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The reflections of new Egypt's strategy to "East Orientation to China" on the leadership's political legitimacy in front of the American and Israeli intervention and the future polices in the Middle East

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Abstract: In recent years, after the "Egyptian June 30th Revolution" in 2013, and the removal of "Muslim Brotherhood regime", with the new coming leadership of the President "Abdel Fattah El-Sisi" who has adopted a new Egypt's strategy, which called "East Orientation to China" in front of the American and Western intervention against the political change in Egypt. Our thesis is attempting to analysis the implications of the Egyptian closeness with China and its initiative for "Belt and Road" on the U.S. and Israeli policies in the Middle East region, focusing on the extent of reflections of the Egyptian new orient to the East on the Egyptian leadership's political legitimacy at home, analyzing the implications of Egypt's diversifying its policy and military options from China on the current stance of the USA and Israel towards it, after the new American administration with "Joe Biden". Additionally, our research is concerning to study the forms of potential collaboration between Egypt and China, such as: "counter-terrorism, combating extremism, Chinese crucial military-technical partner of Cairo as the largest exporter for Egypt, Arms selling, comprehensive partnership… etc.". In this context, the study seeks to determine the future and potential reflections on the regional balancing between Egypt and Israel and the future impacts on the U.S influence in the Middle East and its competition with China in the region.

Keywords: Comprehensive Implications, Egyptian closeness, East Orientation, China, "Belt and Road initiative", Muslim Brotherhood, June 30th Revolution, diversifying policies, Political Legitimacy, Western intervention, counter-terrorism, balancing power, regional and external factors, U.S. and Israel Policies, future polices, Middle East region

1. Introduction

During the past years, several statements about "the new American world order" and "unipolarism" and "the new American century" have emerged and other expressions that emphasized the United States' uniqueness in "world leadership", as it is the only unchallenged superpower. The American academic promotion and theorizing of absolute American leadership, but on the other hand, several writings have appeared - among them by prominent Chinese analysts and strategists - that go to "question the American unipolar system" and talk about a "multi-polar world", and try to refute the allegations of the dominant American power, and question it could maintain its position in light of the rise of China, and the announcement of its Belt and Road initiative in 2013 (1).

As a researcher specializing in Chinese political affairs - and to understand the Chinese strategic analytical mindset, approaching it methodically towards its vision of the United States' policy around the world - and through my reading and reviewing and analyzing a number of (documents of the ruling Chinese Communist Party) and analyzing them, Beijing has always "classified the United States, as a true enemy of China", and here (there are a Chinese document) dating back to 1992 says: "The United States of America, since its transformation into a single superpower - has been working hard to achieve new hegemony and prevail over power politics - all this in light of its entry into the stage of relative decline and the emergence of the limits of its capabilities". In 1995, the Chinese President declared that: "the hostile forces of the West did not give up a minute from their plans to Westernize and divide our country". While his foreign minister said, prior to the annual meeting of the "ASEAN Group", that: "The United States Abandoning its view of itself as the savior of the East, as we do not recognize the intransigence of the United States and its constant claim of its right to play the role of guaranteeing peace and stability in Asia under the pretext of defending its allies" (2).

Here, the Chinese Academy "Zi Zhongyun" - the former director of the American Institute of the Chinese Academy of Social Sciences - expressed Chinese doubts and concerns about the US strategy for world domination. In the course of her evaluation of US - Chinese relations, she described them as "fragile relations", and "Zongyun" said that "the main factor here is the American position on the transformation of China into a modern, relatively strong country", and although the official statements remain as they are, the question is What still arises is: To what degree does the American awareness allow China to be strong, with the assertion of the prominent Chinese diplomat in the Foreign Ministry "Dai Bingo" in an official speech on December 6, 2011, that: "We must adhere to the path of peaceful development".

According to the Chinese analysis, they think that "The United States believes that China is developing by leaps and bounds and is becoming more difficult to control". In other words, "the acceleration of Chinese modernization does not always appear to be in line with those American interests". Accordingly, Chinese leaders have begun to repeatedly talk in their international political speeches about "China's active presence in the international arena", with particular emphasis on "China's rise" as a "peaceful rise" (3).

On the Egyptian side, and the effects of this (the ongoing political, security, economic and regional competition between China and the United States of America on Egypt), we will find here that Egypt's relations with the major international powers, chiefly the two competing powers (China and the United States of America) occupy special importance on the Egyptian foreign policy agenda, especially with the directions of the Egyptian political leadership to President (Abdel Fattah El-Sisi) to support and strengthen Egypt's relations with the major powers without having relations with any of them directed against the other, and that was the most important statement that the Egyptian Foreign Minister Sameh Shoukry summed up the foreign agenda to Egypt during his meeting with members of the new Egyptian Parliament on Tuesday, January 26, 2021 (4).

Egypt is considered the representative of Arab, African, Islamic, developing, and emerging economies, and its influence in international and regional affairs is increasing; on the other hand, the Chinese development model is widely welcomed in Egypt.

Hence, China's keenness to provide permanent support to the Egyptian government's efforts to maintain stability, develop the economy and improve the people's livelihood. China also supported the most important thing the path of development in Egypt in line with its national conditions, in addition to China's support for Egypt's growing and large role in international and regional affairs, to discuss Egypt's relations with the great powers, especially China and Washington, and to understand the extent of their positively or negatively influence on the Egyptian role in the region, and Egypt's regional and international relations. Therefore, the Egyptian researcher tried to present and analyze the following points to understand the course of transformations and Egypt's relations with China and the United States and the importance of each of them for Egypt and the region in creating balance and areas of influence and defending interests.

1.1 Research problem

Prevailing atmosphere of tension between China and the USA on the Middle East which is inhabited by Chinese Initiative for Belt and Road in the region, in light of Chinese crucial military-technical partner of Cairo and as the largest exporter for Egypt, so, our thesis is trying to test the extent of strengthening Cooperation between Beijing and Cairo with the President "Abdel Fattah El-Sisi" may effect on the American and Israeli polices in the region, such as: Arms selling, Western intervention after the removal of the Muslim Brotherhood regime, the situations after the June 30th Revolution in Egypt, collaboration in counter-terrorism and combating extremism in the Middle East, and the overall reactions of the U.S and Israel towards Egypt, in this context, the study seeks to determine the future implications of the Egyptian closeness with China and its initiative for "Belt and Road" on the U.S. and Israeli policies in the Middle East region.

The paper seeks to answer the following questions:

(1) What are the causes that led to Egyptian President "El-Sisi" outreach to China?

(2) What are the impacts of "Sino-Egyptian" closeness on the relationship with both the USA and Israel?

(3) How can prioritize of "no pressures and orientation policy to the East" relationships effect on the future of the Egyptian and American collaboration?

(4) Is it possible that the accelerating and doubling of the economic growth between Egypt and China effect on the relationships with the USA?

(5) What is the stance of the USA and Israel towards Egyptian courtship to China in the

Middle East?

(6) How can Egypt's diversifying of its foreign policy and military options from China effect on the interests of USA and Israel?

(7) How can Egypt's support to China bolster its political legitimacy at home in front of the Western intervention after the removal of the Muslim Brotherhood regime and the 30th of June Revolution in Egypt?

(8) What is the implication of Egypt and China's collaboration in counter-terrorism and combating extremism in the Middle East on the U.S and Israeli?

(9) What are the future Implications of the Egyptian closeness with China on the U.S. and Israeli policies in the Middle East region?

1.2 Thesis methodology approach

The study is based on a secondary analysis of the literature available through the reading and analysis of research studies that address the topic, putting in our consideration the diversity of sources. The main sources provided the basis for this paper.

(1) Articles and books by Chinese, western, and other scholars, published over the last three or more years, that deal with the impact of Arab spring on Chinese policies in Egypt and the region and its future effect on Israel and the USA, analyzing the whole impacts on the Middle East. And more specialized publications on current challenges and opportunities facing both Egypt and Chinese initiative for "Belt and Road" on the U.S. and Israeli policies in the Middle East after the revolutions. Many of the written sources used will be mentioned in the footnotes.

(2) Analytical framework to the writings of Chinese and western scholars, experts, business men, and policy advisors, which will carry out mainly in the period of the study.

(3) Question-and-answer sessions with some Chinese and Arab academics in some universities and research centers.

1.3 Research Approach

This research depends on the main theories of "decision-making" and "System Analysis" approach and mainly adopts the "analytical method" to help us to understand the main factors that influence on the Egyptian and Chinese "national interests in the face of American and Israeli policies" in the Middle East, and the extent that the leaders' adoption of the decision, such as: rationalization, codification, diagnosis, calculation of costs, resources, timing and personal ideological factors.

We can apply the "analytical method" approach on the Chinese readiness to strengthen and develop cooperation with Egypt in the field of military cooperation, law enforcement, and security, as well as the fight against terrorism and transnational crimes and its impact on the current balances in the region. Additionally, the mutual support between China and Egypt after signing a "comprehensive strategic partnership" by the leaders of China and Egypt, as well as a series of cooperation agreements in the field of trade, economy, aerospace industry and energy, and analyzing their impacts on bolstering the Egyptian leadership internal legitimacy after removing "Muslim Brotherhood regime".

On the other hand, the (system analysis) model is based on the fact that the system is the unit of analysis, so a system is a group of elements or parts that are linked together functionally in an orderly manner, including the interaction and interdependence involved (change in an element or part affects the rest of the elements or other parts). In this sense, it is possible to study (political environmental as a system) on the grounds that (political interactions) in a society constitute a system of behavior.

Here, the researcher may apply "System Analysis Approach" to highly understand the "mutual impacts of the environmental, regional and external factors on Egyptian interactions in the Middle East", mainly with both the USA and Israel, so that the individual falls under the pressure of a specific set of factors that compels him to take a path certain or mix certain paths, and this may be basically rational or random. The researcher can depend on the application of this approach to analysis the implications of closeness between Sino-Egyptian relations on the balancing future in the face of both USA and Israeli sides in the Middle East.

Our thesis is attempting as well to adopt the "decision-making theory" to recognize the "impact of political leadership's decision of both the Egyptian President "Abdel Fattah El-Sisi" and his Chinese counterpart "Xi Jinping" of reaching out their mutual understanding to the "strategic nature of the partnership" between China and Egypt, and the need for further development of bilateral relations, not only in the field of trade and economic cooperation but also in "military-technical and military-political cooperation". So, our study is analyzing as well this decision on supporting "Egypt's internal legitimacy" and the impacts of Egyptian decision to support the "Chinese project One Belt, One Road" on the competition between China and the USA, and the American ally of Israel in the region.

Finally, our research is analyzing and Summing up the results of recent years of Sino-Egyptian cooperation on the different approaches, such as: the successful implementation of the New Suez Canal project with the participation of China, as well as the modernization of Egypt's infrastructure. Notifying that despite some positive trends, there is a serious challenge in Egyptian-Chinese relations that could "negatively affect the interaction between them", which represents the rejection of the USA of the intensive cooperation between them, and the negative impact of American-Israeli mutual policies on the future of Sino-Egypt closeness in the region in the face of China.

1.4 Research hypothesis

The first hypothesis will be conducted by the researcher about the more the instability in MENA region after the removal of "Muslim Brotherhood", the more challenges could face the Chinese interests in Egypt and the Middle East.

The second hypothesis will be conducted by the researcher about the more the risk factors in the Middle East, the more strategies will be adopted by USA and its ally of Israel in the face of China in the region.

The third hypothesis will be conducted by the researcher about the more the changes have occurred in Egypt and the Middle East, there will be new American and China's competition policy will be in the region.

The fourth hypothesis will be conducted by the researcher about the more the changes in Egypt and the region concerning Egyptian relations with China, USA and Israel, the more questions about the possibility of having a new regional and international balancing between China and USA affiliated by their allies in the region, mainly: Israel and Arab states.

1.5 Studying division

Where the researcher is seeking through the study of the impact of the need for further development of bilateral relations between China and Egypt on American and Israeli policies in MENA region, so the researcher will identify and study the following aspects, which are themes relevant to the concerns of the researcher, it entails addressing the following:

First: An overview of the Egypt's new orientation to the East and China after the removal of "Muslim Brotherhood" after June 30th revolution in Egypt

Second: Egyptian President "El-Sisi" outreach to China: implications on the USA and Israel policies

Third: The impact of Egypt's diversifying its policy and military options from China and the stance of the USA and Israel towards it

Fourth: The potential opportunities of collaboration between Egypt and China in "counter-terrorism and combating extremism" on the U.S and Israeli relationships

Fifth: The new Egypt's strategy to "East Orientation to China" on Egyptian leadership's political legitimacy in front of the Western intervention

Sixth: The Prospects and future Implications of the Egyptian closeness with China on the U.S. and Israeli policies in the Middle East region.

2. Egyptian outreach to China and its impact on its relationship with both the USA and Israel

China tends to play an active and increasing role in Egypt and the Arab region in order to secure its energy security, and this does not mean that Chinese and American policies will clash, but the difference appears that China supports the features of Egyptian internal reform led by "El-Sisi" and supports Egypt's policies after the success of the June 30 revolution in Egypt, China also strongly opposed any external attempts to impose conditions for transformation on Egypt after the June 30 Revolution, as China was one of the most important international powers in the world that supported President El-Sisi, and defended the right of the Egyptian people to solve their problems by themselves, without Interference in his internal affairs, and here China's stance towards Egypt is closely related to its sense of national sovereignty and its successful experience in economic reform. We find that the Egyptian Chinese cooperation achieves a strategic interest for both parties, as Egypt achieves strategic benefits from its economic, political, and cultural ties with China, with the importance of Chinese investments in Cairo and the diversity of relations and partnerships, and the importance of the Suez Canal as a global navigation corridor that serves Beijing's strategic interests, as a starting point to China from Egypt around the world (5).

Egyptian-Chinese relations are closer and deeper, which maximizes the gains of the Egyptian state in its relations with other international powers, especially the United States of America and its ally Israel in the region. It also diversifies relations in front of the Egyptian side, and on the other hand, the rapprochement between China and Egypt leads to strengthening China's relations with Arab countries, which leads to strengthening and strengthening its political, economic and cultural ties within the framework of a Chinese strategy to strengthen relations with the so-called countries of the enlarged neighborhood, Which includes:

the countries of Central Asia and the countries of the Middle East, in light of real indicators of the new international order towards pluralism, and with the presence of many international transformations, especially after the global spread of the Corona pandemic and the spread of the Covid-19 virus around the world, and the world's realization that China is the only force capable of extricating the world from its crises.

Here we find that the “Belt and Road” initiative helped stabilize the financial system in Egypt after the success of the June 30 Revolution, which helped save the deterioration of the Egyptian citizen's income. The financial system in Egypt was suffering from severe turmoil between the years (2013-2014). This was during the stage in which China launched the “Belt and Road” initiative. The financial system in Egypt was a dual currency rate system before November 2016, where there is a big difference between the official rates of the Egyptian pound against the US dollar and market prices, and the difference doubled in 2016, for example, the official price of the Egyptian pound against the US dollar was up to 1.78 pounds, while its price in the market was 18 pounds, so the difference between them was really very large. However, Egypt started adopting a free trade policy after November 2016, which made the entire financial system become more stable (6).

Given the importance of the Egyptian side to the Chinese, we find that (the extensive coverage by the Chinese press of what the Egyptian press publishes), and as (the Chinese Xinhua News Agency in its Arabic edition), it has, for example, a fixed paragraph that covers the events published by the Egyptian newspapers in an intensive and in-depth way, due to the importance of the events of Egypt for China.

It is clear that China aspires to play global roles, and the futility of escalating the confrontation with regional and global powers, and thus the presence of unlimited Chinese political support in the Security Council and international forums for Egypt and all Arab countries with what distinguishes Chinese policy from refraining from imposing dictates related to the internal affairs of countries, just as China, in its endeavor to settle the “Taiwan problem” on the basis of one country, two systems, needs the recognition of 22 Arab countries, which is more than 10% of the members of the international community that Taiwan is an integral part of Chinese territory. The Arab countries represent a political back for China in the international arena, and China, in its endeavor to gain more international standing, needs Arab recognition of its role in the issues of concern to Egypt and all Arab countries.

On the other hand, although the Chinese “Belt and Road” initiative does not officially include Israel in its maps, the geographical location of Israel, the important Chinese economic participation in it, and the emerging peace agreements in the Middle East, put Israel in a major strategic point in the Chinese initiative, and of course when so from influence on the Palestinian cause, Egypt, and the Arab countries.

For China to succeed in its new policy in Egypt and the Middle East, as China abandoned its old strategy based on ideological considerations, and adopted a completely different new policy in defining its allies based on the principle of utilitarianism (pragmatism), and a strategy of openness and exit regionally and globally, at the level on the regional level, China has adopted a policy of good neighborliness, to achieve two goals: The first goal**:** smashing the sanctions imposed by the United States and its allies and thwarting the attempt to contain and isolate China; The second goal: preparing the regional environment to be an environment conducive to achieving development at this stage of the Chinese rise (7).

On the US side, all indications indicate that the new Biden administration is heading to adopt hardline policies towards China. During his confirmation session in the US Senate, the new Secretary of Defense in the Joe Biden administration era, General Lloyd Austin, described China as a “growing danger, and that confronting it would be one of the most prominent directions of the Pentagon's activities” in the Biden era.

As National Security Adviser Jake Sullivan indicated - in an interview with the Peace Institute in Washington on January 29, 2021 - that “the Chinese believe that their model is more successful than the American model, and this is what they are promoting around the world (8).

Here, the analysis of the Egyptian researcher indicates that, both Egypt and Israel will inevitably be affected by the continuing confrontation between Washington and Beijing, especially since the two great powers, the American and Chinese, are in the process of “a new cold war, but it is not like the Soviet-American cold war, because the economies of the two countries are highly complex interconnected with all countries of the world, which will negatively affect Egypt, Israel and all countries of the Middle East. We do not deal with China now as a closed country like the Soviet Union that can be contained by closing the door on it”. It also doubles the risk of the two powers colliding on the world, their huge economic interdependence, and the influence of the rest of the world by it.

Hence, the continued desire of Egypt, Israel, and all countries in the region to deal economically with China and with Washington in many other files, especially in various political aspects, will negatively affect everyone, especially considering the United States' desire to preserve its position as the largest military power. And economic issues in the world, which leads some to pressure adopting zero-sum equations in its relationship with China, which is struggling economically and militarily in the Middle East.

Perhaps this explains the reasons for the visit of the former US Secretary of State during the Trump's administration, Mike Pompeo in his first foreign visit after the outbreak of the new Coronavirus crisis to Israel on May 13, 2020, when he came to express the US's concern about the Chinese - Israeli rapprochement – which exposes the Israelis interests to danger, as he put it. And most importantly, he not only expressed his concern to the Israeli government, but also deliberately made his speech in Israel a launching pad for addressing the countries of the region that intend any rapprochement with China (9). As a result of this speech, the government of Israeli withdrew, on May 26, 2020, the tender for establishing a water desalination project in Israel from the Chinese company "Hutcheson".

Based on this analysis, it can be concluded that Washington will continue its pressure on all countries in the region, especially its ally Israel to sever its relationship with China. However, Israel, Egypt and all countries in the region are determined to benefit commercially from the Chinese side, and to deal with Washington, and try to Both Egypt, Israel and all countries avoid confrontation or support with or against any of them, whether American or Chinese, while continuing to deal with them economically and politically, according to the interests of each country separately, to reflect this on the national security of countries.

3. The impact of prioritizing "no pressures and orientation policy to the East"

China began searching for a new strategic concept of engagement in the Middle East, shortly after the Obama administration announced the transformation from the Middle East region and its gradual withdrawal from it towards the continent of Asia in 2011 (10).

In 2012, "Wang Jisi", the most prominent Chinese foreign policy commentator, proposed a concept called "Westernization", writing that: "as Washington rebalances Asia, the relationship between America and China has become increasingly controversial and based on a zero-sum conclusion" (11).

By studying the bilateral interaction between "two strategic forces" that are effective for Egypt and the region, with a hypothetical consideration of the Arab world and Egypt at the heart of it, and it is considered a variable dependent on the influence of two independent variables, namely "Chinese rise" and "American unilateralism". Hence, it can be considered the Egyptian shift eastward towards China and Russia to ease American and Western pressure on it, which depends on several Chinese factors in the first place, namely:

1) The extent to which China's economic power will increase its role, presence and influence will increase in the coming period in the Middle East.

2) The most important thing that drives Beijing's policies towards Egypt and the region is "achieving the goal and the mutual benefit of all parties, and not imposing their policies or agendas with threats and imposing sanctions on countries such as Washington", so China generally focuses on areas of cooperation in the economy, culture, security, and technology (12).

3) The most important thing for the Egyptian researcher in the future is the extent to which Beijing can develop itself to defend its allies and partners such as Egypt and others, in the event that any Chinese ally is exposed to any unsecured confrontation with Washington, and is China really ready to defend Egypt and its allies? (13).

Here we find that this growth in Sino-Egyptian and Arab relations, and what appears to be (adopting the policy of heading east), behind it is a high Egyptian realization that (the world will not continue on the unipolar system, and that the world system is in its current state - especially in a post-world world). The Corona pandemic and the United States' retreat in its internal affairs - has begun to move strongly towards "multipolarity", of which China is one of its most prominent components. Therefore, the freedom of Egyptian foreign policy is in "diversifying alternatives", and this growing trend is also reinforced by many intransigent American positions towards Issues of the region and the world, and among the most prominent of these American positions: (a) The trade war that the US administration set up for former President Trump against China and the European Union, and the extent of its international influences on Egypt and the Middle East, and issues of international trade freedom. (b) The withdrawal of the American administration and the disavowal of its commitments on matters that have been internationally agreed upon, such as those related to (climate change, and its lack of respect for international legitimacy decisions and the international law system). (c) Washington and "Trump's administration" declared alone that (Jerusalem is the capital of Israel and the announcement of the transfer of the American embassy to Jerusalem), which angered and angered Egypt and all Arabs, and Middle Eastern countries against American policies that contravene United Nations and international community decisions, as well as the American Presidency's issuance of decisions that have affected other Arab countries like Syria that is not subject to its sovereignty, And the last of which was that internationally unacceptable decision, contrary to international legitimacy and laws, which was issued by the United States of America granting the Golan to Israel, as if the Golan is a piece of American territory (14).

4. The Implications of the economic growth between Egypt and China on the relationships with the USA

Many "Chinese foreign policy thinkers" were very concerned about the risks that would be counterproductive to an ambitious Chinese project such as the Belt and Road Initiative in the Middle East. The Chinese strategists) understood the logic of harnessing the country's economic power for political benefit, but they were afraid of being entangled in a web of national and sectarian rivalries in the region. Especially, with the majority of Chinese political analyzes indicating that avoiding such an outcome is no easy task. The Middle East has been a dilemma for many of the world's major powers, including the United States of America and Britain.

Hence, the Egyptian researcher understood that China's goal is to achieve influence without getting involved in the Middle East, through the Belt and Road Initiative, which succeeded brilliantly in achieving China's agenda. Although there are - several countries in the Middle East, including problems with regional neighboring countries, such as Iran and Israel - included in the list of countries supporting the Belt and Road Initiative, nevertheless, all these countries have committed in one way or another to partnering with China, and this alone should be a warning bell and a big fear for Washington. All these countries do not agree on almost anything, but they all support closer relations with China.

However, despite the remarkable achievements that have been achieved through the Chinese Belt and Road Initiative in the Middle East and Egypt over the past five years, the Belt and Road Initiative still faces many doubts from Washington about Chinese influence in the region.

The United States began promoting and intimidating slogans of "Chinese imperialism", claiming that "China is using sovereign debt to obey other countries that received Chinese financial aid to their will and pass their policy". However, Washington's allegations regarding the alleged "Chinese imperialism" lack scrutiny and further empirical evidence for them (15).

Hence, the acceleration of economic growth in the relations of Egypt and the countries of the region with China will inevitably affect relations with Washington in the future, as all the existing indicators and data confirm and anticipated expectations that Egyptian and Arab cooperation with China is a matter of great importance and is on the way to a stage leading to rising and expansion, this was called by all Chinese officials in the various official occasions. Officials in China always assert that if East Asia, in which China is located, unites with North Africa in which Egypt and the Arab countries are located, this will affect the course of international events, and it will contribute. In reaching multipolarity, which is something that the United States does not want in order not to affect its control over the Arab region and the whole world in general.

5. Egyptian courtship to China and its implications on the American and Israeli interests in the Middle East

There was a great fear in China that the great openness to Egypt and the Middle East would provoke antagonizing the other great powers, especially Washington. This was confirmed by the Chinese researcher Zhi Zhang, who wrote in the "Global Times" in 2013, that "the Chinese strategy of immersion in the Middle East will inevitably harm the Chinese relations with Russia and America and lead China to invest in "dangerous fields", hence, "China shouldn't take a big step in opening up to the Middle East", according to the analysis of the Chinese researcher Zhang (16).

Egypt and all Gulf countries, including Saudi Arabia and the UAE, also used "Huawei to build fifth-generation networks and communications infrastructure", and all of them defied US pressure. The UAE was the first foreign country to grant emergency approval for the (Covid-19) vaccine from the Chinese company Sinopharm, and the ruler of Dubai, Sheikh Mohammed bin Rashid Al-Maktoum tweeted, taking a picture of himself apparently receiving an injection of that Chinese vaccine and not the other vaccines that Promoted by Washington and Britain.

This confirms the importance of the Chinese side to Egypt, without its funding and experience, it will become difficult to implement several prominent Egyptian projects such as the new administrative capital, the new industrial zone of the Suez Canal, and the great activity of the Chinese giant “TEDA” in attracting hundreds of Chinese companies and implementing Many Chinese projects in the Suez Canal area on the ground. In return, China wishes to take advantage of Egypt's position in the Arab world and Africa to facilitate bilateral and collective cooperation in both regions, including within the framework of projects supporting the “Belt and Road Initiative”. All this worries the United States, especially with the American warning about the possibility of China using its accessibility to the Egyptian and Arab ports and the Suez Canal as a vital global shipping corridor, in order to improve its position in the Middle East and perhaps collect intelligence information about American interests, similar to Washington's concerns about the activity of China in the Haifa port in Israel, and the extent of its impact on the American and Israeli national security, given that Israel is Washington's first ally in the region (17).

Hence, the rapprochement of Egypt and the Arabs as a whole and their flirtation with the Chinese pole will have its future effects, especially with the candidacy of China to be a great power with a prominent global role considering the current international reality, just as all Arabs need to strengthen their negotiating position and their national entity in the face of the United States and the West. And Arab issues, on top of which the Arab Israeli conflict, Palestinian rights, and several thorny and unresolved issues between Palestinians and Israelis, such as building settlements and the return of Palestinian refugees, and others. Therefore, we find that the interests of the Chinese, Egyptian and Arab parties are necessary to preserve the rights of all parties in the face of American and Western hegemony, and the similar Egyptian Arab Chinese conditions, exposing them almost all to the same pressures and challenges.

6. Diversifying Egypt’s foreign policy and military options

The current situation in the Middle East works mainly in favor of China and its economic priorities, as Beijing is trying to gain influence in the Middle East region, while trying to distance as much as possible and avoid complex national rivalries and sectarian conflicts in the region. The United States of America spends huge sums of money to fight extremist groups and protect freedom of navigation in the Gulf countries and the maritime straits in the region, and here China directly benefits from the stability of oil prices. What China wants now is maintaining this arrangement while gradually gaining the ability through its “Belt and Road Initiative” to pressure countries to side with it.

