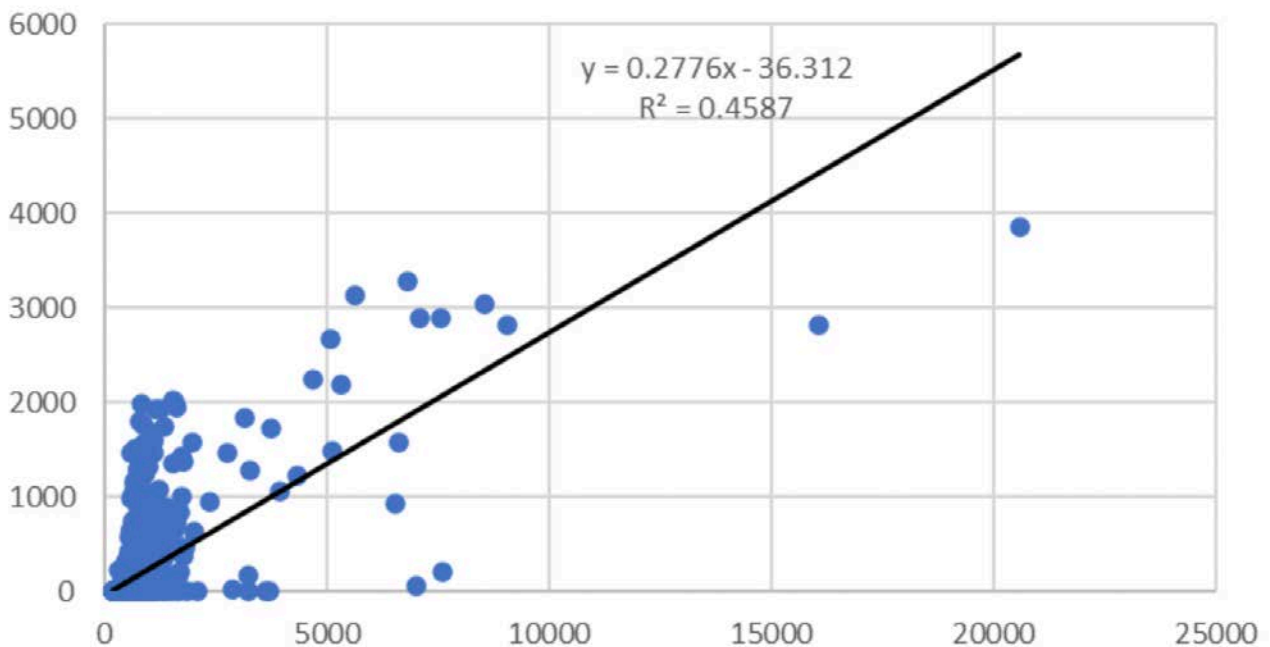


Figure 3. Correlation Coefficient about Search Index and Media Index

The first is the state actor. The state here refers to the category of social sciences. Keohane and Nye are pioneers in the research of international agenda setting, who proposed in the book *Power and Interdependence* that in an international political context featured by “compound interdependence”, nations and actors “express their opinions in various forums” [14]. On the

refugee issue, the state actor can be an important source of information for audience in addition to traditional media. For example, many refugees will directly search for needed content in the website of Refugee Admissions of the US Department of State. The development of network allows audience to directly contact the state actor regarding the refugee issue, and the information is no longer screened by the gatekeepers of traditional media, thereby influencing the agenda setting of traditional media.

The second are non-state actors, including media, international organizations, non-governmental organizations, expert groups, advocacy groups, and opinion leaders or individuals in the broad sense. The correlation coefficient r between the Search Index and Media Index related to refugees has not reached the strong correlation between 0.8 and 1.0 in the early agenda setting, which is largely ascribed to multiple non-state actors. For example, people can obtain the needed information through international organizations and non-governmental organizations such as UNHCR, Refugee Union and Human Rights Watch instead of the traditional media; meanwhile, refugee-related expert groups and advocacy groups are also calling for attention to refugees outside the media agenda. These are the reasons why the Media Index tends to be 0 at some time, but the Search Index remains at around 400.