In a new development, the Israeli National Security Studies Institute of Tel Aviv University considered that the relations between Israel and the United States, after the entry of a new American administration led by Joe Biden, are under test), and this comes against the background of tensions with the new American administration relations with Israel, on specific foreign issues, and the significant erosion of Israel's position as a consensus center between the two major parties in the United States, and “as the only democratic country in the Middle East”, as it has always promoted itself in the region (18).

About the Egyptian Chinese military cooperation and the extent of its impact on Washington and its ally Israel, it is noted that this remarkable growth in economic relations between Egypt and China through China's development projects in Egypt as part of its Belt and Road initiative has encouraged the leadership in both countries towards more areas. A strategy, where it was discussed the possibility of Cairo obtaining Chinese devices that were scheduled to operate within an American warning and jamming system, or China's assistance to Egypt in providing it with advanced technology for Internet surveillance, especially monitoring extremist and terrorist elements on the Internet, and Egypt opened lines of communication several times with Beijing to establish a peaceful nuclear reactor in Alexandria, or to obtain Chinese arms, missiles and tanks deals, and other Chinese military equipment (19).

Egypt is considered the most major military power in the Middle East and at the same time among the most important markets for Chinese weapons. According to the “China Power” project launched by the Center for Strategic and International Studies in Washington, all African countries, including Egypt the first destination for Chinese weapons in Africa, represent 42% of the total Chinese military experts (20).

In the context of the Belt and Road Initiative, as the American researcher emphasized in her well-known book, entitled “The Chinese Eurasian Century: The Political and Strategic Implications of the Belt and Road

Initiative", which is written by the American academic Nadij Rowland, as an expert in security and political affairs at the "National Bureau for Asian Research" – she is actually visited Egypt in 2019, as she mentioned in her book - and the American researcher Roland and other colleague of hers involved in the research conducted an interview that had already taken place in Cairo with a Chinese diplomat, at the Beijing embassy in Egypt, in January 2019 - it is important to remember and understand. According to the analysis of the researcher Nadig Roland: promoting regional development in Egypt, Africa, and the developing Arab countries, is not considered a way to encourage political openness, rather it is on the contrary, it is a means to strengthen the existing authoritarian regimes, arm them militarily and install them around China... Hence, the Chinese intercontinental infrastructure will be helped through the Belt and Road initiative to prevent potential disruptions to the maritime supply in the event of a conflict. Consolidating China's strategic space will help counter the alleged U.S.-led efforts to contain the country's emergence. Going beyond these tangible goals, the Belt and Road Initiative also seeks to meet the broader regional ambition, to establish a European-Asian system centered on China, and with it - China's military relations with various countries and regions of the world, such as the Middle East and Egypt, are imperative to protect China's interests and defense. About it - and achieving security and political stability for the existing Chinese projects within the framework of its Belt and Road Initiative (21).

China's cooperation on the security and defense levels is expanding in the Arab world and Egypt, especially with the increase in its economic presence in those countries. Chinese marine projects especially project to produce Chinese submarine cables in the Arab world and the Middle East, constitute a key element in China's focus on communication and information communication with the various countries of the region. For example, the Chinese marine network company, Huawei, delivered the "Hannibal" cable linking Tunisia and Italy, in addition to another important cable linking Libya and Greece. This matter has generated concerns in the United States of America and the West about the danger of using Chinese commercial investments for non-commercial and military intelligence activities in the countries of the Middle East, such as gathering intelligence information for China through "military maritime cooperation projects in the Mediterranean countries", such as this. It seriously harms the security of Washington and its bases in the Arab Gulf and affects the American influence in the Middle East (22).

We can recognize the first actual Chinese military involvement in the Middle East in Libya after the Libyan revolution and other Arab Spring revolutions in 2011, when the People's Liberation Army Navy helped evacuate about 40,000 Chinese workers from Libya, before the organization of "NATO" began to launch airstrikes. After that joint Chinese-Russian military exercises took place in 2015 in the Mediterranean region. In 2017, China opened its first military base outside the country in the state of Djibouti, to protect its ships and economic interests from Somali piracy and to protect the straits and sea lanes of strategic importance to China in the Arabian Gulf and the Middle East. In January 2018, two warships from the 27th Chinese Naval Guard Group visited several countries in the Middle East and North Africa, as a part of a four-month Chinese military expeditionary cruise for supporting the naval military cooperation with the Middle East and Mediterranean countries (23).

Here, we find that Egypt's tendency to military cooperation with China has of course aroused the objection and anger of Washington, which expressed its dissatisfaction with the Egyptian-Chinese relations, especially the military, on more than one occasion, especially with an attempt to retrieve an old military incident that has a deep significance for the fear Washington from the growing military relationship of Cairo with Beijing - and this dangerous incident which the United States considers a threat to its national security and the security of its ally "Israel" in the region - is Cairo's permission for a Chinese delegation to visit an Egyptian base containing American F-16s, without Washington's knowledge, according to what was mentioned in a secret letter from the Washington embassy in Cairo and its military attaché to the US Secretary of State Hillary Clinton in 2009 (24).

7. Bolstering political legitimacy in Egypt

Talking about China as a "model" that expresses the Egyptian regime's desire to learn from its experience is to draw closer to it and close cooperation with it - especially on the Suez Canal - in the fields of technology, investments, trade, maritime transport, and tourism. In addition, the comparison with China aims to enhance the Egyptian public's confidence in the positive results of the recovery and economic reform plan that President "El-Sisi" has been pursuing since November 2016 in cooperation with the International Monetary Fund. Hence, attachment to Chinese success aims to achieve a broad consensus for firm Egyptian economic measures, which China also went through in its early developmental beginnings - on top of which is the reduction of government subsidies for fuel and food products - that will give the basis for their fruits in the medium - long term.

Raising the Chinese model to the level of a supreme ideal serves the Egyptian economic agenda on the other hand: it allows granting legitimacy to the current political model, with the emphasis it places on the importance of achieving stability and not compromising Egypt's security for any reason, combating terrorism and extremism, and confronting the hidden extremist agenda of the Muslim Brotherhood terrorist group, moving towards development and construction, and other Egyptian economic institutional mechanisms, arrangements and procedures similar to the beginnings of the Chinese development model, focusing less on the issue of freedoms and democracy, and not allowing Washington and the West to interfere in the internal affairs of Egypt in this regard. In a series of articles published by Gamal Abdel-Gawad, the former president of the “Al-Ahram Center for Political and Strategic Studies”, he emphasized in his analyzes that Egypt favors the authoritarian Chinese model over the Indian democratic model, given the size of the security and political challenges that Egypt faces at that delicate stage, because the Chinese model has proven itself as a guarantee to maintain the stability and security of the state with the achievement of high rates of accelerated economic development. Indeed, the legitimacy upon which the Egyptian regime is based on its citizens is built on their confidence in its security and economic achievements, and not because of establishing a parliamentary democracy according to the Western model (25).

Hence, it is noted that the Chinese model plays a media role in the efforts of those in charge of reforming the Egyptian economy to gain public legitimacy for Egypt's successful economic steps, which are supposed to bear fruit in the medium and long term. And the media’s dependence on promoting the Chinese economic model, especially in its beginnings and the size of the stumbling and the crises it witnessed, in reference to the extent of its similarity with the beginnings of the Egyptian economic model, and what it targets in the future (26).

The Egyptian researcher concludes that at this stage, it appears that Egypt is seeking to integrate the elements of the Western development model and the Chinese development model, which resembles in some of its economic advantages the Western ones but rejects its political advantages. Hence, President El-Sisi seeks to emphasize this strategy, especially during the coming period, considering that the success of this strategy is a real key to Egypt's economic prosperity and its salvation from its crises, like the Chinese model.

8. Collaboration between Egypt and China in counterterrorism and combating extremism

It is notable that China has succeeded diplomatically in its battle in the Middle East to win over and neutralize all Muslim countries in the Middle East, including Egypt and Saudi Arabia, regarding non-interference in China's internal affairs, and what Washington and the West are raising against Beijing and its policies in the “Xinjiang” region and the way of its treatment of the Uyghur Muslims in this province (27). For example, we find that in 2019, I commend the visit of Saudi Crown Prince Mohammed bin Salman to China, praising China's domestic policies to “combat internal terrorism in the Chinese Muslim province of Xinjiang”. China also succeeded in “co-opting and neutralizing Turkey”, and the Turkish President “Ragab Tayyip Erdogan” on the issue of the “Chinese Uyghur Muslims in Xinjiang Province”, just a few years ago, Turkey was a prominent defender of the Uyghur Muslims in China, and the Turkish promotion of them, considering them a Turkish people with a community Big in Istanbul. But, there was a sudden change in the position of the Turkish President Erdogan and his silence towards China regarding the “Xinjiang” region, with some international indications that the Turkish police have arrested hundreds of Uyghur refugees by order of China, with the severe crisis in the Turkish economy and other Muslim economies In the Middle East, everyone, including Egypt of course, has sacrificed to depend more deeply than ever on Chinese investment and trade, by announcing everyone to join the Chinese Belt and Road initiative.

On the Israeli side, almost the same issue applies to “the official Tel Aviv institutions regarding their handling of the Uyghur Muslim file in Xinjiang”, with Israel resisting the increasing American pressure against it to limit its commercial dealings with China. We find here a severe Israeli challenge to Washington through Tel Aviv's insistence on subjecting the important strategic “Haifa Port” to an operating lease agreement with a Chinese state-owned company for a period of 25 years. The Israeli government rejected several American requests to inspect and inspect the Israeli facility leased by the Beijing government. China is also investing hundreds of millions of dollars in the Israeli technology sector, despite the previous Trump administration campaign, which lasted for a long time, to persuade Israel of “the necessity of China’s withdrawal from the important strategic projects in Tel Aviv” (28).

Here, we find that the growth of bilateral relations between China and Israel has repercussions and adverse effects on Egypt and the Arab world, because the concordance of vital interests between the two countries, especially those related to security arrangements, may contribute to Israel's penetration of Arab national security, and the establishment of international and regional axes hostile to the Arabs. Tel Aviv's future security and military strategy is based on the psychological penetration of Egypt and the Arab world in terms of their strategic “China”, which opposes and competes with Washington's policy, because of China's traditional and historical relations with the Arabs, as well as the strategic importance of the Chinese Belt and Road Initiative as a location close to the belt Islamic, specifically “Pakistan and the Arabian Peninsula”, or what is currently known as the Arab Gulf states (29).

From the days of all previous Israeli prime ministers, such as Ben Gurion, Golda Meir, passing through Levi Eshkol, Yitzhak Rabin and Menachem Begin, to Ehud Barak, Benjamin Netanyahu, and Ehud Olmert, there was an eternal Israeli conviction and still says that Israel is in danger in the shadow of the hostile Arab environment. Consequently, protecting and preserving the “Hebrew state”, financially and spiritually, and consolidating its future and perpetuating its existence, through consolidating its international alliances with great powers such as China, is an issue that occupies the forefront of the Israeli security thinking (30).

Hence, one of the main challenges that were on the list of topics that were discussed and analyzed within the Israeli decision-making circles is partnership and cooperation with China and Egypt also on the issue of combating terrorism, discussion, and evaluation of the impact of fundamentalist terrorism in Syria and the region on the Israel - Egypt – China interests and their national security (31).

Here we conclude that the subject of the new Chinese partnership with Egypt, Israel and some countries in the region for cooperation in the issue of combating terrorism and its extremist organizations and their extensions in the Middle East region has posed a challenge in itself against Washington, which China considers its rising strategic enemy according to the American national security document issued by The Pentagon in 2018, therefore, the partnership and security cooperation between Beijing and Tel Aviv on the issue of combating terrorism in the region, as a top priority for Washington to monitor the impact of this security, intelligence and military cooperation between China, Israel, Egypt and the region on its security and intelligence arrangements and its impact on the future of their alliances In the Middle East. Especially with the overlap between a set of political, economic, and strategic factors and internal considerations for such Chinese cooperation with Israel, Egypt, and the region, and all of them stand against the terrorist fundamentalist penetration and its extension within their own countries.

9. Analysis of the future Implications of the Egyptian closeness with China

The United States of America has worked to “disengage gradually from the Middle East” during the past years, according to a carefully studied American strategic plan to devote itself to compete with China in Asia. And here remains the future fear of America and Israel together about the Sino-Iranian alliance and the attraction and partnership of Shiite organizations throughout the region to China for reasons like the attraction and Iranian justifications for its rapprochement with Beijing. They all see China as a strategic counterweight to America. In an important article by the Iraqi Minister of Electricity “Louai Al-Khatib” in October 2019, he acknowledged that “China is our primary choice as a long-term strategic partner”. Several other paramilitary Shiite groups from Iraq and Syria Asabi Ahl al-Haq to Lebanon Hezbollah have repeatedly praised China and demanded an increase in Chinese investments in the region as a “rebuke and strong message to America in the region and the unwillingness of its presence and the need for its withdrawal in favor of China”.

Perhaps the most prominent future impact on Israel and the United States of America regarding rapprochement with China, for here it mainly appears in Israel within the Israeli neoliberal political school, as this school believes that regional and international economic cooperation through intra-trade and joint economic projects, and mutual investments with Major powers other than Washington, such as China in the first place, create an environment conducive to cooperation and increase incentives for countries more than conflict, and this ultimately leads to the creation of a state of mutual dependence that can be exploited politically to make trade-offs and bargains in security, military and strategic files (32).

Here, we find that one of the most important foundations of the Israeli security theory is closer relations with the major and active countries in the world, and the creation of international and regional alliances that contribute to stabilizing their presence, strengthening their military capabilities, and subsequently helping them to encircle the Arab world. Therefore, we find that one of the most important military and strategic alliances that Israel has forged with the outside world was the alliance with China, which caused many turmoil and crises between the United States of America and its first ally in the region, which is Israel, due to the fears of those in Washington about such a rapprochement between Beijing and Tel Aviv refer to the decline of the US role and influence in the region in favor of China, especially Washington's regional allies, such as Egypt, the Arab Gulf states.

10. Results and conclusions

Through a detailed analysis of all the previous points and elements in the research paper, the Egyptian researcher briefly concluded that the relations of Egypt and the countries of the Middle East region with China, through its initiative for the Belt and Road, and the joining of all those countries with relations with them including Israel are of concern to the United States of America, for the following reasons**:**

(1) These countries view the new global trend in the east of China, which serves their economic ambitions and interests.

(2) The importance of the Chinese initiative to Egypt and the region, and its project is known internationally as Belt and Road, and this project contains a trade hub that enhances China's commercial presence in world markets through the Egyptian Suez Canal axis, in a way that helps it to open new markets for it and access to the world Through the Egyptian side.

(3) The importance of the monetary axis of the Chinese Belt and Road Initiative, which seeks to make the currency of Chinese "Yuan" a global currency, in a way that frees the world economy- Egypt and the Middle East as an important part of it - from relying on the US dollar, as a global payment currency.

(4) In addition to the fact that the Chinese initiative also has a geopolitical and strategic split, then a defensive military axis as we analyzed in our research paper to defend the interests and investments of China, so that it can link Egypt with all countries of the world through which this road passes with close relations through their common partnership With China.

(5) The United States of America looks with concern because of the increasing influence and military presence of China, and defense partnerships between Beijing, Cairo, Israel, and various countries in the Middle East, as China is no longer limited in its cooperation with Egypt and the countries of North Africa and the Middle East in the economic and cultural fields only, but has gone beyond to it, and includes both diplomatic and defense fields as well.

(6) Beijing's desire to preserve the security and stability of the Middle East and its investments there, pushed the Egyptian Chinese military relations more deeply, and Beijing increased the volume of its military and defense exports to Cairo and the region, which have become more diversified, such as weapons, military equipment, Internet surveillance and espionage devices to control terrorist elements, cells, their organizations and distributions and others.

(7) Moreover, China adopts a development model that seeks to integrate political authoritarianism with patterns, policies, programs, and reforms of economic growth, to gain acceptance and political legitimacy among its citizens and the masses, which is considered by many Egyptian and foreign analysts themselves as a more close model to Cairo politically, economically and in the media, during the period of President El-Sisi and it is a model that promoted by a number of political regimes throughout the Middle East and North Africa.

Accordingly, it is likely that the growing role of China in Egypt, Israel, North Africa and the Middle East countries will have economic and geopolitical repercussions that are very influential in the countries of the region and around the world, especially in the context of the US-China rivalry, and Egypt will maintain its influence, as well as From the other countries of the region, it is the balance point in Beijing's relations with Washington and pushing it towards pluralism and distance from hegemony and unilateralism. Its inevitable result becomes that China's relations with the United States in the framework of searching for areas of influence and securing interests either lead to more cooperation or Conflict between the two parties, and the most important thing in my final analysis is the extent of each party's ability to attract others in a good framework of competition and pluralism, far from the idea of unilateral hegemony in consideration of everyone's interests.

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The Challenges to Contemporary Literary Criticism

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Abstract: Since the mid-1980s, the vanguard concept of literature has gradually weakened, and the individualized writing no longer bears the responsibility of guiding life, and the discussion around the moral issues of texts tends to be marginalized. In addition to the reasons of the times, the key factors that cause the ethical crisis of literary criticism are mainly reflected in the theoretical level and the epistemological level of literary essence. Giving that the current crisis of literary criticism, the Chinese literary circle has initiated a great discussion on the humanistic spirit and advocated that the ethical spirit should be regarded as the belief in literary creation. In this paper, the author argues that literary criticism needs to discuss the moral issues in the text from the perspective of abstract human value and illustrate the meaning of individualization by referring to the critical spirit and cultural responsibility of intellectuals.

Keywords: Contemporary literary criticism, individualized writing, literary ethics, reader effect

1. Introduction

Since 1949, the development of Chinese contemporary literary history has experienced three phases: the emphasis on class struggle as the mainline of the literary creation period (1949-1978), the focus on nostalgic “Scar Literature” in the literary psychology period (1978-1989), and the diversified patterns in literary development period (after 1990). The narrative positions gradually shift from the common social ideal to the personal stance. Throughout these three stages, contemporary Chinese literature has gone through creative development from personal emotion, personal perception to personal experience. Along with the development trend of individualized writing, problems such as the separation of individuals from public life and the neglect of ethical spirit gradually appear.

In fact, this kind of individualized writing tendency has a certain historical context. The individualized writing in the 1990s has already emerged in the 1980s. With revolutionary enthusiasm and beliefs in changing the world, a group of writers creates the works inevitably revealing a certain sense of self-esteem and arrogance. However, in front of the gap between ideal and reality, they more or less show weakness and are immersed in their own spiritual world. Zhang Wei points out writers in the 1980s felt closely related to the times, but at the same time they felt a kind of separation from the mainstream of society. Chen Xiaoming believes that the creation in the 1990s is in a state of thoughtlessness, the literary description falls into nihilism, and the Chinese mainland literature is subjected to “derogatory evaluation”.[1] The competition of market interests and the utilitarianism brought by cultural consumerism have a great impact and devouring force on the current humanistic spirit. People’s spiritual sentiment and moral appeal gradually fade, and the discussion of “humanism” in literary criticism is on the decline. It can be seen that literary criticism has fallen into a crisis situation in which discussion of ethical values is neglected. Chen Sihe points out that since the mid-1980s, the concept of a vanguard of Chinese literature has gradually weakened and literature has gradually been marginalized. Literature no longer bears the responsibility of guiding life but has become a propaganda tool for certain political consciousness. [2] If things go on like this, the road of Chinese literature will become narrower and narrower. For the development of Chinese literature, the author should strive to combine humanism with social ethics to deepen the ideological connotation of the literary works. At present, the “absence” of the author’s ethical standpoint mainly lies in the mutual confrontation between “value ethics” and “procedure ethics”. “Modern individuals are more and more lonely, more and more impotent, more and more schizophrenia, less and less moral confident; the root cause of which is that individuals have lost the ethical shelter of ‘community’, and his nature, conscience, moral impulse are isolated in the ‘procedural ethics’.” [3] Thus, if the self-expression of writers in the 1980s and individual writing in the 1990s were all about breaking away from political ideology, then modern writers are most concerned with defending their positions in an anti-secular style and identifying with the group values of society.

Correspondingly, literary criticism needs to discuss the moral issues in the text from the perspective of abstract human value and illustrate the meaning of “individualization” by referring to the “critical spirit and cultural responsibility of intellectuals” proposed by Wang Jiaxin in the 1990s [4], which is also the direction and content of the practice of literary ethical criticism.

2. The Roots of Literary Criticism Crisis

The western world has discussed moral issues in literary texts since the nineteenth century. “Many writers and works in the 19th century described the various moral issues that existed in the society as much as possible. By expressing the moral themes of that time and evaluating the moral behaviors of society and individuals, they attempted to put forward their moral ideals.” [5] Literary critics in the 19th century also actively explored the ethical and moral themes in the text, showing great concern for people’s emotions and social issues. However, nowadays, there seems to be a tendency to be indifferent to ethics and morality in both Chinese and Western literary works. It looks as if the writers always struggle with an illusory sense, which arises the common question “why the age of the masters is getting farther away from us?” The answer given by Hippolyte Adolphe Taine, who is a famous French literary critic, philosopher, and historian, is that “a spontaneous, interactive and infectious enthusiasm promotes artistic creation in all aspects, which fully lifts the national spirit and helps to create an ideal model”, “the artistic works can be universally recognized by the society.” [6] Literary ethical criticism has an important mission to appreciate and evaluate whether the current literary works meet the value standards of that time. However, the current literary ethical criticism has not yet become the mainstream of criticism, and other literary criticisms only occasionally analyze ethical issues instead of exploring the essence of the problem.

The root cause of the ethical crisis of literary criticism lies in two wrong prejudices. The first one is the mistaken belief that literary ethical criticism is a personally subjective evaluation lacking the universality of ethical judgments. In particular, literary creations that are flooded by the concepts of “subversion” and “uncertainty” in the postmodern culture have shown the characteristics of pluralism. It seems that traditional values have been deconstructed subversively, which denies the necessary existence of literary ethical criticism. The second is the wrongly underestimated function of literary ethical criticism. It is believed that the objective function of value reconstruction is deficient. In fact, it seems that the current literary works have abandoned order and value, but at the same time, a new order has been established. “The new order is actually based on a stricter logical system. For those novels and dramas with reversed time and space, what they give up is only the superficial order of things, but what they want to express is the internal or subjective order.” [7] Although the novel depicts the glitzy and spiritual degeneration of current life, it also implies the author’s ideal of “salvation” for the purpose of pursuing a better life. In other words, those works can make people think about the life predicaments, and it can also evoke reflections on the universal issue of “how human beings should live”. Literary ethical criticism can analyze the ethical issues reflected in the literary works from different levels, such as the ethical feelings of the author, the ethical judgments of the characters’ behaviors and the ethical implications of intentions, so as to clarify an ethical theme of “the character image in the work—the ethical values— the essence of existence” to make a reconstruction of the ethical values.

3. The Utility of Literary Criticism

“To wholly understand Chinese literature in the 20th century, it is necessary to find a holistic theoretical framework, which works as a thread running from the beginning to the end.” [8] Literary ethical criticism reaffirms the creative concept of “literature is humanity” and enriches the connotation of the “humanistic spirit” conveyed through literature. It also extends the concern from humanity to the pursuit of value, as well as from the significance of personal existence to that of national existence, which embodies the core feature of “enhancing the moral judgment of the humanistic spirit”. As for the critics engaged with literary ethical criticism, it is necessary to get rid of the influence and restraint of political ideology in the process of moral judgment. Making reasonable and objective value judgments enables us to better explore the meaning of literary creation and guide the direction of literary creation. “The human perspective is our basic criterion for evaluating the quality of literary works, which is also an important basis for us to judge various creative methods. As long as a writer presents the true personality of a person, he reveals the connections with reality successfully." [9] Therefore, the significance of literary ethical criticism lies in the ability to evaluate literary works with a relatively universal and objective standard. At the same time, it can also promote the spiritual resonance of readers in different eras and different cultural backgrounds through the ethical theme of "goodness and beauty". It not only guides people to inherit the tradition but also cultivates people's moral consciousness by establishing public moral norms, so as to promote the progress of the times.

In most cases, literary criticism generates mostly subjective comments, while literary ethical criticism is a combination of subjective and objective comments. It performs the subject's judgment and is under the restraints of the general ethical spirit as well. It will become an "objective criterion" for resolving differences in values and judging the behaviors of characters. Literary ethical criticism is fair and objective, and its significance is to provide a guiding direction for literary creation, because all fair criticism will not only find the function of essential principles in literature but also will certainly command a view of literature itself. In the era of diversified values, the conundrum of literary creation lies in how to promote individuality while shaping the humanistic spirit. Literary ethical criticism indicates that the basis of literary creation includes all aspects of life. However, the current literary creation is mainly embodied in two kinds of consciousness: one is an urgent vision for a better life in the future, and the other is the indescribable horror and disappointment about the present. All that historical consciousness is influenced by the characteristics of the times, and they are also the reflection of people's self-consciousness. The crux of modern literature lies in the dialectical relationship between "existence" and "consciousness", as well as the discreet choice of individuality and sociality. Literary criticism cannot simply classify the author, the self, and society nor connect them sedulously. From an ethical perspective, the goal of literary creation and literary criticism is to shape the spiritual character of modern people. The purpose of literary ethical criticism is to find a balance between self-identification and group identification in the process of getting out of the identification crisis. Intellectuals should respect differences but also form a community and basic consensus.[10] That is, critics of literary ethics need to express themselves from the standpoint of group consensus on values; at the same time, they should also spread universal humanistic ideals.

4. Moral Concerns in Literary Criticism

"While ethical studies often serve certain moral values and evaluate various moral phenomena, in reality, ethical literary criticism examines literature with ethical and moral concerns and provides a historical and dialectical interpretation." [18] Unlike moral judgment in the traditional sense, ethical literary criticism does not limit itself to a simple interpretation of whether a certain behavior in a text is moral or not. Moreover, it enlightens a new direction for the interpretation of modern literature from a broad perspective. Firstly, ethical literary criticism affirms the subjectivity of authors and readers and observes history and culture in a comprehensive view. By combining different contexts, it provides a dialectical analysis of moral behavior in the text. Secondly, ethical literary criticism points out that literature should be free from political intention rather than be reduced to a single tool to serve politics. For readers, they should rise to the spiritual height of culture and philosophy through life realities to ponder over nature, society, and life. "It is through this expansion that the self begins to live universally with its own individuality."[19] And in this combination of individuality and universality, personal symbols and traditional symbols create an "aesthetic synergy". Furthermore, ethical literary criticism also focuses on writers' character and talent so as to indicate humanism in their thoughts. The ideal goal of ethical literary criticism is to awaken people's consciousness of universal relationships and to promote their common pursuit of light and love in life, harmony and beauty in the universe, and civilization and truth in the soul.

Literature is an expression of human moral spirit: "from the sixteenth century onwards, there was no break in the continuity of the chain thanks to which, as generation followed generation, link after link passed on the consciousness of the epoch from one generation to another."[11] One of the important functions of literary works is the transmission of ideas as well as spiritual inspiration. As for the universal ethical spirit, ethical literary criticism goes beyond individual moral self-discipline and aims to improve people's public moral consciousness from the level of public life. Under the indirect influence of moral relevance, people can consciously restrain their behavior and engage themselves in moral self-discipline. "Morality's fundamental importance stems not from its 'standing above' everything else but rather from the fact that it literally surrounds everything else, lies underneath everything else, and is continually embedded in everything else." [12] Ethical literary criticism highlights individuality but at the same time emphasizes the connection between self and society, which links individuality to universality. Textual ethics explores the individual ethical existence which refers to the way individuals satisfy their internality and integrity in order to promote their maximum development. Ethical existence serves as the value coordinate for individual and national development and reflects the ethical paradigm of cultural values.

5. Conclusion

In sum, literary creation instructed by ethical literary criticism will pay more attention to people's individual existence in real life and their collective existence in public life, which will become a significant trend in literary creation. In other words, the goal of Chinese literature creation is to promote the humanistic spirit and enhance civic literacy. In this sense, the thoughts and emotions of these creations should "reflect people's situation" and the effect of them should "touch the hearts". In a broad sense, "contemporary Chinese literature should express its own unique literary experience and embody the common traits of world literature".[13] Both literary creation and literary criticism should make use of ethical value to explore the value concern in works and give rational criticism on social and moral issues, with the goal to boost people's "ethical existence".

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Implementing Formative Assessment: An Experience Learned from Asian Classrooms

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Abstract: Formative assessment has recently become a preferred assessment strategy in educational institutions worldwide. However, it is not easy to achieve this practice in Asian classrooms because there are disparities between the socio-cultural context and the principles of formative assessment practices. This one-semester study aimed to uncover the complexities of the implementation process of formative assessment in Vietnamese higher education classrooms. Participants were two lecturers and 250 students from two college classes in Vietnam. The results showed that there were various structural and cultural obstacles, especially existing rules and norms in Vietnamese classrooms that hindered the implementation of formative assessment practices. To suite the local socio-cultural context, the initiative needed to be modified to become hybrid and transformative types of practices.

Keywords: Formative assessment, higher education classroom, socio-cultural context, Vietnam

1. Introduction

Although the term 'formative assessment' is widely used, there is still ongoing discussion about this term in the literature. Black and Wiliam (1998) note the term 'formative assessment' does not have a tightly defined and widely accepted meaning. Black et al. (2003) proposed that the term 'formative' should be understood as the functions that assessment serves in supporting students' learning and as evidence used to adapt teaching to meet learning needs. For this purpose, recently a potentially better term used to describe formative assessment has emerged, 'Assessment for Learning' (Gardner 2006, p. 2). Black et al. (2003) acknowledge the broad meaning of formative assessment but note that there are four aspects of formative assessment that were implemented successfully in classrooms and led to learning gains. These aspects were questioning, feedback, peer and self-assessment and the formative use of summative tests. Added to this is the idea that students are now millennials who are highly adept in their use of emerging technologies and expect to be able to use them as seamlessness in their learning environments as they do in their daily lives. Even further to this notion that there are political and economic pressures to ensure that the technology that has been provided to schools and teachers be used to justify its cost and can produce improved student outcomes.

A large volume of research has documented benefits of these four formative assessment aspects. A meta-analysis of research into classroom assessment practices conducted by Black and Wiliam (1998) found that formative assessment is effective in virtually all educational settings: content areas, knowledge and skill types, and levels of education. A similar recent large-scale meta-analysis by Hattie (1999) revealed that feedback to students was the single most influential aspect of classroom teaching. The dissemination of these findings led to an emphasis on formative assessment and inspired changes to classroom practice which spread beyond Anglophone contexts to Asia-Pacific regions (Klenowski, 2009; Ross, 2008).

Regarding assessment, the government recognized that the conventional summative assessment needed to be reformed and more emphasis on assessment for learning was required from teachers (Alexander 2001; Duong, Nguyen, & Griffin 2011; Moss, Girard, & Haniford 2006; Watkins & Biggs, 2001). Therefore, Vietnamese educators and policymakers are calling for alternative formative assessment practices like portfolios, self-assessment, peer-assessment, and weekly reporting (Duong, Nguyen, & Griffin, 2011). The strong call for the utilization of these formative assessment practices has come about because the summative assessment focused on the reproduction of factual and procedural knowledge has predominated (Alexander, 2001; Moss, Girard, & Haniford, 2006; Watkins & Biggs, 2001). Summative assessment of low-level learning hinders the development of problem-solving capacities, communicative skills and critical thinking strategies that are regarded as essential for success in today's diverse and data-driven globalized environment. However, various researchers have warned that the issue of intended formative assessment policy and its enactment is particularly complex when the policy is borrowed from a sociocultural context which differs from that in which it is being implemented (e.g., Carless, 2011; Zhang & Hu, 2010). Pham (2014) and Phuong-Mai (2008) have found that imported educational practices often face structural and cultural barriers in the local context. The following section will discuss barriers that potentially hinder the implementation of formative assessment in the Vietnamese socio-cultural context.

2. Factors that Potentially Impact Formative Assessment

2.1 Local structural factors that potentially impact formative assessment

The most important structural factor that potentially hinders formative assessment practices in Vietnamese classrooms is probably the dominance of the end-of-year summative assessment. Almost all Asian education systems still use end-of-school examinations (summative assessment) as the primary tool to select students for elite schools and a limited number of university places (Brown et al., 2009). Kennedy et al. (2008) claim that teachers within Confucian heritage societies appear to see frequent summative assessment and practice for formal examinations as a means of motivating effort and as a means of guiding instruction. This also means that that no matter what types of assessment practices are employed in class, the predominant forms of learning, teaching and assessment practices must support and prepare students to succeed in summative end-of-semester exams. Falchikov (2005), Samuelowicz and Bain (2002) and Sfard (1998) claim that summative assessment in Asian classrooms is perceived as a form of knowledge control, where the outcome of learning is seen as acquired factual knowledge or skills that can either be correct or incorrect. This view is consistent with a structure-and-process based curriculum where there is a strong focus on content (Carraccio et al., 2002).

Besides, Chen et al. (2012) also claim that an important distinction in the function of assessment in Confucian Heritage Culture contexts is that a good person is one who scores well because examination results reflect the quality and worth of the individual. Gow and Kember (1990) add that Asian people usually measure one's success depending on his achievements, a teacher is called good if he/she has many students who obtain high scores on public exams. This leads to teachers tending to advocate teaching and assessment practices that could enable students to perform well on the summative assessment and disregarding how they improve during the learning process. As such, it is clear that this assessment tradition tends to overemphasize the results that students achieve on the end-of-school assessment rather than the progress that they may make during the semester. Therefore, to sustain formative assessment practices that mainly aim to provide feedback to students so that they can improve on the learning process (as defined by Black and Wiliam) in this culture, it is very likely that formative assessment practices need to be modified in a manner that could help students not only make progress but also perform well on the summative assessment.

2.2 Cultural factors that potentially impact formative assessment

Cultural barriers hindering formative assessment are also foreseen. Researchers have claimed that there should not be a stereotype about different cultures in the East and West because there are individual differences and much diversity within each cultural group; however, at the same time each cultural group has a set of certain shared views and social practices The research has not yet reached the equilibrium that is needed to be able to assess more critically what it is that technology is doing in real terms. The somewhat polarised discussion in the research literature about the potentials, or the pitfalls, of technology seems to be holding us back from critically assessing and understanding the impacts of technologies on learning for students and educators for their teaching. This has led to the development of some intense curiosity and questioning of technology in education. (Littlewood, 1999). Therefore, although differences do exist within cultural groups, they are generally referred to as cultural tendencies (Kubota, 2001). Vietnam is strongly influenced by the tenets of Confucianism and is referred to as having a Confucian Heritage Culture (Phuong-Mai, 2008; Pham, 2014); whereas formative assessment is developed based on Western cultural values that have cultural tendencies different from Confucian Heritage Culture. Therefore, formative assessment practices potentially face cultural disparities in Vietnamese classrooms. One of the most important local cultural obstacles is teaching beliefs and perceptions.

For Confucius, a good example of teachers must be shaped in the maxim that "to give students a bowl of water, the teacher must have a full bucket of water to dispense" (Hu, 1944, p. 98). Therefore, teachers need to select knowledge from authoritative sources such as books and classics as they are considered the main sources enriching students' knowledge. Researchers have claimed that Confucian Heritage Culture teachers are very familiar with the concept that teaching is not on how students can create and construct knowledge, but on how extant authoritative knowledge can be transmitted and internalized in a most effective and efficient way (Brick, 1991; Jin & Cortazzi, 1995).

Hofstede and Hofstede (2005) also claim that Vietnam is one of the Confucian Heritage Culture nations scoring high on the Power Distance Index (Malaysia scores highest with 104; China: 80; Singapore: 74; Vietnam: 70; Hong Kong: 68; Korea: 60; Taiwan: 58 and Japan: 54). It is generally asserted that nations with such high scores on power distance place greater emphasis on hierarchical relationships. Differing from teacher-equal-student teachings of Socrates, who is thought to be the father of Western philosophy, Confucian teachings instruct learners to respect and obey authority figures (Confucius, 1947) – in the educational realm it means that students should obey and listen to teachers. A teacher is considered to be a guru who is supposed to satisfy learners in the search for the truth (in knowledge) and virtues (in life) (Phuong-Mai, 2008). The exclusive roles of the teacher in delivering knowledge create a situation in which Vietnamese students are not familiar with questioning, evaluating and generating knowledge. They accept teachers as the definitive knowledge source and adopt themselves as passive listeners in the class. They believe that truth is not found primarily in the self, but in exemplars [teachers] (Confucius, 1947). These assumptions about the nature of teaching and learning have been deeply imbedded in the mentality of both Vietnamese teachers and students and they are not easily removed. They are barriers that prevent Vietnamese teachers and students from accepting any pedagogical practice that does not give the teacher opportunity to judge the student's performance. This cultural characteristic potentially challenges formative assessment activities like self-assessment and peer-assessment as they tend to deemphasize the role of the teacher in the evaluation and learning process.

Pham (2014) claims that to overcome local structural and cultural barriers, innovation implementers need to create hybrid practices that could create alignments between the reforms and the local socio-cultural context. The present study aims to examine how the participating teachers reacted to formative assessment practices and how they created these alignments. The study was guided by the following questions. 1. How did the teachers transform formative assessment in the Vietnamese context? 2. What were the changes in student beliefs when they implemented the transformed formative assessment?

3. Methodology

3.1 Participants

In the present study, the participants were two teachers, one from a history class and one from a Law class and 250 students from two of these teachers' classes. The History class had 100 students. The Law class had 150 students. The History teacher had nine years of teaching experience and the Law teacher had seven years of teaching experience. The researchers participated in the study as the main investigator and an adviser. The researcher helped the teachers design formative assessment activities for each lesson and develop strategies to solve problems that emerged in the class.

3.2 Procedures

All lessons were designed in the seminar format. During the first section of each class the students were asked to work in small groups to comprehend the readings. They were encouraged to gauge each other's understanding by formulating as many clear questions as possible, including both questions in the text and questions that were related to the text but were not discussed in it. The teachers were also involved in reinforcing the students' understanding by challenging them with difficult questions. Formative assessment consisted of a range of tools including formal and informal tools, ranging from self-assessment, peer assessment, oral feedback from teachers and peers, and informal classroom conversations. These tools primarily aimed to provide feedback to the students so that they could evaluate their merits and weaknesses, then work out the most effective learning strategy for themselves in the future. The section below describes how these main tools were applied.

3.2.1 Self-evaluation

After each group discussion on the readings, the students were asked to evaluate their own preparation and performance. Initially, it was planned that the students also needed to evaluate their contributions to their group project as their mid-term assessment. Self-assessment was applied because it is fundamental to all aspects of learning (Boud, 1990). In this study, self-assessment aimed to provide the students with reflective skills and train them to evaluate their own merits and shortcomings and how to strengthen their weaknesses.

3.2.2 Peer-assessment

This activity was planned to be applied when the students evaluated each other's effort and capacities in formulating questions to comprehend the readings and evaluate each other's contributions on the mid-term group project. Peer-assessment was incorporated in this study because findings of a review conducted by Topping (1998) showed that peer-assessment brought about students' learning gains including both test performance and skill performance.

3.2.3 The teachers' feedback-giving

Teachers were asked to give oral and immediate feedback as much as they could. This was because, as Price, Handley and Millar (2011) claim, dialogue is a more effective tool as it provides better opportunities for feedback to become reconstructed, avoiding the misconceptions that may occur when information is only transmitted in one direction from tutor to student. Regarding assessment tasks, at the start of the study the researchers suggested two pieces of assessment. The first assessment was group projects. The students were asked to work in small groups on a project that could be a case study and an issue covered in the course. This type of assessment allowed the students to do both self-assessment (to evaluate their own contributions) and peer-assessment (to evaluate each other's contributions). Black et al. (2003) found these practices helped bring about students' learning gains. The second assessment could be either individual end-of-semester essays or exam papers depending on the teachers' preference.

3.3 Data collection

A combination of structured interviews and informal discussions and structured lesson observations was used. The employment of these data collection methods aimed to reveal how the teachers adopted and adapted formative assessment practices. In general, interviews were conducted with the participating teachers to investigate their perceptions toward the strategies deployed and how to improve them. The main function of observations was to examine how the teachers interacted with their students and the language used by the teachers in speaking to those individuals.

3.4 Data analysis

The procedures to analyse the data followed those applied in Asghar's study (2013). In brief, the researcher read and re-read the interview transcripts and observation forms. The researcher then focused on asking questions of the data relating to what tools were used as formative assessment practices, and what rules, norms and historical perspectives of the activity systems were in place influencing how those tools were used. Additionally, the data were explored by questioning how the students were expected to participate and how the teachers attempted to adjust mediating artefacts and tools to fit their teaching practices and students' learning ability and to enable the students to achieve the expected learning outcomes. To ensure the validity and reliability of the results, the researcher and a research assistant held regular discussions and helped check their joint analysis. Whenever the analysis was conducted separately, they compared the findings to check the internal agreement rate. The result reported that the agreement rate on findings of all data sources varied from 85% to 100%.

4. Results

The following sections document how the two teachers enacted formative assessment practices in their classrooms. The researcher will focus on exploring how cultural tendencies and the testing culture in Vietnam influenced the implementation of the formative assessment practices.

4.1 Feedback

The interviews with the two teachers disclosed that they were keen on providing individual feedback to the students but there were obstacles preventing them. They both highlighted that the class size was a big obstacle preventing them from providing detailed feedback to individual students. Their comments regarding this were:

> To be honest, I have very limited opportunity to talk to individual students about their learning. Imagine I have more than one hundred students in the class, so talking to individuals is impossible. The only verbal feedback I can provide my students in the class is in a group on their group project.

Worse, the teachers also complained about time limit to provide feedback on the students' written essays.

> I would love to clarify more points in their essays. However, I am not paid to mark these essays and I

> have many things to prepare for classes. The university should have a better policy to employ sessional staff to mark students' essays.

Besides, the contents of the lessons were also perceived as a problem hindering the initiative. The Law teacher commented: “I do not have much time to discuss with the students all that I want to share. I need to complete the lessons as planned by the university.”

In addition to these interview findings, the observation results disclosed that the two teachers were very busy with answering individual students’ questions and solving group conflicts. Many students raised their hand to ask the teachers for help. To respond to all students’ inquiries, the teachers often responded to each student very abruptly and quickly by telling them facts or directions but not discussing or challenging them with complicated questions. The teachers rarely provided feedback or discussed weaknesses of individual students.

These results clearly indicated that feedback, the most important component of formative assessment, seemed hard to be implemented due to several structural obstacles in Vietnamese classrooms.

4.2 The influence of the traditional examination and learning culture

As the unit progressed the History teacher negotiated with the researcher to change the first assessment – initially planned as a group project – to weekly individual multiple-choice tests. She explained that multiple-choice tests would enable her to more effectively test what she perceived to be important for the students. However, the researcher expressed concern that the multiple-choice tests would not create opportunities for the students to exchange feedback and assess each other's contribution as the group project might do. The teacher reassured the researcher by saying that she could adapt the multiple-choice tests into a formative assessment practice. The procedure she used was as follows: on the day when the multiple-choice tests were returned, the students were grouped in small groups to discuss their choices. The students took turns to explain why they chose their answers. If group members chose different answers for the same question, they needed to explain the reason. The whole group then discussed which answer sounded better. If they could not agree with each other, they then approached the teacher for help. After all groups finished their discussion, the teacher asked those groups that had disagreements to explain their choices. The class then became a dialogue between the students and the teacher characterised by lively exchange and feedback.

When the teacher was interviewed, she explained that there were two reasons why she wanted to implement weekly individual multiple-choice tests. The first was that she received some complaints from the students in the first few weeks that their peers' evaluations were not fair, and they did not learn much from their peers' feedback. The students wanted to have the teacher's judgment on what they did as well. The teacher then wanted to implement a type of assessment that allowed not only peers, but also her to judge the students’ work and weekly multiple-choice tests met this requirement. The teacher explained:

> I understand the advantages of a group project assessment, but the students seem to have many issues that they want to clarify so that they can incorporate in following assessment tasks. They do not judge each other completely in terms of clarifying these points. You see when the students discuss their choices in the class, it is very clear to everyone, and I can correct if they explain wrongly.

The teacher further acknowledged that creating opportunities for the students to discuss their choices and challenge each other to explain their choices was really helpful. From her point of view, to explain their choices, the students needed to understand the point deeply and systematically. The teacher perceived this hybrid practice was innovative because it both helped the students improve their knowledge during the learning process and ensured that the students understood all ‘knowledge points’ correctly so that they could perform on the final summative assessment well. Interestingly, the teacher was indeed interested in and cared about the students making progress. She said: “As a teacher, I am really happy to see how the discussions help the students to clarify their thought. This on-going improvement is truly meaningful to me.”

The second reason why the teacher wanted to use weekly multiple-choice tests was that she wanted to see how much content knowledge that the students could remember and understand each week. She commented that she did not encourage the students to memorize the curriculum. However, she emphasized that a large portion of the final assessment required the students to demonstrate their understanding of the conceptual knowledge taught in the unit. If she did not test to check how the students understood these 'knowledge points', she was unsure how the students could perform on the final assignment. She explained: “I cannot change the final assessment. You can see the rubric consists of two out of five criteria that are about conceptual knowledge.

The multiple-choice tests allow me to check how much they understand those things."

By contrast, in the Law class the teacher emphasized that it was important for law students to develop their effective communication, pursuing, reasoning, critical and confidence skills. One method the teacher suggested would effectively help train the students with these soft skills was oral presentation. Therefore, instead of letting the students to work on the readings in small groups in the first half of each lesson, before each class the teacher asked the students to form their group to work on the reading. Then, in the class the students participated in a so-called 'interviewer-interviewee game'. This game was: one group was chosen as the interviewee group and the other groups were the interviewer groups. The interviewer groups were responsible for asking as many questions as possible and the members in the interviewee group took turns to answer these questions. If someone got stuck, the other members could jump in to help. To encourage the groups to ask as many questions as possible and for them to be as hard as possible, the teacher suggested that she give scores to each group based on the number and quality of the questions that each group made. The teacher discussed with the researcher that she wanted to use the scores given to each group during this game as the first assessment. So, there was no need to use the joint project as the mid-term test as planned. As such, the interviewer-interviewee game emerged as a new and useful tool to promote the students' learning and evaluate the groups.

Like the History class, the Law teacher explained in the interview that she was happy with oral presentations because she could judge how the students were progressing and could make timely intervention to help clarify any students' misunderstanding. She expressed point of view about this as below:

> You can see sometimes the students could not see the hidden message in the text. I am not sure whether they could help each other to pick those hidden points. If we, as teachers, scaffold their logic of thinking, they could understand those points better.

The teacher also expressed her efforts to meet the goals of recent educational reforms as following: "The University is calling for improvement the students' communication skills. These presentations help them improve this area a lot."

5. Discussion and Conclusion

Webb and Jones (2009) note that the general object of teachers' work is the students and their learning. The explicit goal of this study (to increase formative assessment in two Vietnamese classrooms) was based on the rationale that students needed to learn higher-order and critical thinking skills, in-depth conceptual understanding, real-world problem-solving abilities, and communication skills (Darling-Hammond, & Falk, 1997; Newmann, & Associates, 1996; Shepard, 2000). Thus, it was expected that introducing formative assessment would create opportunities for the participants to develop such skills more effectively. The object cannot be assumed, however, to be understood in a similar fashion by each of the participants. The researcher had the goal of assisting the teachers to adopt formative assessment practices. The teachers agreed to participate with the researcher, but their goals were more multileveled and complex. They had to also fulfill their current responsibilities to students and meet the requirements of their superiors and expectations of colleagues. The students' goals are also equally complex and dynamic and depend partly on personal circumstances, their purposes for studying, their motivations, and experiences during the courses.

Engestrom (1999) claims that when some activity or practice (e.g., formative assessment in the present study) is brought into a new context or goes international, the implementation process often faces challenges created by cultural diversity, different traditions, or perspectives. To make the reform go smoothly, local implementers often have to take into consideration a wide of range of influential factors at various levels (e.g., policy from the top, rules and norms of the existing system, traditions and perspectives of local implementers and local institutional constraints) in order to subsequently develop new conceptual tools to understand multiple perspectives and design a new form of the practice to fit into the new socio-cultural context. Perrenoud (1998) emphasizes this idea when arguing that on the reformative process there is a need for ongoing regulation and flexibility. These warnings were well reflected in the present study when it showed that when formative assessment practices were brought to Vietnamese classrooms, there were many tensions and contradictions emerging, leading to the fact that the participating teachers and the researcher had to negotiate to change the format of initiatives in a manner that both met the requirement of the reform and aligned with the local teaching and learning culture. The hybrid formative assessment practices created by the teachers in the present study were necessitated as they met key requirements of the innovation and reassured the teachers and students.

The trend for policy makers in Asian countries to adopt and valorise Western practices remains strong even though many East Asian countries outperform on the Programme for International Student Assessment and other international comparisons of student achievement tests. Recently, Vietnam is showing marked improvement in overall ranking. Globalization ensures that information on Western teaching and learning practices is readily available. To modernize their education systems quickly and avoid the painfully long research stage, educators in these countries are drawn to adopt Western practices without considering their appropriateness for either the different instructional contexts or the impact of these practices on their students' learning. This paper represents one attempt to address this shortfall. As our study demonstrates, the uptake of Western practices requires cultural translation and local adaptation if it is to become an effective part of the education system in Asian societies.

Despite the contributions, the study has limitations to highlight. First, the participating teachers and students had limited professional development in implementing formative assessment practices before entering the intervention. Second, the issue of generalization from this study to other samples and contexts needs to be addressed. For instance, participants were recruited from these classes in a social science university in the south of Vietnam, so the results obtained may not be relevant to teachers and students from different disciplines at other universities. Furthermore, the findings may only be relevant to the southern part of Vietnam rather than all the other parts of the country. This is because Vietnam is characterized by cultural differences between the South, Central and North. These three parts have distinctive cultural characteristics including daily practices, beliefs, languages, and ways of working. More studies are required to investigate the extent that findings of this study can be usefully applied in a range of contexts.

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On the Integrated Training Mode of Practice Teaching Platform for English Postgraduates of Subject Teaching

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Abstract: The purpose of the full-time Master of Education postgraduate training aims at cultivating high-quality English teachers in middle schools and secondary vocational and technical schools. To achieve the training goal, it is especially important to choose an appropriate teaching and practical teaching mode. This paper reports a training mode of integrated practice teaching platform inside and outside the Jilin International Studies University, namely the teaching mode of "experience--theory promotion--practice--reflection", which runs through the whole process of education master training. It is hoped that the study of this mode can provide a reference for other colleges or universities.

Keywords: English Subject teaching, Master of Education, postgraduate cultivation, practice teaching mode

1. Introduction

In order to implement the spirit of *Opinions on Further Promoting the Reform of Professional Degree Postgraduate Training Mode* (JY No.3, 2013) and other documents issued by the Ministry of Education of China and the Ministry of Human Resources and Social Security of China, further standardize the practical teaching of full-time professional degree postgraduate of Master of Education, promote the effective development of practical teaching, and improve the quality of personnel training, Education Commission of China has formulated the objectives and tasks on the practice teaching of full-time Master of Education (English) professional degree postgraduates (December, 2017) as follows: to promote students comprehensively to understand the reality of education and teaching management in primary and secondary schools, kindergartens and secondary vocational and technical schools, the basic trend of education reform, and the production process and post ability needs of enterprises; Learn the teaching methods and experience of excellent teachers, master the basic teaching methods and skills, and improve the basic quality of education and teaching work; Learn the basic working methods and experience of the model headteacher, and develop the basic quality and ability to engage in the work of the headteachers; Understand the basic law of basic education and secondary vocational and technical education teaching, cultivate the ability to find problems, solve problems and educational innovation.

In view of the above requirements, the College of English of Jilin International Studies University has been constantly exploring and practicing in the training process of professional degree postgraduates in the field of subject teaching English. Combined with the actual situation of the university, it has constructed an integrated training mode of practice teaching platform inside and outside the school, that is, adopting the teaching method of "experience - theory promotion - practice - reflection", which integrates practice teaching, reflection, practice teaching and practice teaching theory promotion runs through the whole process of education master training.

2. Practice Teaching Inside University

To better cooperate with the training of graduate students, Jilin International Studies University and the college of English increase the investment of human, material, and financial resources in practical teaching, equipped with a certain number of modern teaching facilities to provide the necessary hardware support for practical teaching. Such as Micro classrooms, flipped classrooms, multimedia classrooms, etc. In addition, seminar rooms in the library are equipped with advanced and complete facilities, which have become the preferred place for graduate students to practice on campus. The college of English gives full play to the advantages of various resources on campus, and reasonably designs the content of practical teaching for postgraduates.

2.1 Integration of practice teaching and teaching

According to the training objectives, course nature and teaching content, teachers choose appropriate teaching methods, pay attention to practice and reflection in teaching, and adopt case teaching, simulation teaching and group cooperative learning. They focus on the combination of in-class and extracurricular learning and encourage students' active learning and innovative learning; They make full use of the Internet and other modern teaching technology means to carry out online learning and offline learning hybrid teaching mode. As a part of the credit assessment, students attach great importance to it. They begin to contact with professional practice as soon as they enter the university, which improves students' professional practice ability.

2.2. Strengthening the cultivation of graduate students' autonomous learning ability under the guidance of tutors

As an important part of postgraduate talent training, the college requires students to read the classic literature of professional direction independently, and complete at least two reading reports with no less than 3000 words every semester. The college regularly carries out reading report meetings to share students' reading experience in the process of learning and evaluate excellent graduate readers as one of the bases for scholarship evaluation. In this way, it greatly promotes the enthusiasm of students' reading and makes full preparation for the proposal of their theses in the future.

2.3. Strengthening academic activities on postgraduates' research level

The college requires each graduate student to attend at least 10 academic reports (unlimited topics) and make records of the reports (time, place, speaker, and core content). At the university and college levels, some professionals are regularly invited to the university to provide guidance to graduate tutors. At that time, graduate students are required to participate in the guidance and training process. Graduate students must take part in the academic activities, such as, master thesis proposal and graduation defense etc. The first-year students need to take part in the second-year students' master thesis proposal and thesis defense to provide some reference for their future research.

2.4 Skills training of teachers inside university

To better achieve the goal of students training, the college uses campus training to strengthen students' teaching skills for middle school students and lay a good foundation for educational practice. The specific content is two rounds of trial teaching activities in graduate school. The time of the activity is after the completion of the education internship, students choose trial materials from middle school textbooks for teaching design, and then tutors evaluate the results according to the trial lecture.

2.4.1 The first round: students' self-introduction and lecture presentation, tutors' comments, and guidance

Students are required to prepare 2-3 minutes' self-introduction for a job interview and 5-8 minutes' lecture presentation and record them into video files, which are submitted to their tutors for review together with the paper materials of lecture presentation, and the tutors will revise and comment on them.