In brief, in terms of the refugee issue, traditional media still possess power in agenda setting, but such ability is declining; it is other multiple subjects under the development of new media that play an increasingly important role in the agenda setting for the refugee issue, such as international organizations and non-governmental organizations.

3.1.2. Trends in international dormancy of the refugee issue: analysis based on media agenda trends

Similarly, based on the data provided by Google Trends [15] and Baidu Index, Table 1 can be obtained. Calculations show that the trend line equations in the three charts are $y=-0.436x+19328$, $y=-0.436x+19328$ and $y=-0.0082x+372.84$ respectively. Obviously, the unknown coefficients in these three equations are all negative numbers, indicating that the curves show an overall downward trend. At the same time, the daily average of Baidu Search Index from May 1, 2015 to May 1, 2020 is 1051, 596, 453, 359, 362; and the average of Baidu Media Index is 502, 80, 11, 6.3, 1.8, [16] suggesting whether based on the data provided by Baidu or Google Index, it can be found the attention of media and the public to the refugee issue peaked in 2015, but presented an overall decreasing trend thereafter.

This situation is caused by technical characteristics of the agenda itself: at any given time, the number of topics that can be included on the agenda is relatively limited, that is, the limited "bearing capacity" determines that it is impossible to list all the topics concerned by various parties on the agenda during the same period, thus the agenda setting has a natural "zero-sum feature": the more topics one party sets, the fewer topics of the other party that can be included on the agenda.¹⁶ It can be seen from the charts that the peaks of the search and media index about refugee issue are roughly concentrated from September 2015 to the end of 2016. For example, the average daily search peak in Baidu Index occurs from September 7 to September 13, 2015, which is related to the process of European refugee crisis. In short, the development process of the European refugee crisis is divided into three stages by two important events: the death of the Syrian refugee Aylan Kurdi on September 2, 2015 at Burton Beach in Turkey and the Paris shooting on November 13 [17]. Based on the concept of "agenda cycle"[18], it can be found that during this period, the agenda setting for the refugee issue was in a "crisis" and "ritualization" stage; after that, the attention to the refugee issue continued to decrease, and may even be "dormant or disappearing from the agenda". The refugee crisis still exists after 2016, especially with the outbreak of COVID-19 pandemic in 2020, the refugee issue is becoming more prominent: the safety of refugees needs to be ensured, and their living conditions need to be improved. However, the agenda setting for the refugee issue has lacked behind, which led to the absence of refugees' voice in the media, making it difficult for the "decision-making or authoritative allocation" in the agenda setting to be as efficient as that at the end of 2015, thus affecting the improvement of the refugee issue.

Table 1 Trend Line Chart Comparison

Table Type	Trend Line Equation	Trend Line Chart
Baidu Search Index About Refugee	$y=-0.436x+19328$	
Baidu Media Index About Refugee	$y=-0.436x+19328$	
Google Trends About Refugee	$y=-0.0082x+372.84$	

4. Conclusion

In the international political arena, agenda setting is undoubtedly the second representative of power, which determines what topic can be included on the international agenda and what topics are excluded from the international agenda. At the same time, through dominating agenda setting, some actors decide which topics can be given priority attention and which topics will be marginalized [19]. The analysis of linear correlation coefficient shows that regarding the refugee issue, the correlation value r does not reach the strong correlation between 0.8 and 1.0 in the early agenda setting; the declining agenda-setting ability of traditional media and the diversification of subjects of agenda setting for the refugee issue are especially obvious. However, based on the search engine index, it can be concluded that the attention of media and the public to the refugee issue is decreasing, and the refugee issue may even be "dormant or disappearing from the agenda." Therefore, international organizations and non-governmental organizations should realize their important role in the refugee issue. The global refugee problem remains serious, and the concern for refugees should not be halted after 2017. It is necessary to give full play to the ability of diverse subjects in the agenda setting for the refugee issue, so that the refugee problem can return to the "ritualization" stage.

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