2.4.2 The second round: students' trial lecture (assisted by teaching software and combined with blackboard teaching), tutors' comments and guidance

Students are required to prepare for 10 minutes of simulation teaching. They are required to use PPT and other teaching software, combined with blackboard writing to conduct on-site simulation teaching, and recorded into video files, together with teaching plans submitted to their tutors for review. After peers' evaluation, the tutor will revise and comment one by one. The key points of the review are teaching style, language expression, knowledge explanation, key and difficult points, teaching methods, classroom organization, blackboard writing design, etc. Students can learn the skills of teaching and lay a solid foundation for their teaching.

After the campus trial session, the College of English holds a postgraduate lecture competition to assess the training level of students' teaching skills and show the results of educational probation. It is also one of the ways to select the contestants in the National Normal University English Skills Competition and the national masters' teaching skills competition of the Education Commission.

3. Practice Teaching Outside University

According to the regulations of the Education Commission (2017), practical teaching can take many forms, such as education probation, education practice, education research and learning, enterprise practice, micro-teaching, education survey, industry enterprise survey, lesson analysis, class, and classroom management practice, etc.; In terms of time arrangement, centralized practice and segmented practice can be adopted. In view of the above requirements, College of English has formulated a scientific off campus practice mode in combination with the talent training objectives, namely the integration mode of education probation, education practice , education research and learning. Specifically speaking, after school training, students go to the cooperative education base to complete two weeks of educational internship activities, and then go back to the school to continue learning, and then go to the relevant schools for 18 weeks of educational internship. They make full use of the school training and educational internship experience to cultivate and train students' abilities. Finally, the students reflect and summarize the educational practice, test the indicators they need to achieve, and finally become qualified graduates and put into teaching and other posts.

3.1. Educational probation

The purpose of educational probation is to help students understand the actual process of school education and teaching, learn the morality and teaching methods of excellent teachers, and cultivate their interest in education.

The educational probation for students in the subject teaching English field is arranged in the middle of the first semester in the first year, which lasts for two weeks. According to the plan, students were sent to several middle schools in Changchun where the school cooperative education base is located. According to the requirements of the colleges' educational internship, students complete the tasks specified in the process of the internship, such as visiting the school, observing the schools' educational and teaching activities, listening to lectures, participating in special reports or lectures of educational management experts and famous teachers, participating in theme class meetings, participating in municipal or district level teaching and research activities, experiencing and feeling the teachers' work and school life.

Through educational probation activities, students can have a preliminary understanding of English teaching and other related work in middle schools and have a good pertinence and incentive effect on various courses they study in school so as to make students' learning objectives clearer and learning effect better.

3.2.Educational practice

The purpose of educational practice is to help students understand the actual process of school education and teaching, learn the ethics and teaching methods of excellent teachers, think about the scientific and humanistic nature of education, pay attention to students' learning process, understand the ways and methods of educational evaluation, and purposefully carry out the collection and analysis of relevant cases.

The student education internship in the subject teaching English field is set up in the third semester for 18 weeks. In order to better complete the education practice, the college has carried out the preparation work before the practice. The college and the schools in practice base work together to do the mobilization work before entering the practice base, listen to the introduction of the person in charge of the practice base and the tutor of the practice base, and help students understand the current situation of the base and the teaching of the subject courses; They help students to study teaching materials, prepare lessons, write teaching plans, and trial lectures. Students are encouraged to participate in the development and cultivation of subject teaching development courses. The college requires students to observe the demonstration class and theme class meeting and be familiar with the basic requirements of the teachers' work. Through mobilization, the purpose of practice, the effect to be achieved and the matters needing attention in practice, the students can participate in the educational practice with full confidence, and the effect of practice is better. Students carry out teaching practice under the guidance of tutors in the practice base tutors in the university.

First, students observe the classes, write the teaching plan, and try to teach carefully. They teach new courses independently. Before teaching, it needs to be approved by the tutor of the practice base. After class, they evaluate the classes seriously and collectively participate in tutoring, homework correction, examination and marking papers. They also actively participate in the teaching and research activities of the practice base and students' comprehensive activities.

Second, students actively participate in headteachers' practical activities and collective activities in order to understand the students in middle schools and their class cultures and be familiar with the work practice of the headteachers. They participate in collective or individual student education, such as home visits and class cadre work. They collect and analyze relevant cases carefully and organize class collective activities independently, such as, theme class meeting, report meeting, League meeting, squadron meeting, etc.

Third, students write investigation reports or collect thesis materials. Students collect relevant practice cases, research materials and reference materials to prepare for writing investigation reports or thesis.

After students return from education practice, they have more understanding of teaching or work relating to the teaching they will be engaged in in the future, and they will have more understanding of their own advantages and disadvantages and be able to carry out relevant improvement training according to their own disadvantages, and finally enter the work post with a clear mind after graduation. At the same time, through the educational practice, the collection and arrangement of thesis materials are also successfully completed, and through the test of practice, it plays a role of bridge for the successful completion of graduation thesis writing.

4.Education Research and Learning

The purpose of educational research and learning is to improve professional knowledge and skills through the systematic summary and reflection of educational practice. Students write a summary report of educational practice, recording the harvest and confusion, existing problems, cause analysis and direction of efforts.

After the end of the fourth semester, students are required to reflect and summarize the internship systematically in order to improve their professional knowledge and skills and complete an internship report of no less than 3000 words. In the report, there are not only the students' self-evaluations of their own performance in the process of practice but also the evaluation of the leaders and instructors of the practice unit on the process of students' practice. The above two parts jointly assess the students' practice performance, so the assessment results are relatively objective.

5. Integrated Training Mode of Practice Teaching Inside and Outside University

In the process of cultivating English talents for subject teaching, the college has been exploring and summing up, organically combining the practice inside and outside the university, and exploring an integrated training mode of practice teaching inside and outside the school to adapt to the development of English postgraduates for subject teaching.

In order to better organize and guarantee the implementation of practical teaching, the college has formulated a clear implementation plan. Including objectives and tasks, organization and management, practice content, time arrangement, assessment, and evaluation, etc. Establish the practice teaching tutor group of Master of Education in the university, which is responsible for the guidance and monitoring of students' educational probation, educational practice, educational research and learning process, and the summary of educational practice. The college organizes students to go to the cooperative practice base to observe the teaching activities, special reports, or lectures, teaching and research activities of middle schools, experience and feel the work and school life of middle school English teachers. The college and the practice base jointly form a leading group for the practical teaching of Master of Education, which is responsible for the organization and management of the practical teaching process.

The system of double tutors inside and outside the university is implemented. The college employs excellent English teachers in middle schools as teaching practice instructors to effectively guide and train students' teaching skills. In school and out of school tutors participate in the whole process of students' cultivation, focusing on the guidance of students' educational thought, teaching theory, teaching reflection and teaching research. The assessment and evaluation of practical teaching are conducted by the practice base and the tutor group. The double tutor system provides a wider space for the cultivation of English postgraduates in subject teaching. The tutors inside and outside the school unite to learn from each other and guide the students to grow up and succeed together. At the same time, a teaching and research team is established between tutors inside and outside the school to explore a better student guidance mode.

The topic selection of thesis task arranged in the university is completed in the practice in middle schools. The topic selection of the thesis for the master of English in subject teaching needs the practical problems of education, teaching and management from middle schools or secondary vocational and technical schools. Students need to follow the principle of combining theory with practice, closely connect with the reality of middle schools and secondary vocational and technical education, pay attention to the important problems of practical significance and application value in school education, teaching and management practice, and devote themselves to solving practical problems and improving educational practice. Therefore, in the aspects of topic selection and material collection, it also reflects the training mode of the integration of practice teaching platform inside and outside the university.

6. Conclusion

Subject teaching English aims to cultivate high-quality full-time English teachers in basic education schools and secondary vocational and technical schools who love education cause, have solid basic theoretical knowledge of English education and teaching, proficient English education and teaching skills, good scientific research ability and self-development ability. The training mode of master for education subject teaching talents needs more practice and deeper discussion. The integrated training mode of "experience -theory promotion- practice- reflection" in the field of subject teaching English in Jilin International Studies University gives full play to the function of assisting students' training in practice teaching. However, the related research is still in its infancy. In the future, more colleagues need to continue to invest in the research on the training mode of Master of Education.

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Implications of Dialogical Pedagogy for the Teaching of College English Language Skills

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Abstract: College courses of English language skills are the most important courses for English majors. Confucius and Socrates, great philosophers, and educators, are sages of cultural creation in China and the West. There are considerable similarities in their educational thoughts. Confucius' and Socrates' educational thoughts were born in a similar historical background. Confucius' "heuristic" teaching and Socrates's "midwifery" teaching belong to the dialogic teaching approach, which emphasizes interactive communication between teacher and students and training in students' way of thinking. This paper argues that dialogical pedagogy in the form of teacher-student interaction, student-student interaction, and human-computer interaction in courses of language skills for English majors can effectively achieve English teaching goals, avoid the traditional teacher-oriented teaching model, and enhance students' English learning and independent study ability. The paper recommends that the educational thoughts of Confucius and Socrates, especially the dialogic teaching approach advocated by them, is an implication for the construction of a student-oriented teaching model of English language skill courses in colleges and universities.

Keywords: Confucius, Socrates, dialogical pedagogy, English language skills, pedagogical implications

1. Introduction

Dialogical Pedagogy, focusing on "building and deepening insight through questioning and dialogue" (Alexander, 2008, p.17), can be traced back to Socrates and Confucius. German philosopher Karl Jaspers pioneered the famous idea of the "Axial Period". He believes that around 500 B.C., great thinkers flourished simultaneously in ancient Greece, India, and China, who all put forward unique views on human concerns. This period witnessed the most extraordinary events. Socrates and Plato were living in ancient Greece; in China lived Lao-tse and Confucius, and various schools of Chinese philosophy came into being in India, Shakyamuni founded the Buddhist religion. All of them created the foundation which underlies different cultural traditions. Therefore, Jaspers called this period the "Axial Period" of the history of human civilization (Jaspers, 1953, p.4). Confucius and Socrates, as the pioneers of Chinese and Western cultures, are both great philosophers and great educators. Their educational approaches are similar in dialogical pedagogy, which presents the uniqueness of dialogue as a powerful tool to lead effective instructional practices. Thus, it is of great guiding significance to solve the practical problems in English language teaching in colleges and universities.

2. Historical Background of Educational Thoughts of Confucius and Socrates

The educational thoughts of Confucius and Socrates are deeply marked by the special era and society, and the fundamental purposes of their education are to change people's way of thinking and save the society that is about to collapse (Aoki, 2008).

Confucius lived in the later Spring and Autumn Period of ancient China when the Chinese society was in transition. At that time, China's social and economic systems had undergone tremendous changes because the Zhou Dynasty was in decline, and the Zhou court had little control over its constituent states that fought each other for supremacy. The breakdown of the well-field system signifies that slavery was in transition to feudalism. The rites had collapsed, and the power of the Zhou court had declined. In such conditions, the traditional social behavior norm represented by the

Zhou rites had lost its binding force, and the whole society is in turmoil (Yang, 2009, p.13).

In “The Analects of Confucius · Ba Yi”, Confucius criticized the deviance from proper ritual form by the Head of the Ji family, one of the Three Families (Ji-sun, Meng-sun, and Shu-sun) that had usurped power from the descendants of the decaying Zhou royal lineage. He balked at the Head had eight rows of eight dancers each performing in his courtyard, “If the Ji clan’s use of the imperial eight rows of eight dancers in the courtyard of their estate can be condoned, what cannot be?” (Ames & Rosemont, 1998, p.82). Facing the chaos and disorder of the society, Confucius puts forward the idea of restoring Zhou rites and achieving political order primarily by reference to the rites and endeavored to realize his political ideals through education. Confucius believes that the ultimate goal of education is to let people know the rites and be willing to regard “rites” as their code of conduct and ethics. In “The Analects of Confucius · Wei Zheng”, Confucius said, “Lead the people with excellence (*de* 德) and keep them orderly through observing ritual propriety (*li* 礼) and they will develop a sense of shame, and moreover, will order themselves” (Ames & Rosemont, 1998, p.76). He considers that only rites and rightness can prevent people from making mistakes in thinking, and the way to let people know rites and rightness is education. For this reason, Confucius compiled “Classic of Poetry”, “Book of Documents”, “Book of Rites”, “Classic of Music”, and “Spring and Autumn Annals”, which were used as the basis and materials for educating students. His teaching principles are “ set your sights on the way (*dao* 道), sustain yourself with excellence (*de* 德), lean upon authoritative conduct (*ren* 仁), and sojourn in the arts” (Ames & Rosemont, 1998, p.112). He puts his education goal as the follows: “As a younger brother and son, be filial (*xiao* 孝) at home and deferential (*di* 弟) in the community; be cautious in what you say and then make good on your word (*xin* 信); love the multitude broadly and be intimate with those who are authoritative in their conduct (*ren* 仁) (Ames & Rosemont, 1998, p.72). Socrates, who lived in Athens, a notable polis (city-state), is considered by the Chinese the “Confucius of the West”. However, at that time, Athens was going from prosperity to decline, with social chaos. The new situation has led to major economic changes and the establishment of national systems, while old religious and moral concepts, as well as traditional scientific and artistic views, had been questioned and criticized. “The old cornerstones have been tested, and most of them have been overthrown. The spirit of negation spread widely throughout the country.” (Russell, 2012, p.27) Facing the nihilism preached by wise men that Man is the measure of all things, truth is relative, and there is no absolute truth, Socrates tried to re-lay the foundation of truth through education. Socrates holds that “to reach the truth, so his thought ran, we must not trust every chance opinion that enters our heads. Confused, vague, and empty thoughts fill our minds; we have a lot of undigested opinions which we have never examined, a lot of prejudices which we have accepted on faith, and of which we do not understand the meaning” (Russell, 2012, p.32).

According to Socrates, as long as we keep rational thinking, use correct words to express meaning, and correctly use words to define the concepts used, we can understand the truth without falling into the crisis of nihilism. Socrates’ original method of education was a sensation in Athens at the time. He compares himself to a “gadfly”, who “never ceases to settle here, there, everywhere, rousing, and reproving people” all day long to stimulate Athens, “a large horse which is inclined to be lazy” (Song, 2016).

Socrates understands the values of getting students thinking about the subject matter, and he used dialogical pedagogy to fight against the sophists, who put knowledge in lengthy lectures. Socrates tries to educate people on how to solve problems with rational thinking through his own original dialogic approach. His purpose in developing education is to change people’s way of thinking and save the chaotic and disordered society. Socrates’ method of education is a form of cooperative argumentative dialogue to draw out ideas and underlying presumptions.

3. Dialogical Pedagogy by Confucius and Socrates

Confucius and Socrates have earned a reputation as great educators because of the feasibility and uniqueness of their educational approaches. “The Analects of Confucius · Shu Er” records that “I do not open the way for students who are not driven with eagerness; I do not supply a vocabulary for students who are not trying desperately to find the language for their ideas. If on showing students one corner they do not come back to me with the other three, I will not repeat myself ” (Ames & Rosemont, 1998, p.112). It can be seen that the heuristic teaching advocated by Confucius is based on the condition that the educated have questions they cannot work out and opinions they cannot express. As shown in “The Analects of Confucius · Wei Zheng”, “Learning without due reflection leads to perplexity; reflection without learning leads to perilous circumstances" (Ames & Rosemont, 1998, p.79). Confucius pays great attention to cultivating students' independent thinking ability in the teaching process. In "The Analects of Confucius · Ba Yi", Confucius' "heuristic" teaching is detailed, "Zixia inquired, 'What does the song mean when it says: Her smiling cheeks-so radiant, her dazzling eyes-so sharp and clear, It is unadorned that enhances the color?' The Master replied, 'The application of color is to the unadorned.' Zixia said, 'Does this mean that observing ritual propriety (*li* 礼) itself comes after?' The Master said, 'Zixia, you have stimulated my thoughts. It is only with the likes of you that one can discuss the *Songs*'(Ames & Rosemont, 1998, p.84).

After Confucius told him "The painting comes after the plain groundwork", Zixia further realized the truth of "ritual then comes after human-heartedness and righteousness?", and Confucius praised, "Shang, it is you who can bring out my meaning!" This heuristic teaching runs through the teaching practice of Confucius. Yan Yuan, a Confucian disciple, once praised, "The Master is good at drawing me forward a step at a time; he broadens me with culture (*wen* 文) and disciplines my behavior through the observance of ritual propriety (*li* 礼)" (Ames & Rosemont, 1998, p.128). Here, Yan Yuan summed up Confucius' "heuristic" teaching approach, which is to improve students' knowledge and cognitive ability, step by step, from shallow to deep, according to the cognitive rules.

Socrates' father was a stone-carver, and his mother was a midwife. Socrates got a lot of implications from these two professions. He once said to a young Theaetetus that, "These are the pangs of labour, my dear Theaetetus; you have something within you which you are bringing forth". He compares himself to a "midwife", who works with men and soul. He brings forth wisdom in others, and the triumph of his art is "in thoroughly examining whether the thought which the mind of the young man brings forth is a false idol or a noble and true birth" (Plato, 1990, p.12). For example, Xenophon, a student of Socrates, recorded the dialogue between Socrates and Euthydemus about "justice" in "Memorabilia", in which Socrates' "midwifery" teaching was demonstrated (Xenophon, 2001, p.79).

Socrates: Under which shall we put lying, deceiving, doing mischief, and enslaving? Justice or injustice?

Xenophon: Clearly under injustice.

Socrates: What if someone who has been elected general should enslave an unjust and hostile city? What if he should use deception when he is at war with them? And if he should steal and seize their belongings? Will we say that he does an injustice?

Xenophon: Surely not.

Socrates: Then, do you wish, after thus putting these things, that we make the additional distinction that while it is just to do such things to enemies, it is unjust to friends?

Xenophon: Certainly.

Socrates: What about this? If some general who sees that his army is dispirited should lie and say that allies are approaching and by this lie put an end to the soldiers' lack of spirit; if someone, whose son needs medicine but will not allow it near him, should deceive him by giving him the medicine as food and by using the lie in this way to make him healthy. Under which shall we put these deceptions?

Xenophon: Under justice, in my opinion.

Socrates: Are you saying that one should not be straightforward even with one's friends in all circumstances?

Xenophon: Surely not. Rather I change where I put the things mentioned if it's permitted.

...

Here, Socrates' progressive discussions on the issue of "justice" continue to elicit ambiguities to inspire Xenophon, making Xenophon contradictory and confused, and then he encourages Xenophon to find out the correct answer step by step through inspiring. Socrates' teaching approach emphasizes that teacher and students think together and ask questions to each other, cultivating students' awareness of active engagement. Socrates' "midwifery" teaching and Confucius's "heuristics" teaching have the same effect. They do not directly provide the interlocutor with answers but activate the interlocutor to speak out his/her thoughts through continuous dialogues.

Socrates' "midwifery" teaching and Confucius' "heuristics" teaching belong to the dialogic teaching approach, which emphasizes equal and free dialogue and communication between teacher and students, and aims to train students' way of thinking and independent learning. This dialogue-based teaching model can be a guidance and reference to the construction of a student-oriented teaching model in college courses of English language skills.

4. Implications for Teaching of College English Language Skills

Language skill courses for English majors mainly include essential English, advanced English, English listening, English speaking, English reading, English writing, English Chinese translation, and English Chinese interpretation. College English teaching includes both knowledge training and skill training. English skill courses involve thinking, understanding, and expression, which are important means to cultivate students' way of thinking and comprehensive language performance.

On April 7, 2016, China's Ministry of Education issued the "Report on the Quality of Higher Education in China" for the first time, pointing out that current classroom teaching faces a shortcoming and weakness that affects the quality of undergraduate teaching. Some scholars have stated that the current foreign language teaching in China is teacher-oriented, and students are passive in the choice of learning material and methods (Shu, 2014).

In a traditional classroom, a teacher moderates and regulates the flow of information and knowledge. The teacher speaks much, and students speak little, which obliterates students' subjective role. As college English is a language subject, the teaching cannot be carried out without oral expression and dialogue. College English teaching is based on text elements such as words, sentences, paragraphs, and articles, and absorption, understanding and expression are the basic activities, with listening and reading (that is, intake or input) and speaking and writing (expression or output) as the basic activity content. The training of listening, reading, speaking, and writing is the basic goal. In the process of teaching, if the teacher overly strengthens his/her own "speaking" and the students' "listening" while weakening the students' "speaking" and his/her own "listening", the teaching may become a monologue. On the contrary, if the teacher establishes an atmosphere where the students feel free to engage in discussion, the learning process can become more meaningful. The teacher targets students' comprehension asks questions to the students and gets answers back, and both the teacher and students listen to and understand each other, a dialogic relationship in teaching will form.

The dialogical pedagogy of Confucius and Socrates is an important reference for the construction of a student-oriented dialogic teaching model for the current college courses of English language skills. Introducing it into the teaching of current college courses of English language skills can overcome the disadvantages of traditional teaching such as teacher-oriented and "duck-stuffing" style, bring students opportunities to express, and improve their critical thinking ability (Paul, 1998).

The dialogical pedagogy requires teachers to mobilize students' enthusiasm for learning in the classroom based on students' knowledge level and acceptance ability, give full play to students' subjectivity in the learning process, and support students to acquire knowledge and improve ability through active thinking and active exploration. The dialogic English teaching is students-oriented and aims at stimulating students' interest in learning and improving their independent learning ability. Teachers should guide students to participate in the English classroom and improve English proficiency through a variety of classroom teaching methods (Wang, 2014. P.105).

Before implementing the dialogic teaching method, teachers should realize that the ultimate goal of the dialogical pedagogy is to stimulate students' enthusiasm for learning, so that students can think actively in the English class. To this end, teachers need to make good use of various opportunities in the English classroom and actively communicate with students to fully grasp the English proficiency, learning ability, and learning attitude of students. In-depth English teaching can be achieved through dialogical pedagogy.

Dialogic teaching in English classrooms can be carried out in the following ways: First, teacher-student interaction. A teacher should see students as partners rather than passive recipients of knowledge (Swaffield, 2011). In a dialogic teaching English classroom, a teacher inspires students' learning interests. The teacher and students always follow a stimulus-response process in their interaction. The teacher continues to provide external stimuli to students so that students can obtain language acquisition. The primary purpose of the teacher is to create a real and natural language environment for college students and create opportunities to use English. Classroom questioning is a common and natural way. One of the most scientific ways for teachers to be the initiator and maintainer of dialogic English teaching is to build a complete questioning system. In English classes, a teacher inspires students by asking questions, develops students' interest in answering questions, enables them to think and associate positively, and guide them to actively express their views.

In the classroom, a teacher interacts with students by replying to and communicating questions, which can enable students to gradually improve their awareness and ability to communicate in English. To make a dialogic teaching classroom more efficient, the teacher must pay attention to improving questioning skills and raise more open-ended and implicational questions. At the same time, in the process of heuristic teaching, the teacher can also interact with students regarding emotions to stimulate students' desire and interest in communication. The teacher-student interaction provides the teacher with an ongoing analysis of the students' comprehension because there is constant feedback between the student and the material.

Second, student-student interaction is a vital part of any course experience, which is the interaction among students in an English class. Interactive activities may involve different language skills such as listening, speaking, reading, and writing. In the process of interacting with classmates, students will get more opportunities for language input and output. In order to better communicate with classmates in a friendly manner and be understood by others, students must constantly adjust their language expression. In this process, students' communication skills will be strengthened. The interaction among students can be of different styles. For example, pairing is one-to-one communication and cooperation; group cooperation is a group of three to five students who complete learning tasks together. The student-student interaction in the English classroom is a dynamic, innovative, and creative process. Therefore, the teacher needs to design reasonable and efficient heuristic activities according to factors such as English teaching content and learning characteristics, so that students can engage in the English class and be inspired in student-student interaction. Successful student-student interaction is characterized by group discussions that seek to give voice to all students and to provide sufficient time and chances to listen and think about the ideas of their peers.

Third, human-computer interaction. In recent times, technology-based pedagogy has gained momentum because of the advancements in digitization and the overall acceptance of multiple forms of learning. Learning mechanisms driven by technology (MOOCs, smart devices, social media) provide a number of benefits to the learner's experience (such as engagement, proficiency, access, profiling and customization). With the application of modern educational technology in foreign language teaching, computer-assisted teaching has become an important teaching method, and human-computer interaction has complemented traditional teacher-student interaction and student-student interaction. The human-computer interaction method can meet the individualized implication needs of students and better interactive communication. To tailor the dialogic English classroom, the teacher can obtain more abundant resources from computers and the Internet. With the help of computers, the teacher's heuristic teaching can inspire students' learning, especially independent learning. For example, in respond to COVID-19, educational units have been struggling to find options to deal with this challenging situation. COVID-19 pandemic has changed the way of teaching to some degree, with the rise of e-learning, whereby most of the teaching and learning was undertaken remotely and on digital platforms. As a special "classroom", digital platforms enable teachers to reach out students more efficiently through chat groups, video meetings, and document sharing (Beason-Abmayr, et al., 2020). However, teachers should focus on the effectiveness of human-computer interaction considering college students may be distracted.

In summary, the dialogical pedagogy focuses on building understanding and deepening insight through questioning and dialogue, in line with modern English teaching purposes. It underlines the subjective role of students and taps the full potential of teachers and students in English teaching, with implications as the teaching principle and interaction as one teaching tool. The dialogic teaching not only helps improve students' English learning ability and active thinking ability, but also interests students in English in the process of exploration.

The dialogic teaching technique is favored by many teachers, but it is far from ideal: teachers ask close questions of low cognitive demandingness; pupils' contributions to the communication are very short; no discussion takes place as the IRF structure. Thus, teachers should endeavor to deal with these issues in the dialogical pedagogy of college English.

5. Conclusion

Lecture teaching is still one of the main forms of English teaching in colleges and universities. In the lecture teaching of English in colleges and universities, it is common that teachers do most of the talking, while most students remain silent. There is no built-in discussion or active participation from students, except when they are prompted to answer a question. As landmark thinkers and educators in human history, Confucius and Socrates have a similar background of their ideas and the same way of education. Confucius' "heuristic" teaching and Socrates' "midwifery" teaching belong to the dialogic teaching approach, which has important guiding significance for the current college courses of English language skills to construct a student-centered dialogic teaching model. Every coin has two sides. Although dialogical pedagogy faces some disadvantages, as a remedy for a whole number of problems, it can increase the quality of education and learning (Lefstein, 2010, p.191). Through the development of dialogical pedagogy in the form of teacher-student interaction, student-student interaction, and human-computer interaction, English teaching goals can be effectively achieved, and students can play their subjective role in learning. In such an equal, democratic, and open environment for dialogue, students are encouraged to think independently, embrace active learning rather than passive learning, and construct shared knowledge rather than receive presented information. It can engage students within the class where teacher and students can dialogue, query, and discuss.

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A Corpus-based Comparative Study of 'Fire/Huo' Metaphors in English and Chinese Economic and Political Context

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Abstract: Metaphor plays an important role in reasoning in the media discourse. This paper aims to extend this concept to a bilingual context (English-Chinese) on a shared topic between the two languages, US-China economic-political relationships. The paper compares the conceptual metaphors in the 'fire' domain in English and the conceptual metaphors in 'huo' in Chinese in their relations to the context. It adopts a corpus-based approach, which includes language data in real-life scenarios from four major media of the two languages. The research combined both quantitative and qualitative methods, from frequency to concordance analysis. The results show that fire metaphors in both languages are used to create negative contexts and build images of the agent described; however, 'fire' metaphors in English focus more on the situation-effect domain, while 'huo' metaphors in Chinese emphasize action and emotion. These results suggest that fire metaphors in English and Chinese have common ground in the use of reasoning in media discourse but differentiate in the subjects described and domains used. On this basis, further study could apply the findings to a more general discourse.

Keywords: Corpus-based approach, economic and political context, fire metaphors, huo (火) metaphors

1. Introduction

Metaphor is a crucial cognitive mechanism for us to understand the language and society, deriving from and, in turn, changing the way we think of a concept on an unconscious level. This paper investigates metaphors used in economic-political reports both in English and Chinese. It takes the word 'fire' as an example, comparing the metaphorical uses of 'fire' in English and 'huo' in Chinese, both in practical contexts in the contemporary world. To provide data for the research reported in the paper, the researcher has built up one Chinese and one English corpus with 100,000 words each on the current economic-politicl news releases.

1.1 Etymology

Fire is the flames, light, heat, and sometimes smoke that is produced when something burns. It originated from Old English *fȳr (noun)* / *fȳrian*, meaning "supply with material for a fire," of West Germanic origin and is related to Dutch *vuur* and German *Feuer* (Oxford, 2021).

Huo (火) is originally a pictographic character in Chinese. It features the appearance of an upward flare, indicating the natural substance as a noun, according to *Shuo Wen Jie Zi* (Xinhua, 2021). There are conversions in morphology throughout history time. In modern Chinese, 'huo' could also be used as a verb or an adjective.

1.2 Metaphor and cognitive construction

Metaphor is not only a linguistic phenomenon, but also a mode of thinking, a rhetorical means of thought, a *cross-domain mapping*, and a cognitive approach for people to understand abstract and unfamiliar concepts by referring to specific and familiar things. Thus, Lakoff (1996) defines that a conceptual metaphor is a conventional way of conceptualizing one domain of experience in terms of another, often unconsciously. *Unconscious* here refers to that people have no conscious awareness over what they think and talk simply because it's done at a very fast speed and on a very deep level. The components of thought—concepts behind the language—are even less noticed in the daily exposure to the language. The gap between language and our conscious awareness provides a space for the conceptual metaphors which are used on purpose in an unnoticeable way. Since that conceptual metaphor is to project the source domain into the target domain and to use the concept of the source domain to understand the target domain, in the economic-political context, the speaker’s purpose is to “evoke a moral frame of reference based on conceptual metaphor notions,” as is further discussed by Charteris-Black (2017).

The idea of building moral frames or images for a political purpose via conceptual metaphors is well-argued by Lakoff (1995). He claims that “any adequate appreciation of even the most mundane social and political thought” requires an understanding of the system of metaphorical concepts since so much of our social and political reasoning uses this system. For the daily thinking, we think in metaphor, for the moral reasoning, metaphorical reasoning accounts for a major part of moral reasoning. Because “the logical structure of the column is determined by metaphor, not by facts” (Lakoff, 1996). Metaphorical reasoning is more persuasive than factual reasoning. Gan (2011) further argues that metaphorical reasoning in Chinese context that “metaphor is unfalsifiable.” Considering its unfalsifiable characteristic, metaphor has become a subtle tool to convey ideology and stereotype in media discourse. Therefore, the analysis of the metaphorical system in media discourse has been adopted to point out the tendency and stance of the media itself, and to further discover how the media influence public opinion.

In the case of ‘fire,’ the set of routinized metaphors, which derived from their etymology, is more likely to activate pre-existing knowledge of frames and moral preferences. For example, ‘fire’ as an entity could be associated with heat; in the following clause, “it sets fire in us,” getting angry or excited often causes physiological influence like body heat. Thus, the knowledge in the natural domain is brought in the emotion domain. Since that the heat of a fire in the natural domain may either causes a fire disaster or contribute to the survival of the human, here, ‘fire’ in its association with heat, activates two types of moral preference—a negative ‘conflict’ or a positive ‘hope,’ depending on the context. In this vein, a pre-existing image of ‘hope’ or ‘conflict’ has been built and framed in the clause using a ‘fire’ metaphor, without any direct address of the moral preference.

In communication, conceptual metaphors in the discourse are the message sender; the audience receives the message unconsciously from established images. In an economic-political context, media sends the message while the audience represents public opinions. The language used by media, thus, influences reality in the way that the metaphor constructs cognitive thinking by framing the pre-existing knowledge in the discourse.

1.3 Critical discourse analysis and corpus

Critical Discourse Analysis (CDA) believes that discourse reflects and acts on society, and it is committed to revealing the ideological meanings and power relations behind the language. Wang and Xin (2019) summarize that around 2000, scholars gradually proposed the combination of CDA and cognitive linguistics and, thus, a new interdisciplinary discipline emerged as critical cognitive linguistics, where critical metaphor analysis is one of the most widely applied fields. Critical metaphor analysis has gradually developed into an effective method for in-depth studies of the relationship between language, cognition, and society (Wang and Zhang, 2014).

Charteris-Black (2004) introduces the corpus method into the research of critical metaphor analysis in his book *Corpus Approaches to Critical Metaphor Analysis*. The introduction of corpus makes up for the over-reliance on intuition in the analysis of metaphor and makes the studies of metaphor more scientific. Inspired by the corpus method, Goatly (2007, as cited in Wang & Xin, 2019) made a critical analysis of conceptual metaphors in self-built corpora, pointing out that metaphors can reflect ideologies and proving metaphor’s function of conceptualization.

Although there has been previous research on either corpus methods or critical metaphor analysis, most of the sources have been focusing on recognizing and analyzing metaphors in a monolingual context. There has been little research comparing a pair of metaphors in bilingual contexts based on critical metaphor analysis via the corpus approach. Therefore, this research pays special attention to the comparison between ‘fire/huo’ metaphors in English and Chinese contexts with the methods introduced above.

1.4 Classification in the conceptual metaphors of ‘fire’ and ‘huo’

As a signifier of natural phenomena, ‘fire’ denotes a process in which substances combine chemically with oxygen from the air and typically give out bright light, heat, and smoke, referring to combustion or burning (Oxford, 2021). According to Roman Jakobson, there is no signatum without signum (Venuti, 2004). That is, when we talk about ‘fire’, what reflects in our minds is not necessarily a particular entity of fire, but a signifier with specific features and functions, for example, light, heat, color, food, danger, aggression, etc. Therefore, a wide range of connotative meanings is generated by the features and functions of fire, including 43 senses of both verb and noun form, such as burning, cooking, anger, emotion, and job (Oxford, 2021). Therefore, among the conceptual metaphors of fire, there are not only reference to fire as substance, but also the features and functions of fire.

In view of the cognitive mechanism argued above, in this research, the terms related to the features and functions of 'fire' in its conceptual metaphor domain are sorted out based on the classification *in Fire Metaphors: Discourses of Awe and Authority* by Jonathan Charteris-Black (2017). He creates this classification to analyse 'fire' metaphors in the chapter concerning American political rhetoric, which fits the economic-political discourse of the current corpus. According to Charteris-Black, there are three categories of 'fire terms': (1) natural fire, including four sub-categories, form and action, intensity, appearance, and motion; (2) functional fire, including three sub-categories, heat, light, and smoke; (3) organic fire, including three sub-categories, starting a fire, causing a fire to grow, and causing a fire to end. To be specific, the English 'fire terms' include the following words: fire(s), flame, burn, fiery, blaze/ablaze, smoulder, incandescent, glow/afterglow, flare, flicker, heat, scorch/scorching, sear/searing, melt, fan, stoke, brand, beacon, torch, lamp, illuminate, smoke, spark, fuel, ignite, extinguish, inflame/inflammable, ashes, kindle, incendiary, snuff out, embers. The specific classification for each word is shown in Table 1 (See Appendix 1).

Likewise, the Chinese characters in the conceptual metaphor domain of the character, '火(huo),' are classified by the same criteria as the English 'fire terms' according to Charteris-Black's classification for fire metaphors (Charteris-Black,2017). The Chinese 'fire terms' in the conceptual metaphorical domain of '火' include the following characters: 火 燃 焰 烧 怒 激 耀 光 明 亮 炽 热 红 艳 炫 闪 旺 烁 温 炎 暑 烈 焦 烫 糊 灼 晒 煎 融 熔 煽 炉 烙 灯 炬 焕 奕 照 烟 煤 熄 灭 化 灰 烬 焚 闷 炙 炸. The characters collected could be seen as the Chinese equivalents of the English 'fire terms' shown above. It is important to notice that a few terms in this list, though initially in the conceptual metaphor domain of '火 huo,' has been evolving into literal terms in modern Chinese, such as 明 ming, 亮 liang, 化 hua, 焦 jiao, etc. However, this research tends to consider their metaphorical etymology in order to keep consistent with the English classification according to Charteris-Black for comparison's sake. The specific classification for each character is shown in Table 2 (See Appendix 2).

1.5 Research question and hypothesis

The etymology shows that 'fire' and '火' (huo) had both positive and negative connotations in their origins. But what about their metaphorical uses? Considering the sample data collected from the economical-political news in US-China relations, the researcher predicts that the metaphorical uses of the words would be in negative context. Furthermore, how would the two parties make use of the two words and their metaphorical implications to achieve certain agenda? What's the role of the 'fire/火' metaphor in shaping the image of controversial events, that is, how would language influence society?

2. Methodology of the Study

2.1 A Corpus-based approach

This research adopted a corpus-based approach, combining major English dictionaries online. Corpus is a new way to describe a language. Compared with the traditional way, corpora provide a large amount of data, enabling the qualitative linguistic studies to conduct quantitative methods such as count, frequency, and ratio, revealing the language patterns on a macro scale. Hence, corpora could be exploited for inductive studies (Johns, 1994). In addition, traditional studies often dwell on prescriptive practices like grammar, to tell right from wrong on a theoretical level. While corpus studies are descriptive in nature, reflecting the authentic language use from real-world contexts, therefore leading to more grounded and practical results. Particularly, for this research, corpus studies could give access to logical-functional analysis which looks at the relationship between ideas, according to the systemic-functional analysis of Halliday (1994). By collecting the economic news releases from both English and Chinese media, I aim to build a pair of bilingual corpora in both English and Chinese of 200,000 words each, comparing the words 'fire,' '火(huo),' and words in their metaphor domains to show their real-life usages in descriptive data. Then the collected and cleaned data would be processed via two corpus-based, text-analyzing software, ConGram, and AntConc.

This research also adopts a mixed method that combines quantitative and qualitative methods, to acquire a more comprehensive understanding of the topic. The descriptive data collected such as frequencies of the word's literal and metaphorical uses would be first analyzed statistically through mathematical models. I would analyse the data by frequency number and frequency. Furthermore, I would study the words by concordance, which shows the contexts of the words. I would provide evidence of the metaphorical ratio, collocation, colligation, semantic prosody, and semantic preference. The contextual analysis is employed to get a deeper understanding of the usage of the word in its social and cultural contexts.

2.2 Data collection

I've collected approximately 200,000 characters of data in Chinese and approximately 200,000 words data in English. The data in Chinese are collected from the websites of China Daily and People's Daily. The data in English is collected from the websites of the New York Times and BBC News. I collect news articles in economic field which are relevant to US-China relationships. All the news articles collected are released between 01 January 2020 and 31 March 2021.

The news articles are sorted and gathered manually with different methods on each website. On the website of China Daily, articles are sorted out into five columns which are relevant to international news, which are World Outlook, Current Affairs, World View, Chinese Original, Breaking News (观天下, 时政, 世界观, 中文原创, 资讯). The news releases are sorting by the keyword America(美国) with a full-text search. On the website of People's Daily, articles are from the International News-American (国际-美国) column which summarizes all the releases about the US, including three sub-columns, which are Opinions, Rolling News, China-US Relationship (观点评论, 滚动新闻, 中美关系). On the New York Times online, related news releases are selected by keyword, China, in the search box and narrowed by time filter, from 01 January 2020 to 31 March 2021; by section, including 'Business' 'US' 'World'; and by type of 'Article'. Relevant articles recommended below the news are also included, mainly focusing on the topics of 'Huawei' and 'Tik Tok', the two controversial companies at the heart of the US-China trade conflicts in 2020. On the BBC News, related news releases are selected by tag. The data is collected from four summarized tags: 'China-US Relations', 'Huawei', 'Tik Tok', and 'Trade War,' which are two general tags in the economical field and two topical issues in between US and China in 2020. Repetitive releases within the tags are not included.

2.3 Data cleaning and word count

Advertisements and recommendations on the webpage are not included. All the annotation for the copyright of images and images themselves are removed. The data taken are the news releases including the elements of news: headlines, attributions, captions, leads, and bodies.

In the Chinese data, links to the news are included since the sorting function does not always work for later reference. However, for the English data, including the links may bring redundancy and confusion in word count; also, the releases are traceable by directly entering their headlines in the search box.

The data is selected and cleaned before word counts are calculated. The character count for China Daily is 129343 words. The character count for People's Daily is 136524 words. The word count for the New York Times is 85619 words. The word count for BBC News is 94384 words. The total Chinese word count is 265867 and the total English word count is 180003.

3. Data Analysis and Results

3.1 Initial data analysis: classification and frequency

The collected and cleaned data is analyzed in both ways of qualitatively reading and quantitatively processed via ConGram and AntConc. ConGram is used for processing English data while AntConc is used for Chinese data, according to the different encoders the two software adopt.

The quantitative analysis shows the frequency numbers and frequencies of 'fire', '火', and words in their conceptual metaphorical domains.

To begin with, all the terms are processed one by one via ConGram. According to manual counting, the frequency numbers of the 'fire terms' in this corpus can be obtained. Then, the frequency of each word in the corpus is obtained. Among the 32 terms, 22 terms have not appeared in this corpus; all frequency numbers are 0. The rest 10 words have appeared in this corpus at least once; each frequency number is greater than or equal to 1. Table 3 (See Appendix 3) shows the 10 words left and their frequency numbers.

Accordingly, their frequencies are calculated and shown in Table 2 below with the ranking by frequency from the highest to the lowest. In addition, the metaphor ratios of each term have been calculated based on the concordances of each term. For example, in regard to the term 'fire,' there are 3 literal uses and 7 instances of metaphorical meanings out of the 10 concordance lines in this corpus. Thus, the metaphor ratio of 'fire' would be 70%. Each data point is reserved to one decimal place.

According to Table 4 (See Appendix 4), the most frequent term is 'fire' and 'brand'. But 'fire' is more often used in metaphor than 'brand,' their metaphorical ratios being 70% and 30% respectively. The terms 'flare, fiery, blaze, heat, stoke, smoke, inflame' are used 100% metaphorically in this corpus. The metaphorical ratios of 'brand' and 'fuel' are no more than 50%, with their ratios being 30% and 50% respectively. Potential reasons could be that the corpus is based on economic news articles where 'brand' and 'fuel' are high frequency entities in the economic context. Even though, the metaphor still plays a fair amount in their usages. The frequencies and metaphorical ratios indicate that, in general, 'fire terms' are often used metaphorically in the economic and political news articles in the corpus.

Likewise, all the Chinese '火(huo) terms' are processed one by one via AntConc. According to manual counting, the frequency numbers and frequencies of the '火(huo) terms' in this corpus can be obtained. Among the 32 characters, 3 characters have not appeared in this corpus; all frequency numbers are 0. The rest 29 characters have appeared in this corpus at least once; each frequency number is greater than or equal to 1. Table 5 (See Appendix 5) shows the 29 characters left and their frequency numbers.

Accordingly, their frequencies are calculated and shown in Table 6 below with the ranking by frequency from the highest to the lowest. In addition, the metaphor ratios of each term have been calculated based on the concordances of each term. Each data point is reserved to one decimal place.

According to Table 6 (See Appendix 6), the most frequent term is '化(hua, melt)' with a 100% metaphorical ratio. Except for the terms '炎(yan, hot), 烟(yan, smoke),灰(hui, ash),炸(zha, explode),暑(shu, heat),灯(deng, lamp),烧(shao, burn)' are used no more than 50% metaphorically, each of the rest 25 terms has a metaphorical ratio more than 50% in this corpus. The metaphorical use of 'huo terms' accounts for 89.9% of usage of 'huo terms' in this corpus. The frequencies and metaphorical ratios indicate that, in general, '火(huo) terms' are often used metaphorically in the economic and political news articles in the corpus.

3.2 Concordance analysis

Based on the quantitative analysis of frequency and the metaphorical ratio of 'fire' and '火(huo),' next, I would study the data qualitatively via concordance analysis. The data would be examined mainly on three aspects: collocation, semantic prosody, and semantic preference, as shown in Table 7 (See Appendix 7) and Table 8 (See Appendix 8).

For semantic prosody, we can see from the table that all the metaphors from the 'natural fire' domain have negative connotations. Fire metaphors from functional domain and organic domain could be positive (A1, A2). This distinction indicates that natural fire is only beneficial when used by humans properly. Though 85% of fire metaphors are still used negative context, as is in its etymology.

(A1) 'That leaves central banks--which usually stoke growth by making borrowing cheaper' (stoke)

(A2) '...tainers, like these at a port in Shanghai, helped fuel a wave of enormous growth in global trade.' (fuel)

For semantic preference, especially for data in the negative contexts, there are mainly three target domains: situation domain, effect domain, and action domain. In the situation and effect domains, fire metaphors usually refer to trouble or danger, often with urgency (A3, A4, A5). The metaphors are used negatively because that the nature of the event is negative by itself.

(A3) 'UN General Assembly: US-China tensions flare over coronavirus.' (flare)

(A4) 'Other corporate leaders have felt the heat.' (heat)

(A5) '...WeChat, TikTok and Huawei have all come under fire recently...' (fire)

However, for metaphors in action domain, the negativity comes from the action of the agent. Two cases are from BBC's comments on actions of the US (A6, A7). BBC has not directly accused the US or 'picked sides' loudly but has indicated the slight disapproval of such actions via the use of conceptual metaphors in the discourse.

(A6) 'On Tuesday, the US reversed its decision to brand China a currency manipulator...'(brand)

(A7) '...concerns about Chinese tech domination are just a smoke screen by US executives.'(smoke screen)

The focus of this research is metaphors of fire. So according to Table 6, the fire terms with a metaphorical ratio below 50% have been omitted in Table 8. Among the 28 fire metaphors left, 12 words are used neutrally; 18 words are used negatively; 4 words are used positively.

Here, the words that have different semantic prosodies by themselves, i.e., both neutral and negative, are counted multiple times. Especially, many words with positive and negative connotations have negative connotations at the same time. There are only 8 words that are purely positive or neutral, but they mainly serve as the auxiliary (A8), nominalizer (A9), terminology (A10), or set phrases. So generally, the semantic prosody of 火 huo metaphors is negative.

(A8) '美国国家经济研究局的商业周期测定委员会在当地时间 8 日发布声　明：2020 年 2 月标志着始于 2009 年 6 月的经济扩张的结束 February 2020 marks the end of the economic expansion that began in June 2009, according to the announcement by Business Cycle Dating Committee of the National Bureau of Economic Research.' (明 Ming used as an auxiliary in 声明 announcement)

(A9) “华盛顿禁止向中兴通讯出口芯片以来，“供应链去美国化”一直是半导体行业的流行语 ‘The de-Americanisation of the supply chain’ has been a buzzword in the semiconductor industry since Washington banned the export of chips to ZTE.” (化 Hua used as a nominalizer in 去美国化 de-Americanisation)

(A10) ‘其中 3 月 9 日至 16 日美国股票市场遭遇了历史性的 3 次熔断，而在全球金融危机时期它却没有出现熔断 Among them, the U.S. stock market suffered three historic circuit breakers on March 9 and March 16, while the circuit breaker did not appear during the global financial crisis.’ (熔 Rong used in terminology 熔断 circuit breaker)

For the majority of data, words in negative context, there are mainly 3 target domains: situation domain, action domain, and emotion domain. The usage of 火 huo metaphors in situation domain is in accordance with fire metaphors in English, refer to an urgent trouble (A11). However, Chinese data is more frequent on action and emotion domains which emphasize the agent of such action (A12) or emotion (A13), especially, the negative expressions of the opposite party/the US.

(A11) ‘尽管美国在供应链问题上火上浇油，但是新冠疫情给各大企业造成了沉重打击 While the United States added fuel to the supply chain problem, the COVID-19 epidemic has dealt a heavy blow to companies’ (火 huo in the phrase 火上浇油 add fuel to a bad fire)

(A12) ‘美方一些人为了诋毁攻击中国，已经到了没有任何下限的地步。“三无”政客们的伎俩之二是煽风点火、挑拨离间。In order to slander and attack China, some people in the US have been bottomless. The two tricks of the incompetent politicians are stirring up trouble and provoking dissension.’ (煽 Shan in 煽风点火 stir up trouble or fan the flame)

(A13) ‘因此只能故伎重演。一次次空洞的演讲，美国的焦虑和无奈溢于言表。So the old tricks have to be repeated. Empty speech after empty speech, the anxiety and frustration of the America are evidently expressed.’ (焦 Jiao in the phrase 焦虑 anxiety)

There is a special segment on the spectrum of semantic prosody of the Chinese data, where the metaphor is originally neutral but used negatively for sarcasm in the context. This transformation from neutral to negative could be seen in the example of ‘热(re) Hot’ (A14). ‘热 Re/hot’ is the effect of the fire since it’s humans’ tactile experience of the high temperature of fire. Since the increase of body heat when one experiences emotional changes resemble the increase of environmental heat caused by fire, later, ‘热 Re/hot’ is shifted from nature domain to emotion domain. The phrase ‘be keen on (热 re 衷 zhong 于 yu)’ which appears in the corpus, is originally a verb phrase describing one’s passion and related to positive emotions; the phrase itself is usually used neutrally or positively. However, its semantic prosody has changed when they are grouped with the agent ‘the US’ in the corpus concordances. Such transformation in semantic prosody not only emphasizes the influence of agent in the use of metaphor, but also build the image or impression of the agent between the lines. For example, in the case of A14, ‘Be keen on 热衷于’ is supposed to describe a harmless hobby but when the agent is specified as the US, the term becomes negative; thus, the US is indicated as the ill-disposed manipulator.

(A14) “美国那些热衷于“政治秀”的政客应该好好听听来自本国商界的理性声音，停止鼓动所谓的脱钩。US politicians who are keen on the ‘political kabuki’ should listen well to the voice of reason from their own business community and stop agitating for so-called ‘decouple’ ” (热 Re in the phrase 热衷于 be keen on)

4. Conclusion and Limitation

The bilingual data in the self-built corpus collected from the economical-political news in US-China relations shows that metaphors of ‘fire’ and ‘火 huo’ are frequently used, which is testified by quantitative analysis.

The qualitative concordance analysis shows three findings. First, ‘火’ and ‘fire’ terms are used mostly in negative contexts in terms of semantic prosody. Although both the fire metaphors in English and Chinese could be used in a positive and neutral context, such usage is limited in number and domain, and they often serve functional purposes. The negative prosody is the majority in fire/火 metaphors. This relates to the negative connotation of the etymology of the character. Second, ‘fire’ and ‘火’ both describe a situation, behaviour or consequence in collocation. However, ‘fire’ metaphors focus more on the effect domain but less on the action domain, while ‘火 huo’ metaphors emphasize the agent of action and emotion. Last, in view of semantic preference, fire/火 huo metaphors are often used when describing a certain party, to build up negative images subtly. Such image shapes the readers’ impression of the agent in an inapparent way, showing preference without posing aggressive stands.

There are some limitations in this study: Since the corpus is built by one researcher manually, there might be a cognitive deviation in the process of collecting data such as the preference of certain topics and individual’s knowledge. Further research could improve on the accuracy by involving more researchers and perspectives in data collection. Also, the corpus is rather small; the word-count in both databases is below 1 million, which limits the frequency of each word and valid examples taken. Further research may expand the corpus size, provide a more extensive basis for quantitative analysis, and show more examples in specific metaphors. In this case, the conclusion could be verified in a more general discourse.

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Appendix 1: Table 1: Classification of the terms in conceptual metaphor domain of fire (Charteris-Black, 2017)

Classification		‘Fire’ Terms
NATURAL FIRE		
	Form & Action	fire(s)
		flame
		burn
		fiery
	Intensity	blaze/ablaze
		smoulder
		incandescent
	Appearance	glow/afterglow
		flare
	Motion	flicker
FUNCTIONAL FIRE		
	Effect-Heat	heat
		scorch
		sear
		melt

		fan
		stoke
		brand
	Effect-Smoke	smoke
	Effect-Light	beacon
		torch
		lamp
		illuminate
Organic Fire		
	Starting A Fire	spark
		fuel
		ignite
	Growing A Fire	extinguish
		inflame
		ashes
		kindle
	Ending A Fire	incendiary
		snuff out
		embers

Appendix 2: Table 2: Classification of the terms in conceptual metaphor domain of '火 huo' as Chinese equivalence to Charteris-Black's fire terms (Charteris-Black, 2017)

Classification		'火' Terms
自然的火 NATURAL FIRE		
	状态 Form & Action	火（huo）
		焰（yan）
		燃（ran）
		烧（shao）
	程度 Intensity	烈（lie）
	外观 Appearance	红（hong）
火的功能 FUNCTIONAL FIRE		
	影响-温度	热（re）
	Effect-Heat	温（wen）
		炎（yan）
		暑（shu）
		灼（zhuo）
		熔（rong）
		融（rong）
		化（hua）
		焦（jiao）
		糊（hu）
		炉（lu）
	结果-烟灰 Effect-Smoke	烟（yan）

	影响-亮度 Effect-Light	灰（hui） 光（guang） 明（ming） 亮（liang） 耀（yao） 闪（shan） 炫（xuan） 照（zhao） 灯（deng）
人为的火 Organic Fire	生火 Starting	炸（zha） 怒（nu） 激（ji）
	助燃 Growing	煽（shan）
	灭火 Ending	灭（mie）

Appendix 3: Table 3: 'Fire terms' appeared at least once and their frequency numbers

Classification		Fire Terms			Frequency	Numbers
			NYT	BBC		
NATURAL FIRE						14
	Form & Action	fire(s)	4	6	10	
		fiery	1		1	
	Intensity	blaze		1	1	
	Appearance	flare		2	2	
FUNCTIONAL FIRE						13
	Effect：heat	heat	1		1	
		brand	2	8	10	
		stoke	1		1	
	Effect：smoke	smoke		1	1	
ORGANIC FIRE						5
	Starting	fuel	4		4	
	Growing	inflame	1		1	
					Total count：32	

Appendix 4: Table 4: 'Fire Terms,' Frequencies, and Metaphor Ratios

Fire Terms	Frequency Number		Frequency (%)	Metaphor Ratio (%)	
	NYT	BBC		Literal	Metaphorical
fire(s)	4	6	31.3%	30%	70%
brand	2	8	31.3%	70%	30%
fuel	4		12.5%	50%	50%
flare		2	6.3%	0	100%
fiery	1		3.1%	0	100%
blaze		1	3.1%	0	100%
heat	1		3.1%	0	100%

stoke	1		3.1%	0	100%
smoke		1	3.1%	0	100%
inflame	1		3.1%	0	100%

Appendix 5: Table 5: ‘火(huo) terms’ appeared at least once and their frequency numbers

Classification	Fire Terms	CHD	PPD	Frequency	Numbers
自然的火 NATURAL FIRE					
状态 Form & Action	火（huo）	8	15	23	
	焰（yan）		2	2	
影响-温度 Effect-Heat	燃（ran）	1		1	
	烧（shao）	1	1	2	
程度 Intensity	烈（lie）	19	31	50	
外观 Appearance	红（hong）	6	1	7	85
火的功能 FUNCTIONAL FIRE					
	热（re）	15	14	29	
	温（wen）	4	3	7	
	炎（yan）	31	57	88	
	暑（shu）		4	4	
	灼（zhuo）	1		1	
	熔（rong）	4		4	
	融（rong）	118	31	149	
	化（hua）	261	167	428	
	焦（jiao）	8	12	20	
	糊（hu）	1	2	3	
	炉（lu）	3	2	5	
结果-烟灰 Effect-Smoke	烟（yan）	4	2	6	
	灰（hui）	2	3	5	
影响-亮度 Effect-Light	光（guang）	13	6	19	
	明（ming）	140	188	328	
	亮（liang）	6	4	10	
	耀（yao）	1	5	6	
	闪（shan）	1	1	2	
	炫（xuan）		2	2	
	照（zhao）	17	17	34	

	灯（deng）	1	2	3	1153
人为的火 ORGANIC FIRE					
生火 Starting	炸（zha）	1	4	5	
	怒（nu）	4	2	6	
	激（ji）	33	24	57	
助燃 Growing	煽（shan）	4	11	15	
灭火 Ending	灭（mie）	3	4	7	90
					1328

Appendix 6: Table 6: '火(huo) terms,' Frequencies, and Metaphor Ratios

Fire Terms	Frequency Number		Frequency (%)	Metaphorical Ratio (%)	
	CHD	PPD		Literal	Metaphorical
化(hua)	261	167	31.8	0	100%
明(ming)	139	187	24.3	0	100%
融(rong)	118	31	11.1	0	100%
炎(yan)	42	68	8.2	100%	0
激(ji)	33	24	4.2	0	100%
烈(lie)	19	30	3.6	0	100%
照(zhao)	18	18	2.7	0	100%
热(re)	15	15	2.2	3.4%	96.6%
火(huo)	8	15	1.7	17.4%	82.6%
焦(jiao)	13	6	1.4	0	100%
光(guang)	8	7	1.1	21.0%	79.0%
煽(shan)	4	11	1.1	0	100%
亮(liang)	6	4	0.7	0	100%
红(hong)	6	1	0.5	0	100%
温(wen)	4	3	0.5	28.6%	71.0%
灭(mie)	3	4	0.5	0	100%
烟(yan)	4	2	0.4	83%	17%
耀(yao)	1	5	0.4	0	100%
怒(nu)	4	2	0.4	0	100%
炉(lu)	3	2	0.4	0	100%
灰(hui)	2	3	0.4	60.0%	40.0%
炸(zha)	1	4	0.4	80.0%	20.0%
熔(rong)	4		0.3	0	100%
暑(shu)		4	0.3	100%	0
糊(hu)	1	2	0.2	0	100%
灯(deng)	1	1	0.1	100%	0
焰(yan)		2	0.1	0	100%
烧(shao)	1	1	0.1	50.0%	50.0%
炫(xuan)		2	0.1	0	100%
闪(shan)	1	1	0.1	0	100%
燃(ran)	1		0.1	0	100%
灼(zhuo)	1		0.1	0	100%

Appendix 7: Table 7: Collocation, Semantic Prosody and Preference of 'fire' in Concordances

Classification	Fire Terms with Frequencies		Collocation	Semantic Prosody & Preference
Natural Fire	fire(s)	31.3%	(come) under fire cease fire be on fire	N* Situation: danger--trouble; urgency
	fiery	3.1%	fiery remarks	N Emotion: anger--danger--trouble
	blaze	3.1%	blaze us a trail of blood	N Situation: gun fire--danger--trouble
	flare	6.3%	tensions flare	N Situation: growing tension--trouble + urgency
Functional Fire	heat	3.1%	feel the heat	N Situation or Effect: upcoming trouble
	brand	31.3%	brand somebody something	N Action (BBC commenting on the US): bad name/slander -- deliberately caused bad consequences
	stoke	3.1%	stoke growth	P Effect or Action: boost economy--positive action
	smoke	3.1%	smoke screen	N Action (BBC commenting on the US): deceit --deliberately caused bad consequences
Organic Fire	fuel	12.5%	fuel growth	P Effect or Action: boost economy--positive action
	inflame	3.1%	inflame tensions	N Situation or Effect: growing tension --danger

* N stands for Negative; P stands for Positive; NEUT stands for neutral; Connected by --: in the same domain; Connected by +: in different domains

Appendix 8: Table 8: Collocation, Semantic Prosody & Preference of '火(huo)' in Concordances

Classification	Fire Terms		Collocation	Semantic Prosody & Preference
Natural Fire	火	1.7	煽风点火 3 水深火热 火上浇油 火中取栗 2 火坑 2 明火执仗 惹火上身引火烧身 窝火 火眼 纸包不住火 过火 火花 只许州官放火 妒火	N： Situation+Action+Emotion： chaos--danger--trouble
	焰	0.1	嚣张气焰	N Action: threat--danger--trouble
	燃	0.1	燃眉之急	N Situation: urgency
	烧	0.1	引火烧身	N Situation+ Action: effect+threat--trouble

	烈	3.6	剧烈 强烈 激烈 猛烈 愈演愈烈	N Situation: Pertaining to a negative action or event or emotion (auxiliary)
	红	0.5	红线 红利 网红	NEUT (terminology)
Functional Fire	热	2.2	热衷于+N 热点问题 热战 热爱自由	NEUT →热衷于(Be keen on)+N
	温	0.5	升温降温 温和	NEUT Situation: urgency
	灼	0.1	焦灼	N Situation: intensity, growing urgency
	熔	0.3	熔断	NEUT (terminology)
	融	11.1	金融 共融 融合/和 融洽	P (terminology) Effect
	化	31.8	全球化 数字化	NEUT (nominalizer)
	焦	1.4	焦虑焦急焦躁 焦灼 焦点聚焦	N Emotion: urgency→American society /NEUT(literal)
	糊	0.2	含糊 模糊 一塌糊涂	N Situation: mess, not clear
	炉	0.4	出炉 另起炉灶	NEUT (set phrases)
	光	1.1	高光闪光光明光荣 曝光时光目光 目光短浅	P(domestic policy) /NEUT(auxiliary) /N Action: short-sighted (of the opposite party)
	明	24.3	证明说明声明阐明表明 明确明显 透明 明目张胆 明明	NEUT (mostly auxiliary)
	亮	0.7	亮色亮眼 亮点 亮明亮相 漂亮话	P 漂亮话 tall talk (N)
	耀	0.4	荣耀 炫耀	荣耀 glory（N/P） 炫耀 show off（N）
	闪	0.1	闪电战 闪光点	NEUT (set phrases)

	炫	0.1	炫耀	N Action
	照	2.7	按照 照搬照本宣科 照做 执照牌照照片	NEUT→N Action: Do thing in the American way
	灯	0.1	走马灯开绿灯点灯	N （Set phrase）
Organic Fire	灭	0.5	消灭毁灭覆灭灭顶之灾	N Effect: (on the opposite party)
	煽	1.1	煽动 煽风点火	N Action (of the opposite party): take blame for situation growing worse
	怒	0.4	恼怒愤怒	N Emotion: (the opposite party's) emotional (the opposite party's behaviour) unfair
	激	4.2	激进激烈激发刺激激活激化激起	N/NEUT Situation + Emotion: anger, emergency

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Optimization of Bread Making Conditions with Potato Homogenate Based on Response Surface Methodology

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Abstract: This paper reports an experiment, which potato homogenate, high gluten flour, whole wheat flour, and yeast powder were used as the main conditions, and the addition amount of soft sugar, butter, and corn oil were used as other conditions. This study is based on the single factor experiment to determine the basic conditions of making potato homogenate bread. The four factors affect each other on the conditions of making potato homogenate bread, and the Design-Expert 8.0 software is used to analyze and process the experimental data of BBD. The results showed that the optimum conditions for making potato homogenate bread were as follows: the amount of potato homogenate was 134.0g, the amount of high gluten flour was 300.4g, the amount of whole wheat flour was 24.3g, the amount of yeast powder was 3.5g, and the amount of soft sugar, butter, corn oil and so on were added appropriately. When the fermentation time, baking temperature and baking time are determined, compared with the ordinary baked bread, the bread made of potato homogenate has higher nutritional value, more golden color, richer flavor, and softer taste, while the bread itself has a unique potato flavor.

Keywords: Bread, optimization of production conditions, potato homogenate; response surface methodology

1. Introduction

Potato is widely planted in China with a high yield [1]. In our country, potatoes are mainly used as vegetables, and in the aspect of deep processing, potato starch, potato noodles, potato rind, and so on appear [2]. In 2015, the Ministry of Agriculture put forward the potato staple food strategy, making it the fourth-largest staple food in China. As a staple food, there are more and more kinds of potato products, especially the appearance of noodles [3], steamed bread [4], cakes, ShaQima, and other products containing potato powder, which are more and more popular with the public. However, there is still a lack of research on potato homogenate-production related products. Potato homogenate, is the processing with the fresh potato peeled, cut into pieces, into the cooking machine, and then add a small amount of lemon juice. Such treatment can not only reduce the waste of raw materials, but also improve the utilization rate of potato itself. This study is mainly based on the conditions of making bread with potato homogenate, through the use of response surface methodology to optimize the production conditions.

2. Materials and Methods

2.1 Test materials

Fresh potato (peeled to make potato homogenate), high gluten flour, whole wheat flour, yeast powder, soft sugar, butter, fresh lemon, corn oil, etc. All the above materials are purchased from the local Wal Mart supermarket.

2.2 Test instruments

Jiuyang broken wall cooking machine (JYL-Y912), Xiao Xiong flour mixing machine (HMJ-A50B1), CASS fermentor (CF340C), electronic balance (CP214 Shanghai house), electric oven SEC-3Y, Zhuhai Sanmai Machinery Co., Ltd.), Super toast mold (11.2cm*21.4cm*6.6cm).

2.3 The process of making bread with potato homogenate

The production of potato homogenate bread, using a fermentation method [5]. The production process is as follows:

Potato homogenate, high gluten flour, whole wheat flour, yeast powder, other accessories ⟶ dough preparation ⟶ bread fermentation ⟶ forming ⟶

proofing ⟶ shaping ⟶ bake ⟶ cooling ⟶ Potato homogenate bread products

2.4 Key points of making potato homogenate bread

(1) The main purpose of putting fresh potato into water after peeling is to wash away the surface dirt and prevent its browning. Adding a certain amount of lemon juice in the process of making potato homogenate is also to prevent browning of potato homogenate.

(2) Before adding the yeast powder to the dough, stir it with warm water at 30 °C for 5 minutes to dissolve it fully, take a water bath, keep the temperature of the yeast water, and let it stand on the surface of the yeast water until there are bubbles.

(3) In the process of making dough, we must pay attention to the time of mixing dough, and the time of adding butter and corn oil.

(4) Pay attention to the temperature, humidity, and time of dough fermentation. In addition, we should also pay attention to the follow-up proofing time.

(5) When baking, attention should be paid to the baking temperature and time. In order to make bread with beautiful appearance and better expansion, we need to use toast mold.

2.5 Selection of single factor conditions for making potato homogenate bread

Through the previous series of basic experiments, potato homogenate was used as the main raw material in bread making. That is to say, the amount of potato homogenate, high gluten flour, whole wheat flour and yeast powder was selected as the main conditions. The amount of sugar, butter, corn oil and lemon juice were used as other conditions.

2.5.1 Selection of adding amount of potato homogenate

The fresh potatoes were peeled and put into the water. The slices were picked up and put into the wall-breaking cooking machine. A certain amount of lemon juice was added for homogenization. After homogenization, under the condition of other baking conditions unchanged, 60g, 80g, 100g, 120g and 140g were added. After baking, it was found that when the amount of potato homogenate was 120g, the baked potato homogenate bread was the most suitable.

2.5.2 Selection of adding amount of high gluten flour

When the amount of potato homogenate is 120g and other conditions remain unchanged, the amount of high gluten flour is selected, which is 200g, 250g, 300g, 350g, and 400g respectively. The other baking conditions remain unchanged. After baking bread, it is found that the most appropriate amount of high gluten flour is 300g.

2.5.3 Selection of addition amount of whole wheat flour

After determining the amount of potato homogenate and high gluten flour, the amount of whole wheat flour was selected. When baking bread, the adding amount of whole wheat flour is 10g, 20g, 30g, 40g, 50g, and other conditions remain unchanged. It is concluded that the taste of potato homogenate bread is better when the adding amount of whole wheat flour is 30g.

2.5.4 Selection of yeast powder dosage

After adding potato homogenate, high gluten flour and whole wheat flour, the amount of yeast powder was selected. When baking bread, the amount of yeast powder is 2g, 3g, 4g, 5g, 6g, and other conditions remain unchanged. It is concluded that the taste of potato homogenate bread is better when the amount of yeast powder is 4g.

Through the single factor experiment, the optimal production conditions of potato homogenate bread were as follows: potato homogenate 120g, high gluten flour 300g, whole wheat flour 30g, yeast powder 4g, an appropriate amount of soft sugar, butter, corn oil, lemon juice, etc., other baking conditions unchanged, the shape of potato homogenate bread was better.

2.6 Optimization of processing conditions of potato homogenate bread by Response Surface Methodology

2.6.1 Construction of response surface model for bread making with potato homogenate

Based on the above single factor test results, Design Expert 8.0 software was used to design the response surface analysis test with 4 factors and 3 levels. The test factors and levels are shown in Table 1 (See Appendix 1).

2.6.2 Response surface design of bread made from potato homogenate

According to the basic principle of Box-Behnken central composite experimental design, on the basis of the above single factor test results, the main factors affecting the production of potato homogenate bread were selected. They are potato homogenate (N1), high gluten flour (N2), whole wheat flour (N3), yeast powder (N4). The response surface analysis method of 4 factors and 3 levels is adopted, and the response surface test is designed by using Design-Expert 8.0 software. The factors and levels of the test are shown in Table 2 (See Appendix 2).

2.7 The sensory evaluation score Table 3 [6] of

potato homogenate bread is as in Appendix 3

2.8 Sensory evaluation of potato homogenate bread

The baked potato homogenate bread was sent to 13 food professionals for evaluation. According to the six aspects in Table 3 (i.e., the shape, skin color, organizational structure, elasticity, flexibility, flavor, and taste), the sensory evaluation of bread was scored, and the final score was averaged.

3. Results and Analysis

3.1 Optimization of fabrication conditions by Response Surface Methodology

3.1.1 Regression model analysis of sensory score of potato homogenate bread

It can be seen from Table 4 (See Appendix 4) that the regression of this model is significant ($P < 0.05$), and the quadratic terms N12, N22, N32 and n42 of the following factors have significant effects on the test results. Analysis of variance shows that the quadratic effect of the equation is more significant. Among them, the p-value of the mismatch term is 0.0604 > 0.05, which indicates that the fitting degree of this model is good. The coefficient of determination R^2 was 0.8515, which indicated that the model fitted well, and the experimental error was small. The regression model could be used to determine the optimal technological conditions for making bread with potato homogenate.

3.1.2 The sensory evaluation scores of potato homogenate bread were obtained according to the experimental design in Table 2, as shown in Table 5 (See Appendix 5).

$$Y=90.60+2.08N_1-0.42N_2+1.17N_3-0.50N_4-1.75N_1N_2+2.00N_1N_3-1.50N_2N_3+1.00N_3N_4-10.97N_1^2-6.47N_2^2-3.59N_3^2-5.59N_4^2$$

3.1.3 Determination of the optimal processing conditions of potato homogenate bread

Comparing the Six Figures (See Appendix 6-11), it is the response surface and contour map of the interaction of two factors in the processing conditions of potato homogenate bread. Through figure 1 (See Appendix 6), figure 2(See Appendix 7), figure 3 (See Appendix 8), figure 4 (See Appendix 9), figure 5 (See Appendix 10) and Figure 6 (See Appendix 11), we can directly reflect the influence of each factor and its interaction on the production of bread with potato homogenate [7]. In the contour map, we can see that the center of the smallest ellipse is the highest point of the response surface [8]. The shape of the contour line in the figure can reflect the strength of the interaction. The center of the contour line is oval, which indicates that the interaction between the two factors is significant, and the circle indicates that the interaction is not significant. Among the above contour graphs, the center of Fig. 2 and Fig. 3 is oval, and their factors have great interaction. The other factors have little interaction. According to the model, the optimum conditions of potato homogenate bread in stable state were predicted as follows: 134.0g of potato homogenate, 300.4g of high gluten flour, 24.3g of whole wheat flour, 3.5G of yeast powder, and appropriate amount of butter, corn oil, soft sugar, lemon juice, etc. When other baking conditions were determined, three parallel validation tests were carried out according to the above optimal conditions, and sensory score of the baked bread was 89. It can be seen that under this condition, the potato homogenate bread has the best taste.

4. Conclusion

Using potato homogenate as the main raw material to make potato homogenate bread, through the research process, the proportion of raw materials, and the optimization of baking conditions, the best production conditions were obtained as follows: The addition of potato homogenate was 134.0g, high gluten flour was 300.4g, whole wheat flour was 24.3g, yeast powder was 3.5G, and butter, corn oil, soft sugar and lemon juice were added appropriately. Compared with ordinary bread, the baked bread made of potato homogenate has better color and taste, sponge shape, clear texture, uniform pores, rich flavor, and higher nutritional value.

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Appendix 1: Table 1 Response surface factor level

	Factor			
Levels coding	N_1 Potato homogenate(g)	N_2 high gluten flour (g)	N_3 whole wheat flour(g)	N_4 yeast powder(g)
- 1	100	250	20	3
0	120	300	30	4
+ 1	140	350	40	5

Appendix 2: Table 2 Response surface test design scheme and results

Code No.	Variables			
	N_1	N_2	N_3	N_4
1	0	- 1	- 1	0
2	0	0	- 1	- 1
3	1	0	0	- 1
4	0	0	1	1
5	0	- 1	1	0
6	1	1	0	0
7	0	- 1	0	1
8	0	0	0	0
9	- 1	0	1	0
10	0	0	0	0
11	- 1	0	0	1
12	1	- 1	0	0
13	0	0	0	0
14	0	0	1	- 1
15	0	0	0	0
16	1	0	1	0
17	1	0	- 1	0
18	0	0	0	0
19	0	1	1	0
20	- 1	1	0	0
21	0	- 1	0	- 1
22	0	0	- 1	1
23	0	1	0	- 1
24	- 1	0	0	- 1
25	- 1	0	- 1	0
26	0	1	0	1
27	- 1	- 1	0	0
28	1	0	0	1
29	0	1	- 1	0

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Appendix 3: Table 3 Sensory evaluation score of potato homogenate bread

Items	Criteria for scoring	The Highest score
shape	The shape is full and complete, without focal spot and black bubble, and the shape is consistent with the shape of the variety	15
Skin color	Golden yellow, light brown, gray brown, uniform color, no white phenomenon, no visible foreign matter	15
organization structure	Fine, elastic, uniform pores, clear texture, spongy, silk like luster, no fracture, no stick after slicing	20
Elastic flexibility	It's soft and elastic. It will recover quickly after pressing	10
flavor	It has the aroma of fermented and baked bread and the unique flavor of potato, with harmonious aroma and no other bad smell	20
texture	Soft taste, not dry, not sticky teeth	20

Appendix 4: Table 4 Analysis of variance of regression equation

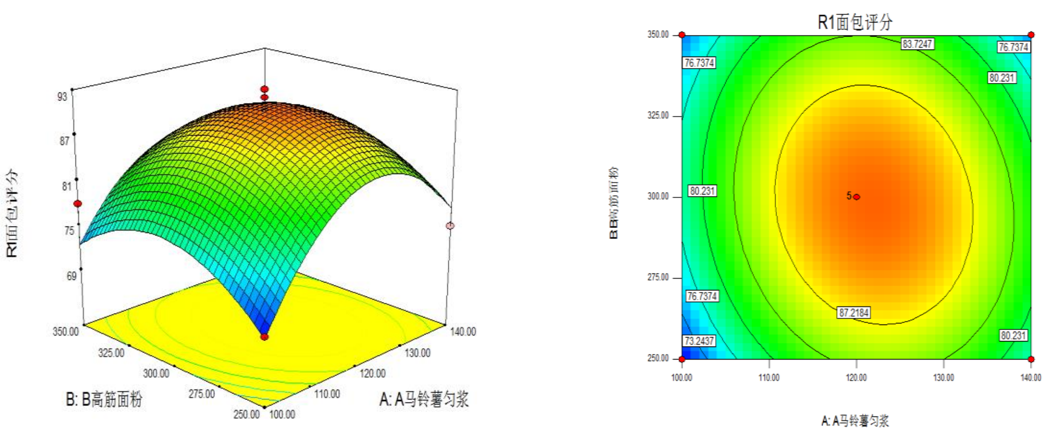
Source	Sum of squares	Degree	Mean square	F-value	P-value	Significant
Model	1085.75	14	77.55	5.74	0.0012	*
N_1	52.08	1	52.08	3.85	0.069	-
N_2	2.08	1	2.08	0.15	0.7006	
N_3	16.33	1	16.33	1.21	0.2903	
N_4	3.00	1	3.00	0.22	0.6449	
N_1N_2	12.25	1	12.25	0.91	0.3573	
N_1N_3	16.00	1	16.00	1.18	0.2950	
N_1N_4	9.00	1	9.00	0.67	0.4282	
N_2N_3	1.00	1	1.00	0.074	0.7896	
N_2N_4	4.00	1	4.00	0.30	0.5951	
N_3N_4	4.00	1	4.00	0.30	0.5951	
N_1^2	780.12	1	780.12	57.70	0.0001	**
N_2^2	271.25	1	271.25	20.06	0.0005	**
N_3^2	83.68	1	83.68	6.19	0.0261	*
N_4^2	202.81	1	202.81	15.00	0.0017	*
Residual	189.28	14	13.52	-	-	-
Lack of fit	176.08	10	17.61	5.34	0.0604	-
Pure error	13.20	4	3.30	-	-	-
Cor total	1275.03	28	-	-	-	-
			R^2 =0.8515			

Note：**Very significant level, P<0.01; *Significant level, P<0.05.

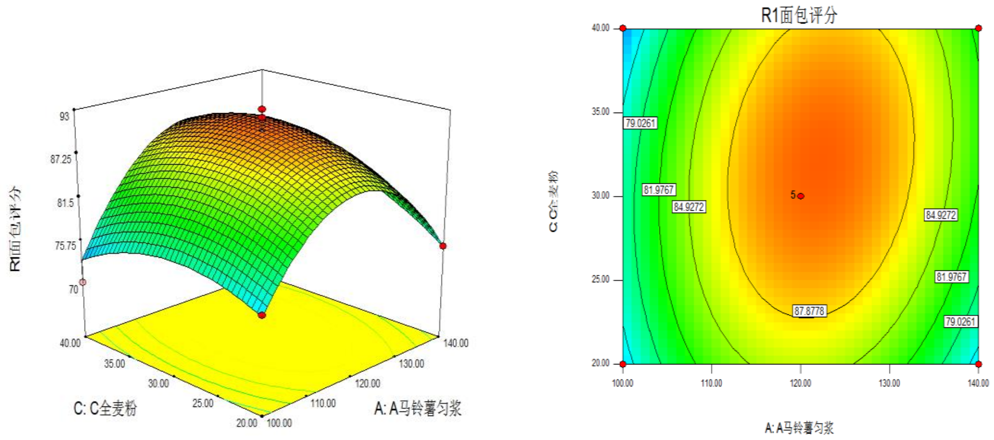
Appendix 5: Table 5 Sensory evaluation scores of potato homogenate bread

NO.	Sensory evaluation score of potato homogenate bread
1	81
2	80
3	79
4	88
5	80
6	76
7	78
8	93
9	70
10	89
11	72
12	75
13	90
14	86
15	92
16	78
17	75
18	89
19	81
20	78
21	83
22	78
23	74
24	69
25	75
26	73
27	70
28	76
29	80

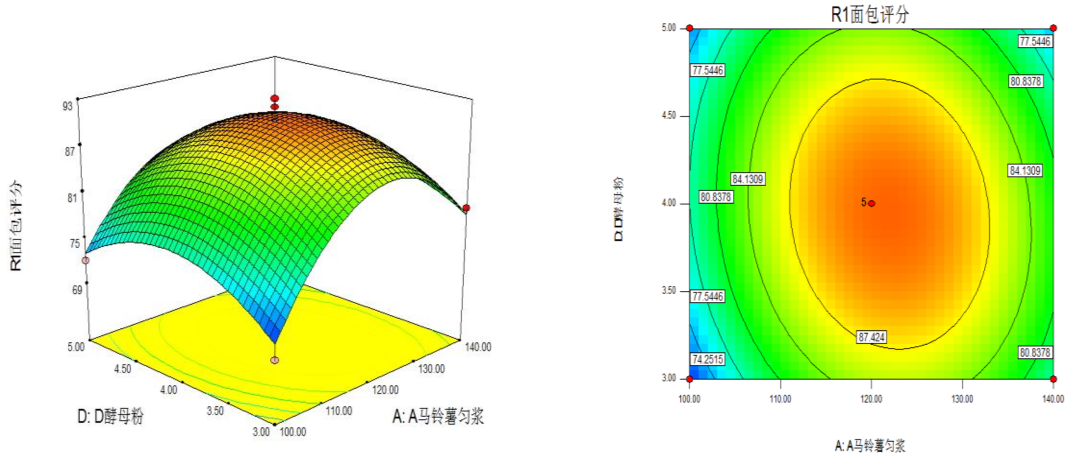
Appendix 6: Figure 1. Response surface and contour map of potato homogenate and high gluten flour



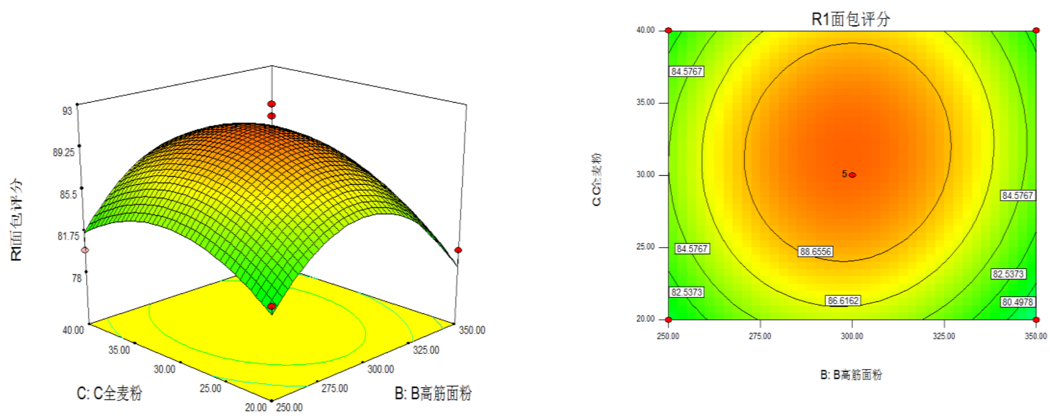
Appendix 7: Figure 2. Response surface and contour map of potato homogenate and whole wheat flour



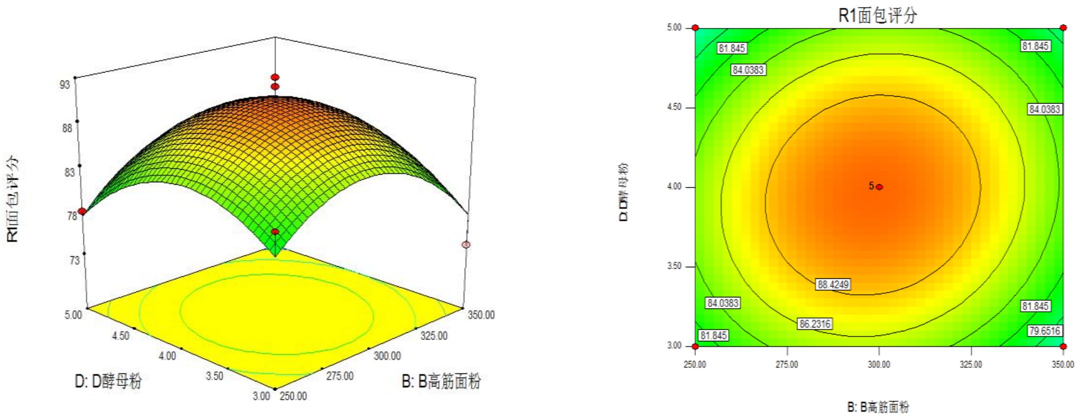
Appendix 8: Figure 3. Response surface and contour map of potato homogenate and yeast powder



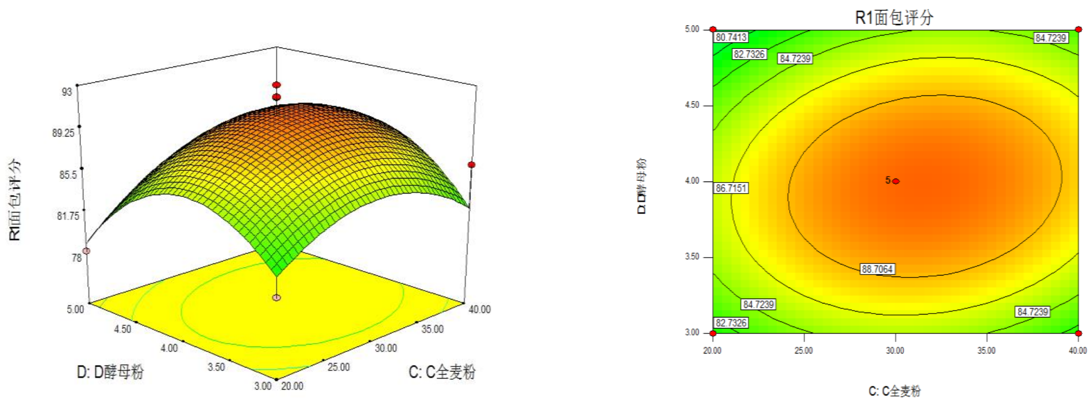
Appendix 9: Figure 4: Response surface and contour map of high gluten flour and whole wheat flour



Appendix 10: Figure 5. Response surface and contour map of high gluten flour and yeast powder



Appendix 11: Figure 6. Response surface and contour map of whole wheat flour and yeast flour



COVID-19 Apps in Australia and Singapore: Reimagining Healthy Nations with Digital Technology

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Abstract: Widely and intensively used digital technologies have been an important feature of international responses to the COVID-19 pandemic. One especially interesting class of such technologies are dedicated contact and tracing apps collecting proximity data via the Bluetooth technology. In this article, I consider the development, deployment and imagined uses of apps in two countries: Singapore, a pioneer in the field, with its TraceTogether app, and Australia, a country that adapted Singapore's app, devising its own COVIDSafe, as key to its national public health strategy early in the crisis. What is especially interesting about these cases is the privacy concerns the apps raised, and how these are dealt with in each country, also the ways in which each nation reimagines its immediate social future and health approach via such an app.

Keywords: Australia, contact tracing apps, COVID-19, digital media, health communication, infectious diseases, Singapore, smartphones

1. Introduction

A striking feature of the COVID-19 pandemic has been the use of and appeal to digital technologies – fusing together what these technologies might offer in terms of efficacious communication and public health responses to help individuals and communities cope and contain the pandemic, on the one hand, as well as extending resources for social practices, expression, making sense, persisting with and reconfiguring rituals, and conjuring with the profound affective dimensions wrought by illness, death, loss, fear and isolation, on the other.

In the pandemic, digital technologies have been used across societies, in a way that harked back to earlier ideas from the 1990s of social life being nigh wholly dependent on life in 'cyberspace', and 'virtual communities'. With widespread access to and ownership and use of Internet, mobile phones, social media, data, artificial intelligence (AI) and associated technologies already deeply, if very unequally, distributed globally, especially in middle- and high-income countries, the inception of the pandemic saw extended reliance on digital technologies – where terms of digital inclusion allowed for it. In a number of countries, governments also took the opportunity to issue calls to the acceleration of digitalisation, especially across groups and demographics where digital inclusion and take-up had been low, due to infrastructure, literacy and education, information and affordability.

One stand-out area in this regard was apps. Apps have been around since the 1980s and 1990s; however, it was the 'smartphone moment' of the launch of the Apple iPhone in 2008, and subsequent development of the apps for Apple mobile operating system devices (iOS) and launch of its Apps store, that kicked off the process by which apps became an integral part of everyday life for billions of users (Goggin, 2011; Miller and Matyivenko, 2014; Morris and Murray, 2018). From 2009 until the present day, technology companies around the world have offered their own apps and apps store, first with the 'app store' wars of 2011–2012 featuring many of the handset vendors that were household names in the worlds of 2G and 3G mobiles such as Nokia and Blackberry. Competition was much more suggestion in China, evidenced by the many Chinese app stores that dominate its huge market, and are significant distribution points for many users and communities internationally – especially given digital technologies being at the centre China's external trade, finance and soft power 'going out' (Keane and Wu, 2018). Thus, apps are key to what has been recently called 'infrastructural imaginaries' (Nielson and Pedersen, 2015; see also Anand et al., 2018; Athique and Baulch, 2019; Mansell, 2012). So it is no surprise that apps formed a key part of the infrastructures woven into the pandemic, but also a specific, highly visible and 'normalized' response (Hoffman, 2020), in the form of dedicated apps – especially for tracing people and their 'contacts'.

Apps were used for many significant purposes during the pandemic. Existing popular apps such as WhatsApp were used in some countries to send official government messages and distribute crucial public health information. The data sets generated by smartphones, computers, apps and people's use of them, such as that data collected by Apple and Google, were used by public health officials, researchers and journalists to map population or district-level activity and movement, leading to the very interesting charts, graphs and visualisations in news and current affairs reports and features seeking to map and analyse the spread of COVID and its impact on social and economic activity. Apps allied with machine learning and AI were also used by medical researchers and clinicians to assist in the diagnosis of COVID, by asking millions of users to track and enter their symptoms, diary-like, to offer a way of pinpointing when someone might have become positive. Among the many varieties of COVID-dedicated apps were apps devoted to the purpose of tracking people and their potential contacts, in case they contracted the virus. So many countries developed apps for tracking and contact tracing, with so many prototypes in development and implemented, that MIT launched a Contact Tracing App Database (https://www.scl.org/ news/11940-the-mit-contact-tracing-app-database), based on key questions from American Civil Liberties Union (ACLU) White paper (ACLU, 2020), to provide an authoritative reference point for those seeking to find their way through the claims and counter-claims of effectiveness. Apple and Google joined forces to amend their policies and create a joint protocol to make it easier for countries to use such data for contact tracing via apps (Michael and Abbas, 2020).

A full treatment of COVID contact tracing apps is outside the scope of this article (see, for instance, Cattuto et al., 2020; Hoffman, 2020; Vinuesa et al., 2020). Instead I focus on two especially interesting cases that offer us early insights into the socio-technical dynamics at play in such apps and the pandemic itself. These are Singapore's TraceTogether app and Australia's COVIDSafe app.

Asian countries were often referred to for their decisive and often authoritative responses to the pandemic. However, it was Singapore that attracted considerable early notice for its pioneering role in developing a particular kind of COVID contact tracing app – that captured the imagination of many other countries. Singapore was a pioneer in the development of COVID Bluetooth app in the form of its TraceTogether app. What was less publicised was that, shortly after launch of TraceTogether, Singapore changed tack. This modification of the app deployment and promotion, and place in the overall public health strategy, was less evident outside the city-state. Instead, Singapore's TraceTogether app became a stand-out model for other countries, rather than the various other apps being implemented around the world such as those developed by the United States, South Korea, China, India or Israel (Babones, 2020).

Australia comes into the picture because it is Australia who first and most systematically sought to build on the TraceTogether model, including its privacy safeguards, with its own COVIDSafe app. In the capstone analysis of their series of timely interventions into the privacy debates on the introduction of Australia's COVIDSafe, leading privacy scholars Graham Greenleaf and Katherine Kemp (2020) note, 'Australia's experiment is further advanced than most [countries] that are attempting to build a system based on voluntary uptake, protected by legislation (abstract, para 5). The Australian government sought to deploy COVIDSafe as a centrepiece of its effort to re-open Australian society after the national and state lockdowns occasioned by the 'first wave' of infections from March to May 2020. Where public concern regarding and discussion of privacy issues was clearly presented but publicly muted in Singapore, in Australia there was furious debate.

To explore the emergence, dynamics and implications of these two COVID apps, I will proceed as follows. First, I introduce and discuss Singapore's TraceTogether, its development and first phase of take-up and deployment. Second, I turn to Australia's COVIDSafe and consider its fast journey from incubation and policy idea to the touchstone to warrant the country's re-opening, a veritable 'national service' (as Prime Minister Morrison couched it). Third, I return to Singapore, to discuss the rebooting of TraceTogether, after nearly 3months of tepid take-up, as that country's leadership sought to reassure its population that conditions were safe to re-open social life. Finally, I offer concluding remarks about COVID apps, social and technological imaginaries and digital media, as the nation state returns (Flew et al., 2016), and seek to gauge and exert its brittle powers, in a still deeply interconnected world.

2. Singapore's TraceTogether: 'a Fair Degree of Privacy'

To great fanfare, a dedicated contact tracing app was unfurled as a breakthrough in monitoring outbreaks of COVID-19 at the population level. While many teams around the world produced similar versions, the Singapore government rolled out the first such app – called 'TraceTogether'. TraceTogether is an open source app based on Bluetooth, using the 'Bluetrace' protocol devised by a Singapore government team led by the GovTech agency – who have a track record of developing new kinds of open government apps, such as the Parking.SG app. In a 2018 interview, for instance, Janil Puthucheary (2018), Minister-in-charge of GovTech, discussed how the 'GovTech guys, as a result of having to do the code for the service . . . are having to . . . hack policy'. Puthucheary explained, 'You have to be able to codify the policy', however that 'some of our governmental processes and regulations result in extremely inelegant code' (Puthucheary, 2018: 20′ 25″, 20′ 42″).

TraceTogether was made available for adoption elsewhere via GitHub. It is a combination of centralised contact tracing and follow-up (undertaken by government health authorities) and 'decentralised contact logging'. The user downloads the app and activates Bluetooth on her device. The app can then detect another device in its vicinity, exchanging proximity information. To do so, the app uses information generated by the Bluetooth Relative Signal Strength Indicator (RSSI) readings that occur between devices over time to estimate proximity and duration of an encounter between users (Team TraceTogether, 2020c). If a person fell ill with COVID-19, they could grant the Ministry of Health access to gather their TraceTogether Bluetooth proximity data – to assist in contacting people who had close contact with the infected app user. For their part, the developers emphasised their view that TraceTogether would 'complement contact tracing, and is not a substitute for professional judgement and human involvement in contact tracing' (Team TraceTogether, 2020d). Interestingly, they also underscored that the 'hybrid model' of decentralised and centralised approach is what they feel 'works for Singapore' and that they 'built it specifically for Singapore' (Team TraceTogether, 2020b).

Released on 20 March 2020 by the Ministry of Health and GovTech (Baharudin and Wong, 2020), TraceTogether received over half a million downloads in its first 24 hours. A month later, the Singapore government claimed the app had achieved a 20% adoption rate – some 1.1 million users, of an overall estimated population of 5.7 million users (Team TraceTogether, 2020a). Upon launch in Singapore, there was relatively little public discussion of the privacy implications of TraceTogether in mainstream media and fora – although there was considerable disquiet, criticism and debate evident in blogs, social media and elsewhere.

For the most part, this is due to the structure and dynamics of Singaporean society, and its political arrangements, public policy traditions and strong systems of social control and clear support for or alternatively discouragement and sanctioning of different kinds of expression and voices – something well established in the scholarly literature (Chua, 2017; George, 2000, 2017; Lee, 2010, 2014), especially via various studies published in Media International Australia (most recently, Lee and Lee, 2019). In recent years, the Singapore government, following the dampened level of votes received by governing People's Action Party (PAP), that has ruled since the 1967, in the 2011 Election, and a more sceptical populace (Barr, 2016; Zhang, 2016), it has sought to extend consultation and formal 'listening' mechanisms to provide additional opportunities for citizens' voices. Furthermore, while there has been increased discussion of privacy with the rise of digital technologies and unprecedented expansion of data generation, collection and use, the legal and regulatory framework is relatively weak in relation to privacy rights taken-for-granted in many jurisdictions (Chesterman, 2012, 2018), even in the wake of the European General Data Protection Directive (GDPR). However, as we shall see, such debate did build over some months, as TraceTogether evolved. What is also important to note is that the Singaporean government clearly acknowledged the strength of attitudes and importance of privacy and data protection concerns, and sought to anticipate debates by building in some level of privacy protection.

The vision of TraceTogether is that proximity data gathering is 'done in a peer-to-peer, decentralised fashion, to preserve privacy', and that it relies upon a 'trusted public health authority, committed to driving adoption' (Team TraceTogether, 2020c). The developers and government emphasised that the privacy safeguards in the TraceTogether app are in effect an effort of the longstanding ideal of 'privacy-by-design' (Hustinx, 2010). The government emphasised that the information was stored on a user's phone for 21 days, and then deleted – and user's phone numbers are not exchanged, no geolocation data, personal identification data are not exchanged, so, as Minister Puthucheary noted, 'the engineering has preserved the privacy of the users from each other'– calling the app 'fairly elegant', in the way it 'preserves a fair degree of privacy' (Ng, 2020; see also GovTech, 2020). Almost immediately the app did receive notice and discussion internationally, as one of a growing number of examples of COVID-19 contact tracings apps raising privacy concerns (Hu, 2020).

Meanwhile in Singapore, TraceTogether downloads flatlined. This occasioned international deliberation, such as an article in the Wall Street Journal entitled 'Singapore built a coronavirus app, but it hasn't worked so far' (Lin and Chong, 2020). The stalled downloads of TraceTogether brought into view the conversations about privacy concerns, and whether this was a factor in user's lack of motivation to download the app. Another reason advanced was that the app posed challenges for battery draining, due to the need to keep phones on. This was a view put by the CEO of Singapore's investment or sovereign wealth company Temasek Holdings, Madame Ho Ching who has a reputation as a prolific commentator on public affairs by dint of her regular controversial Facebook posts (Ho is also the wife of Prime Minister Lee Hsien Loong) in a Facebook post of 9 May on the problems with TraceTogether (Ho, 2020a).

Whether by design or dawning acceptance, the government eased back its public communication and encouragement for citizens and other residents alike to download and use TraceTogether. Instead, it encouraged businesses, organisations, government offices and other entities to use a range of techniques to gather information about people's movements – especially when they visited or spend significant time in public places. Check-in was principally done via scanning of a national identity card or employment or work permit ID card, or via an app called SafeEntry. Based on scanning of QR codes specific to each location, the SafeEntry app, and the policy it supported, was comprehensively promoted by government. This contrasted with TraceTogether, which was only lightly promoted by the Singaporean government, with the major campaign at the outset of its launch.

Presumably, on a small island – city-state, with strong civil service corps, existing ID systems (SingPass), and tightly managed immigrant and foreign worker ID and records, and digital government and technology capabilities, this evolving contact tracing system did not need to premised on an app such as TraceTogether, which presumably government was happy to allow to 'fail fast', given the bugs it faced.

3. Australia's COVIDSafe App: 'Helping to Save Someone's Life'

Despite the effectively prototypical status of TraceTogether, one of the first jurisdictions to adopt the technology was Australia. Prime Minister Scott Morrison referred to such an app as a key requirement in Australia's ability make its transition out of lockdown (Prime Minister et al., 2020). In a radio interview with national talk show host Alan Jones, Morrison's language is instructive, because it imagines technology, especially automated technology, as taking the vagaries and morally dubious qualities of human agency out of the picture: '[W]e need to get an automatic industrial level tracing of the coronavirus . . . Now, we've been working on this automatic process through an app that can ensure that we can know where the contacts were over that infection period and we can move very quickly to lock that down' (Morrison, 2020a: para 6).

This kicked off a heated debate about privacy implications, leading a high-profile member of his own Coalition government, rural parliamentarian Barnaby Joyce to declare that he would not be downloading the app – countered by many other public figures who promised to do so. Despite the widespread criticism and concern, there was also significant support with some 2 million downloads in the first day of its release, topping the 5 million mark in early May (Koslowski, 2020), then 6.13 million by 1 June 2020 (Meixner, 2020). These figures raise various concerns, such as whether those who download the app used or continued to use it. Also what the rate of downloads were in different parts of the nation (Slonim, 2020). Let alone whether the COVIDSafe app was playing a role in helping to trace contacts and find positive cases of the virus (Preiss and Dexter, 2020).

For the Prime Minister, the COVIDSafe app was a rhetorical centrepiece of his policy initiative to vouchsafe a loosening of restrictions and begin to repair the economic damage the virus caused:

The Chief Medical Officer's advice is we need the COVIDSafe app as part of the plan to save lives and save livelihoods. The more people who download this important public health app, the safer they and their family will be, the safer their community will be and the sooner we can safely lift restrictions and get back to business and do the things we love. (Prime Minister et al., 2020: para 4)

While he drew attention to the voluntary, consent-based nature of the app, Morrison also sought to exert maximal symbolic pressure by framing adoption in patriotic terms, likening it to national service in wartime (and also not ruling out making it mandatory) (Gredley, 2020):

I'll be calling on Australians to do it as a matter of national service. In the same way people used to buy war bonds, back in the war times, you know, to come together to support the effort . . . If you download this app you'll be helping save someone's life. (Morrison, 2020b: sec 2:30)

On 1 May 2020, Morrison announced that Australia had earned an 'early mark', with restrictions being lifted in a week. In doing so, he spoke of the download numbers being a 'critical element' in deciding to what extent the easing would occur: 'Mr Morrison said not installing the app was like going into the "blazing sun" without wearing sunscreen' (Armstrong and Minear, 2020).

Various commentators and researchers expressed their views on how to promote downloading and take-up of the app. In the Australian Financial Review, a piece by technology editor Paul Smith, entitled 'Think like a founder', reported, 'Entrepreneurs and health technology experts have urged the government to adopt all the tricks of the start-up trade to get more Australians downloading the COVIDSafe contact tracing app' (Smith, 2020). The Australian Chief Scientist through his Rapid Research Information Forum commissioned a brief on Motivators for use of the COVIDSafe app, supported by the Australian Academy of Humanities, with Professor Genevieve Bell as lead author, and various leading media, communications and humanities researchers among the contributing authors (Bell et al., 2020 (Disclosure: I was a peer reviewer of this brief)). The brief suggested that 'Illustrating that COVIDSafe works as intended may assist decision-making for those yet to download the app' (Bell et al., 2020: 5). It also concluded that

The stories we will tell about Australian responses to, and uses of, COVIDSafe will matter too. The voices of trusted figures, community leaders, healthcare workers and citizens will likewise inform the adoption, and continued use of, COVIDSafe. (Bell et al., 2020: 7)

Many of these 'stories' clustered about the public perceptions and debate about the privacy, data and surveillances implications of the COVIDSafe app (Bell et al., 2020), driven by long-standing sensitivities and attitudes of Australians concerning privacy. Stretching back to the infamous and ill-fated Australia Card proposal of 1985, citizens' privacy concerns had been more recently exacerbated by the Federal government's poor handling of the ramp-up of its national e-health records registration system, MyHealth, which switched from an 'opt-in' to 'opt-out' basis in 2017 (Komesaroff and Kerridge, 2018; Goggin et al., 2019). With much at stake in terms of public health concerns at a critical juncture of the COVID pandemic, the Australian government emphasised that it was keen to adopt a 'consent-based' model, hence its interest in adapting the Singapore TraceTogether app. The government sought a formal Privacy Impact Statement from a leading law firm – which it published, with a detailed response from the Department of Health (2020b; Maddocks, 2020). This Privacy Impact documentation put important details of the workings of the COVIDSafe application, and the production, storage and handling, of resulting user data on the public record.

In response, the government emphasised that participation would be voluntary (Department of Health, 2020a); however the Privacy Impact Statement noted the potential for third-parties such as workplaces or businesses put pressure on or require people to use the app (Maddocks, 2020). Deleting the app would also delete the data stored on a user's device, but not data in the national Data Store (however, the government guaranteed that all data held would be deleted at the end of the pandemic). The government was at pains to reassure the public on the secure hosting of the COVIDSafe Data Store, undertaken by Amazon Web Services (AWS). Their guarantees related to the data privacy and security obligations applying to AWS, but also to any prospect that such data might be requested and commandeered by the US government (given AWS is headquartered in the United States, and subject to their laws).

Over some weeks a furious debate ensued, and the Australian government proposed legislation to address the key concerns. This safeguard took the form of the Privacy Amendment (Public Health Contact Information) Act 2020. The bill quickly passed through the House of Representatives and the Senate and received assent on 15 May 2020. The Act creates several serious offences dealing with COVID app data, including 'non-permitted, use, or disclosure', 'uploading COVID app data without consent', 'retaining or disclosing uploaded data outside Australia', 'decrypting encrypted COVID app data' and 'requiring participation in relation to COVIDSafe' (Privacy Amendment, 2020: 4). 'COVID app data' is defined as 'data relating to a person . . . collected or generated . . . through the operation of COVIDSafe' and is either 'registration data' or 'is stored, or has been stored . . . on a communication device' (s. 95D (5) (a-b), Privacy Amendment, 2020: 8–9).

While the bill was passed containing significant safeguards, it contained serious flaws. As summarised by Greenleaf and Kemp, these included key information upon which the law was based and would operate was not made available to the public, including advices to the Minister upon which he relied to make the earlier Determination, and, crucially, the agreements between the Commonwealth and states and territories regarding the operation of the COVIDSafe app, and collection and sharing of app data; lack of public assessment of the law by the Federal and states and territories Privacy Commissioners; and only the source code for the COVIDSafe app was released, not the code for the National COVIDSafe Data Store (i.e. the server-side of the system, where security and privacy issues often manifest) (Greenleaf and Kemp, 2020). In addition, Greenleaf and Kemp critique the narrow focus of the Privacy Act amendment on 'COVID app data', suggesting instead that what is being created is an information system they dub the 'COVIDSafe system' (Greenleaf and Kemp, 2020).

As well as the specific defects of the new law, then, the major issue it raises is precisely the one feared by many experts and members of the public alike: that the app-based contact tracing represented by COVIDSafe, and other apps around the world, represent a deepening of technologies of surveillance in social life. While such apps and measures in which they are embedded are justified as exigent public health measures crucial in the emergency conditions of a pandemic, there is wellfounded fears that this increase in surveillance will not be automatically or easily rolled back once countries feel the threat of COVID is ended or at least contained.

4.Return of TraceTogether: Singapore's Ecology of COVID-19 Apps, Technologies and Data

As Australian debates over COVIDSafe privacy subsided, there was a slow return to TraceTogether emerging in Singapore as the country's leadership gingerly considered how to effect its re-opening from its 2-month circuit breaker. A task all the more urgent, given the ruling party's dwindling time to call a national election.

Singapore's was regarded an international model of wise and swift response with its handling of its 'first wave' of infections. However, in the second week of March 2020, Singapore tightened its measures, enacting a general shutdown and stay-at-home policy that it dubbed a 'circuit breaker'. Initially the circuit breaker was announced to last for 1month, but with the rising tide of positive cases in the crowded migrant worker dormitories, the government quickly extended for a second month.

A disturbing feature of Singapore's data gathering and public reporting and communication during this period was the distinction clearly drawn and maintained in the daily bulletins between; cases in the migrant worker dormitories; and 'community cases' (these community cases were in turn divided between figures on Singapore citizens, permanent residents (PRs), migrant workers on work permits and workers on employment passes) (Han, 2020; Palma, 2020). The migrant workers were quarantined in the dormitories, with many then moved to across other repurposed facilities. And the numbers of cases were similarly quarantined, in a communicative-epistemological manner, to emphasise that the 'real' community spread remained low (usually below 10 cases in the 'community'). Those numbered among the community included citizens and PRs initially, but subsequently, foreign pass holders who do not reside in dormitories but lived among the regular population, became part of these statistics once the dormitory cases started subsiding.

Ahead of the planned end to the circuit breaker on 2 June, the government made some mention of TraceTogether at various times in its public communications. However, its main focus remained racking movement and individuals' location via check-in at the public places and business still open, such as convenience stores and shopping centres, or in taxis and ride-hailing services, especially via the SafeEntry app discussed above.

As the re-opening loomed, there was increasing discussion in government, and in parliament, on measures that would need to be implemented to contain and reduce the number of infections via contacts with migrant workers, especially once they were allowed to more regularly leave the dormitories, where they had been quarantined during the circuit-breaker period, and so circulate in the 'community'. The government announced a new app, SGWorkPass, to 'show which migrant workers can leave their dormitories for work'

(Ho, 2020). Workers will 'get a "green status" on the app to indicate that their employer has been granted approval to resume operations, and that the dorm they stay in has been cleared' (Ho, 2020). Otherwise, the app will show red to indicate they 'cannot go out for work' (Ho, 2020). This is reminiscent of the Chinese app, also adopted by India, which uses QRs, to show a user's status as green (when they may enter offices, restaurants, malls or parks), or yellow (at risk) or red (strict quarantine) (Hu, 2020; India Today, 2020).

At this stage, TraceTogether returned – this time, as a central feature of the strategy. The government had been at pains to keep TraceTogether opt-in, with Foreign Minister Vivian Balakrishnan, also Minister-in-Charge of the Smart Nation Initiative, providing reassurance that the app would remain voluntary 'as long as possible' (Balakrishnan, 2020). In early June, Balakrishnan noted the problems with TraceTogether, including the technical issues with the app not running properly on Apple. As a result, he let it be known that Singaporean government was developing a 'portable wearable device' that will achieve the same end, that if it worked could be 'distributed to everyone in Singapore': 'I believe this will be more inclusive, and it will ensure that all of us will be protected' (Balakrishnan, 2020). The government emphasised that there would no 'GPS chip' on the device, nor any Internet connectivity. Even then, the TraceTogether token would need to be physically handed to the Health Ministry for uploading of the data, if a user tested positive for COVID19 (Yu, 2020). The government's keenness to be seen to address privacy was doubtless fuelled by a public backlash against the Token.

As policy researcher and commentator Carol Soon, from the Institute of Policy Studies, noted, 'Within a short span of three days, a petition against the development of the device attracted about 30,000 signatories' (Soon, 2020). Concerns of Singaporeans regarding data privacy were addressed in a report authored by her colleagues, which found attitudes vary according to the technology involved, illustrated by the finding that nearly 6 in 10 respondents supported use of CCTV to monitor people's movements during the COVID 'circuit breaker period', but less than 50% were comfortable with having their mobile phone data tracked for contact tracing without their consent (Tay, 2020). To address such deep-seated concerns, Soon suggested the need for Singapore to urgently 'achieve a working compromise between personal data and public good', establishing principles and considering measures such as formation of a citizen's panel for public deliberation (Soon, 2020). Regardless, the first batch of 10,000 TraceTogether tokens were distributed to seniors shortly on the eve of the 10 July 2020 general election – with officials from the Smart Nation and Digital Government Group (SNDGG) suggesting they were settling in for a long haul, saying the government will 'continue to generate more awareness about the token among our prioritised population' (SNDGG officials quoted in Yip, 2020).

5. Discussion and Conclusion

At the time of writing, the pandemic rages globally, and the career of COVID-19 contact tracing apps is still unfolding – with little evidence as yet of their efficacy. However, there are already clear grounds for concerns.

The strange thing about the Australian embrace of Bluetooth-based COVID tracing apps is how strongly it figured, for a time at least, as instrumental to the country's public health response. Various commentators noted the irony that at the point COVIDSafe was being pushed upon the public, Australia was at a positive inflection point in terms of infections. As Greenleaf and Kemp note, this set the bar because other measures had already appeared to be successful in greatly abridging the spread of the virus (Greenleaf and Kemp, 2020: 6). The other obvious thing is that where apps did play a role in diminishing infection rates, these were not: (1) Bluetooth-based tracing apps, (2) and the apps used were integrated into a wider system of cross-referencing and marshalling personal identification and contact information and database systems (Greenleaf and Kemp, 2020). Yet the Australian government, for a short time at least, was very keen on the app as a symbolic game-changer in its public health approach to the pandemic – showing that it was taking charge. Rather like British Health Secretary, Matt Hancock some weeks later, when he promoted the English app-based test-and-trace system, telling the public 'It is your civic duty':

> Do it for the people you love. Do it for the community. Do it for the NHS and do it for all the frontline workers . . . you'll have the knowledge that when the call came you did your bit, at a time when it really mattered. (Hancock quoted in Bosley and Stewart, 2020)

In July 2020, there was an outbreak of COVID-19 cases that saw a lockdown re-imposed, and fuelled national concerns. At the time Victorian Chief Medical Officer Brett Sutton said the 'app has not added a close contact' that authorities had not already discovered via traditional contact tracing (Borys, 2020). Federal Health Minister Greg Hunt advised that at least 200 contacts nationally had been identified via the COVIDSafe app (Borys, 2020). For her part, NSW's Chief Health Officer Kerry Chant, the state next in line for a potential resurgence of cases described the app as 'one of the tools', but not a 'major feature' in contact tracing (Borys, 2020). In his parsing of the app's effectiveness, Australian Deputy Chief Medical Officer, Dr Nick Coatsworth, suggested that because of movement restriction, people had not been circulating, so the 'app hasn't identified those cases', and that as 'numbers go up then the app can come into its own' (Coatsworth, 2020). With the groundswell for mask use in mind, Coatsworth (2020) cleverly sought to link the two, suggesting 'if you are a supporter of mask use, you must also be based on the modelling, a supporter of downloading and activating the app' (here he refers to the study by Sax Institute, see Currie et al., 2020).

For its part, Singapore took a less dramatic, more considered approach, especially in the first phase as it developed and launched its TraceTogether app. Singaporean leaders and health officials were also preoccupied with promoting the app to gain the maximum take-up and adherence. Yet, for reasons not entirely clear as yet, Singapore was reluctant to push the adoption of the app to the extent that Australia did – an interesting situation given earlier critiques of Singapore technocratic approach to health care, in particular (Barr, 2008).

As well as the privacy concerns that emerged in the second phase of the TraceTogether Token initiative, it may be that Singaporean actors thought the app was promising but not the main game. This would be because of the already well entrenched systems of requiring and using personal data, through an extensive infrastructure of technologies (including the CCTVs that featured in the IPS report), without the kind of concomitant privacy rights and practices that would be expected in some other jurisdictions such as Australia. The task of enlisting and normalising Singaporeans participation in these aspects of its surveillance-extensive 'Smart Nation' policies, over cumulative implementation of technology is taken to be essential, but it is increasingly fraught (Lee, 2020). In the first 6months of pandemic response, then, the central element was Singapore's established SingPass and other systems of identification cards and passes, which could be used in coordination with video recordings, and the wealth of digital data available from urban transportation systems, stored valued and transit cards, ride-hailing accounts and so on. As well as also as the citizen and netizen sousveillance and activism that saw recordings of potential miscreants breaching the regulations circulated online. In addition in the early weeks of the pandemic, identifying details of people's residential locations, down to building numbers, were published in daily updates from Ministry of Health, and reprinted in media outlets.

Such measures point to the differences in privacy laws and protections in Singapore, as compared to Australia. Whereas Australian Privacy Act dates back to 1988, Singapore only enacted its first comprehensive law in 2012, the Personal Data Protection Act. At the time, legal scholar Simon Chesterman suggested that Singaporean had taken a 'pragmatic approach', potentially striking a balance between European and US approaches:

In Singapore, at least, reform is not being driven by the desire to defend the rights of data subjects; rather, it is based primarily on economic considerations, as well as the desire to position Singapore as a leader in the region for data storage and processing. (Chesterman, 2012: 414).

The Singapore laws and approach to privacy and data protection have not substantially changed since (Chesterman, 2018; Ong, 2020). Yet clearly citizens do have concerns – as the public response to the TraceTogether token suggest.

From a broader perspective, the return of TraceTogether to the fore of the Singaporean government's strategy, especially to assist with the re-opening process after its 'circuit breaker', is very interesting indeed in the context of the country's digitally underpinned governmentality (Ho, 2017; Lee, 2014, 2020; Willems and Graham, 2019). This is worth being in mind in interpreting the 2020 election, in which the government received some strong criticism by opposition candidates for its poor handling of the pandemic, especially concerning the continuing high number of cases in migrant worker dormitories. The PAP was returned to government, still with a 'super majority', of 83 seats out of the available 93. However, it was chastened by its share of the vote being reduced to 61.2% (from its 69.9% share in the 2019 election) – and an unprecedented 10 seats won by the opposition Workers' Party (Loh, 2020). In the aftermath, the government has signalled its willingness on listening to electorate concerns, especially those of young voters (Yong, 2020).

All in all, in both these case studies, we see that the variations of the COVID-19 contact tracing apps, and the technical, social, policy and design dynamics of these, offer rich food for thought when it comes to understanding apps. Health information is an area of considerable sensitivity for most people. Trust is key, and with the widespread diffusion of mobile communication there has been considerable work on how to design and implement systems that can support cooperative and sustainable sharing of information between people and authorities to map the spread of infectious diseases (Lwin et al., 2014). However, it is now evident that the task of assembling appropriate social and cultural understandings of people's lives and identities, their data selves (Lupton, 2020), the intricacies of technologies, the enmeshing of privacy expectations in design, and the construction of suitable legal, policy and governance arrangements, is challenging. In the COVID-19 pandemic, many countries across the world have had recourse to apps, as flexible agents with capacity to encode, materialise, represent and integrate such requirements, including some contradictory ones, and imagine and forge majoritarian supported social action. It is difficult not to see the turn to tracing apps as a pivotal moment in the expansion and entrenchment of surveillance technology in digital societies, of which Singapore in particular has been a leading example (Lee, 2020) – but is also playing out in contests and debates in many countries especially in Europe and Asia. How this ultimately turns out, and with what benefits for health, as well as legacies for democratic freedoms and daily life, we must wait and see.

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Analyzing a New Data-centric Medical Service Model: The Application of Smart Hospitals in China

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Abstract: This paper analyzes a new data-centric medical service model of Kaiser Permanente in the United States from its historical background, specific measures, and effectiveness of its development. Drawing on Kaiser Permanente's relevant experience, the paper recommends that the average length of hospital stay should be based on the case-mix index, various indicators such as satisfaction and safety, treatment costs, payer costs and patient-to-worker ratios. It argues that there is a need to have a comprehensive understanding of the performance of healthcare organizations and establish a patient-centered smart hospital for the Affiliated Hospital of Guilin Medical University. It aims to provide enlightenment and reference for the construction of the Chinese medical consortium and the formulation of related policies.

Key words: Data-centric medical service model, Kaiser Permanente, Smart Hospital, the Affiliated Hospital of Guilin Medical University

1. Introduction

Kaiser Permanente (KP) was one of the largest non-profit health care organizations in the United States, serving about 10.1 million members as of July 2015. It operated 38 hospitals and 619 medical offices in 8 states (based on December 2014 data), with approximately 8 million members lived in California, making it the most significant piece in the Kaiser Permanent system.

KP has brought many innovations to health care in the United States, including the notion of prepaid health plans, which spread out the cost to all members, making health care more affordable. Other innovations include physician group practice, maximizing the ability to deal with patients, and emphasizing preventative care rather than just treating the sick. It also created a more organized delivery system, putting as many medical services as possible in each facility. Kaiser Medical Group has realized the organic integration of medical payer (insurance institution), medical service party (hospital), service object (member), and service itself. KP represents its successful practice, which built an integrated medical service model based on a shared value system.

It is well known that Emergency Department (ED) waiting times are a relevant concern both to health care professionals and consumers because ED crowding may affect the quality of and access to health care. One of the great achievements of KP is that it Created a No-Wait Emergency Department. In 2007, the emergency department at KP's South Sacramento Medical Center was experiencing incredibly long waiting times for patients, and it became clear that a new and better way of doing business was needed. The chief of the emergency department was inspired to change things and became the skeletal program leader-a system of management methods and tools widely used for over 25 years in the manufacturing sector. Changes were made over six years to improve key performance measures of the department significantly. The goal was to create capacity and continuous flow in a healthcare setting without negative implications to the emergency department and patients[1] .

KP's relevant experience includes taking hierarchical diagnosis and treatment as the goal, total prepayment as the link, and information sharing as the means to establish a medical association with unified management, clear division of labor and resource sharing, which is worthy of learning and reference in promoting the construction of medical confederation in China [2].

2. KP’s Data-centric Medical Service Model

Key features of the KP Medical Model are Basic health-centered philosophy, implementing refines and modern hospital management, taking informatization as technical support, and achieving an open and transparent competitive environment. The establishment of an integrated and collaborative service system, with three integrated approaches including integration of medical insurance and medical service provision, the integration of the interests of the supplier and the buyer, and vertical and horizontal integration of service delivery models.

2.1 IT as a trusted partner in health

IT integration in the Kaiser Medical Group system. From providing iPads to health care workers rather than paper-based systems to take care of patients better to using electronic payment systems. Paperwork is very messy, but the integration of the iPad gives time and space so that employees can focus on providing better services to the patients. So, every nurse has an iPad rather than a regular paper. Moreover, integrating IT in the Kaiser model even saves more time, and more work is done by the healthcare provider in less time. The patients can get access to doctors all the time so that unless it is an absolute emergency, they do not have to rush to the emergency department.

2.2 Developing practice by using the numbers

Telemedicine is not simply a function but also an experience that can be matched with on-the-spot visits. Kaiser Permanente wants to use digital technology to build a framework, develop surroundings, interact with patients, and create a personalized healthcare system journey through video, television, and chat features. Data for personalization and understanding further simplify and enrich the interaction and experience between people and the health care system. Member-facing Digital Assets are key to care delivery.

In KP, Analytical techniques have been used to improve patients’ outcomes, simplify business operations, and cut costs, such as OWL reduces the patient wait time. When a patient was admitted to the emergency room, the average waiting time was reduced to 27 minutes, which shorten the time hospital leaders must prepare data for business operations manually, and business operations manual data shortened an average of 323 minutes a month [3].

Analytical technology helps medical institutions identify and eliminate workflow bottlenecks, provide predictive insight to operational leaders, thus helping them allocate resources more reasonably, and even helping emergency room physicians more accurately determine which patients need emergency care.

Unnecessary hospitalization is detrimental to patients, hospitals, and insurance companies, leading to longer waiting times, no beds for patients in real need, waste the precious time of emergency medical personnel, and increase the cost to all parties. On the other hand, failure to treat patients who need care can have fatal consequences **[4]**.

North Shore's emergency room technology-driven chest pain management program directly integrates predictive analysis techniques into doctors' and nurses' workflow to help them more accurately identify which chest pain patients are at high risk of a heart attack. NorthShore: Reduce the length of hospital stays with predictive analysis. The version reduced chest pain observation by 10% without increasing emergency room return, mortality, or morbidity [4].

2.4 The data-as-a-service platform

KP uses Jackson Health System (JHS) that applies its homegrown data-as-a-service platform as a strategic differentiation advantage to reduce costs while improving patient care. Data from JHS's various systems and applications is transmitted via Overwatch, the System's data integration engine, which then delivers the data to the techniques on demand.

Overwatch transfers the data through the JHS integration engine. Frequent users into the emergency room JHS an emergency room, the trigger via text and email to provide real-time warning alarm, provides patients with patients now accept what level of medical services where and the current medical treatment measures, so on. Administrator appointments then patients help patients to receive more appropriate medical care.

2.5 Shorten length of stay in ICU by using real-time data

Allowing patients to breathe autonomously is also an essential step in allowing patients to leave ICU safely, freeing beds for other patients. Penn Medicine developed ABC (wake-up and respiratory coordination) applications. The application of ABC has helped KP reduce the patient's time to the mechanical ventilator by more than 24 hours.

2.6 Mobile applications provide a view of the critical indicators

In KP, using the mobile app provides a comprehensive, near-real-time view of key indicators that measure a hospital's quality and safety level, and capacity including demand, number of beds for hospital surveys, patient discharge. The application ensures the best care service and patient experience seamlessly.

3. The Enlightenment of KP to China's Medical Reform

After experiencing "mobile medical treatment," "digital medical treatment," and "regional health informatization," in the past two years, the concept of intelligent medical treatment has received more and more attention and recognition across the world. A proposal for jump-starting national health care reform and promoting a New Model of Patient Data-Centered Medical Service led to the application of Smart Hospital in China [3-6].

With the help of the 5G technology, the innovative hospital information platform has been established so that patients can enjoy convenient, safe, and high-quality diagnosis and treatment services and alleviate the problem of "difficult and expensive seeing a doctor" [4-8]. Smart hospitals can significantly support the digitization of internal medical information, drug information, personnel information, management information, and equipment information, such as collection, storage, processing, and transmission, and sharing, to achieve the purpose of improving medical work efficiency, enhancing patient service experience, and optimizing the internal management mechanism [8] .

Moreover, with the deep integration of the 5 G and artificial intelligence Internet of things (artificial intelligence &internet of things, AIoT), has explored more intelligent medical, intelligent health application scenarios, so that high-definition video, remote consultation, remote surgery, emergency rescue, artificial intelligence (artificial intelligence, AI) The realization of new services such as auxiliary diagnosis and distance learning becomes possible, bringing new opportunities and challenges to the development of intelligent medicine [6].

How can common-sense reforms in hospital emergency departments reduce wait times, improve patient care, improve quality of care, and lower costs [12]? Hospitals can be very crowded; people must wait in long lines to get an appointment from the doctor, some people do not know what kind of doctor to visit this can make hospitals to be a place which everyone wants to avoid and unless there are an absolute emergency people will avoid visiting a doctor. This can cause a decline in the general health of the population and misconceptions about the health care system. The Affiliated Hospital of Guilin Medical University has developed a sophisticated system for effective patient care. A fully automated mobile-based healthcare system. The full use of mobile technology, from appointing a doctor to paying medical bills using a social security card, has changed people's perspective on visiting hospitals. The main advantages are reduced paper-based transactions, timesaving, the workforce can be mobilized for other services, and cloud-based data storage system. The flow of information in a hospital is very crucial for a patient to get the proper treatment in a short duration of time.

KP shows that the management of patient flow is the primary intervention. Almost all studies have shown improvement in ER performance: increasing the number of patients, reducing the time of hospitalization and the number of unobserved patients, reducing costs, and improving patient satisfaction. There are various indicators for a comprehensive understanding of the performance of healthcare organizations [12]. KP has been listed as a gold standard medical facility for medical management, quality care, and patient staff satisfaction. Using artificial intelligence, machine learning, business intelligence, analytical technology for descriptive, diagnostic, predictive, and normative analysis can provide a well-defined process for health organizations.

4.The Application of the Smart Hospital in the Affiliated Hospital of Guilin Medical University

Since 2018, the Affiliated Hospital of Guilin Medical University has applied the KP Medical Model of the Smart Hospital. Figure 1 (See Appendix 1) shows the average length of stay per year from 2013 to 2019 at the Affiliated Hospital of Guilin Medical University. From 2013 to 2017 the average length of stay was high compared to later years. 2013 computer-based record -keeping system was implemented. 2018 online mobile-based healthcare system was launched by the hospital. The average length of stay from 2018 is seen to be decreasing achieving 6.66 in 2019.

Figure 2 (See Appendix 2) indicates 2017 vs 2018 average length of stay per month and corresponding KP to the Affiliated Hospital of Guilin Medical University, before and after the use of online services：a decrease in average length of stay was observed from 2017 to 2018. In 2017 the average length of stay KPI metric was 7.63 while in 2018 it was decreased to 7.27. In 2017 the length of stay was observed high every month, while in 2018 numbers were observed decreasing every month. In 2018 the change in the numbers is due to the implementation of the online mobile-based operating system.

Figure 3 (See Appendix 3) reveals that the 2018 discharge status of the Affiliated Hospital of Guilin Medical University. The cure rate was 5.83 in 2017 and 8 in 2018. The uncured rate was 13.67 in 2017 and 4.88 in 2018. The death rate was 4.15 in 2017 and 6.48 in 2018.

Figure 4 (See Appendix 4) shows that the 2017 discharge status of the Affiliated Hospital of Guilin Medical University. A drastic increase in cure rate and decrease in uncured rate is seen from 2017 to 2018. The increase in death rate is seen due to a greater number of complicated cases. The quality of care has been improved since the use of cell phone-based healthcare system.

Figure 5 (See Appendix 5) suggests the average length of stay, cost, and payment methods of the Affiliated Hospital of Guilin Medical University from 2012-2021.

As of 2021, the Affiliated Hospital of Guilin Medical University is ranked number 11 nationwide on the average length of hospital stay（See Appendix 5: Table 1）. By the combined use of AI, machine analytics, and a team of experts. The Affiliated Hospital of Guilin Medical University， Patient-centered service launched the “mobile phone whole-process diagnosis and treatment + online medical insurance payment,” allowing patients to get maximum satisfaction.

The data sources of Table 1 are public channels such as hospital websites, annual reports of public institutions, hospital leaders' speeches. The data of this list is only for reference and is not used as a basis. At the same time, the list only lists the hospitals that can obtain the data through the above channels. For the first time, China traced the average hospitalization day as a hospital management index to 1955, and the average hospitalization day was listed as one of the four major indicators of urban hospital management. According to the 2020 China Health Statistics Yearbook, the average hospitalization day in 2019 was 9.1 days, which is still more than two days compared with the average level of OCED member states [9] .

5.Discussion

Simply put, intelligent hospitals are hospitals that optimize, redesign, or build new clinical processes, management systems. Moreover, maybe even infrastructure, all enabled by the underlying digitized networking infrastructure of interconnected assets, provided a valuable service or insight that was not possible or available earlier to achieve better patient care, experience, and operational efficiency. Smart hospitals contain three essential layers – data, insight, and access—identities, which enhance the quality of care. Smart hospitals maximize productivity, provide better patient satisfaction and flexibility, thanks to the digital transformation of the healthcare industry. Today's world is rapidly evolving, but our hospital infrastructure is often turned left to play catch up; countless hospitals are over 100 years old and are still in operation. They have minimal possibilities for advancement. Yet they have to deal with the increased demand, and they cannot do this with the infrastructure and technology they currently have. Smart hospitals are technically equipped hospitals that offer valuable insights, services, and patient engagement, and automation services. Operational efficiency is enhanced by streamlining logistics and inventory, thus reducing operational costs. The global intelligent hospitals market is driven by a rise in various diseases, a sudden outbreak of infectious diseases in the year 2020, and technological advancements such as biotelemetry and block chain technology. This, in turn, is also needs to boost the intelligent hospitals market during the forecast period. Wisdom inward, wisdom in medical treatment, and wisdom in diagnosis and treatment are reflected in the application of modern information technology and equipment in different scenarios. For example, resident health card self-service machine, outpatient self-service robot, wisdom in decision-making, Artificial Intelligence Image Accurate Diagnosis, wisdom in logistics, Intelligent Medicine Cabinet system, Intelligent Medicine Cabinet system for Anesthesiology Department and Outpatient Pharmacy, and so. Various systems and software ease the implementation of intelligent hospitals concepts and offer an opportunity to create new possibilities during clinical practice and management. For instance, a robotic center, a 3D printing facility, offers a cross-communication platform, which further optimizes patient care and provides follow-up care to patients. This factor is such likely to boost the intelligent hospital's growth during the forecast period. Technology such as AI/machine learning and virtual models of care is rapidly changing health care delivery, but it cannot be done in a panacea. Improved clinical care and population health will depend on accurate data collection and better analysis. New technologies such as big data, block chain, artificial intelligence, cloud computing, microsurgery, face recognition, and so on have driven a series of new medical applications, thus posing new challenges to the IT infrastructure of the medical industry.

As the population grows, the demand for healthcare services is rapidly increasing, especially in the current COVID-19 crisis. On top of this surging demand, patients also have ever-increasing expectations of the quality of healthcare treatments they undergo and the services they are provided with. In addition to all of this, laws and regulations are becoming increasingly strict and complex. By 2030, the world will be home to more than 8.5 billion people, so pressure on the healthcare system will only increase as time goes on. These, therefore, contribute to constantly rising costs, and this is where an intelligent hospital comes in to reduce these costs. A human-centered approach, top management support, work standardization, resource allocation, and adaptation to the local context seem imperative for success. Furthermore, higher-quality studies are that smart hospitals can play a significant role in the recovery from the COVID-19 pandemic; this digitally controlled health management system can improve healthcare performance during COVID-19 pandemic days[12]. The technology can aid in a social distancing between infected patients and non-infected patients to help curb the growth and spread. The pandemic has placed the healthcare industry under immense pressure. Any technology that presents a solution is welcome. Technological advancement offers various technically advanced solutions, which further enhance the services provided to patients. Various organizations are increasing their efforts to support the healthcare process and boost interconnectedness among patients and physicians. Innovative technologies seek to improvise and expand treatment options, thereby reducing the healthcare burden. Moreover, innovation leads to the development of devices such as new sensors connected to mobile applications, which further guide patients to conduct daily exercise routines after orthopedic surgery. The data is shared with the physician to track the physical development of patients. Health is the common pursuit of people, but the disease is also accompanied by life. There is no doubt that everyone will die of illness. Build a regional medical information platform for health records, the informatization of patients and medical staff. "Take the patient as the core, formation to electronic medical records as the carrier, supported by clinical information system application information system. Build business system integration and data set as the core of the intelligent hospital platform, set up supporting the elaborating management decision support system, realize electronic medical record application level 5, connectivity level 4 grade a, create the wisdom of leading domestic hospital". By often adopting feedback, the development team can constantly improve the solution to provide the most important and accurate information and functionality to support ease of use and maximize the value of medical services."

Intelligent construction is the only way for the future development of hospitals and the core competitiveness of hospitals in the future. *Hospital wisdom* is a systematic project, designed to organically integrate the complex elements, in order to maximize the function of the hospital [10]. A new model of patient-centered intelligent hospital basic medical service is constructed. A people-oriented approach, highest management support, job standardization, resource allocation, and adaptation to local backgrounds seem critical to success. Furthermore, higher quality research is needed: specific research design, appropriate statistical tests, and outcome measurements are required**[11]**. Humanized service process design should be patient-centered, efficient, and efficiency, information technology, and team spirit as the guidance. Objective To solve all kinds of crowding and chaos in patients, be equal and orderly, and reflect the "patient-centered" service purpose. Before mass implementation, further research is needed to assess the actual capacity of lean interventions to improve healthcare services**[12]**.

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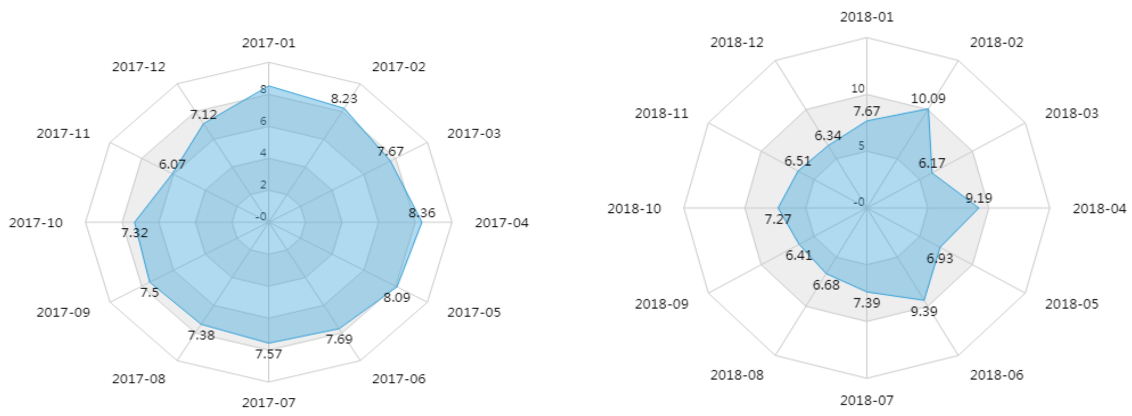
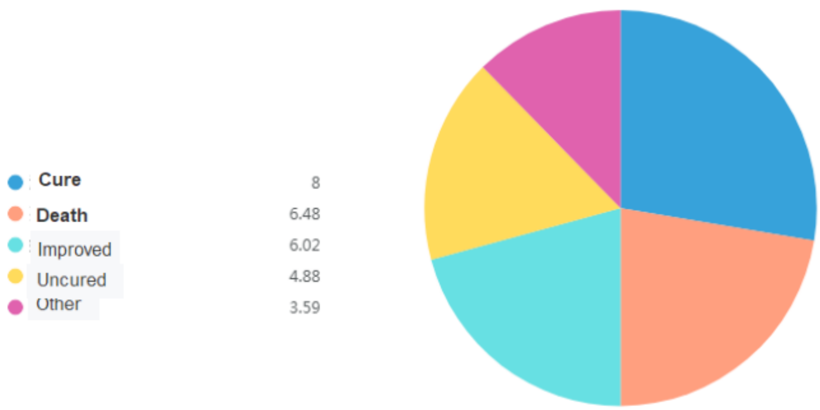
Appendix1: Fig1: Average length of stay per year 2013-2019 at Affiliated Hospital of Guilin Medical University

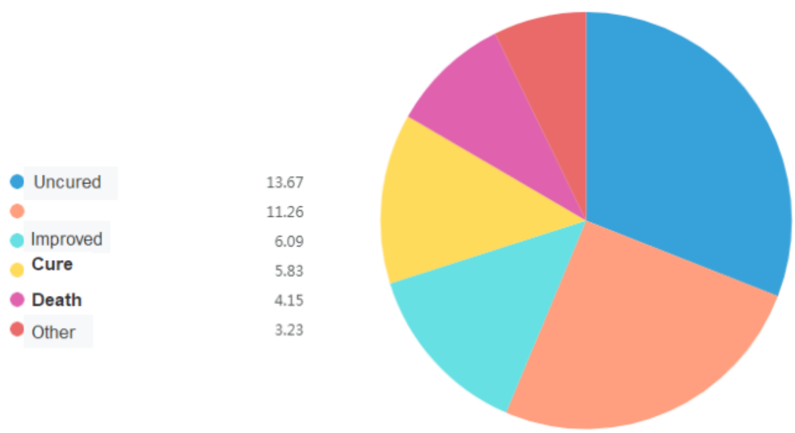
Appendix 2: Fig2: 2017 vs 2018 average length of stay per month and corresponding KP/ Affiliated Hospital of Guilin Medical University



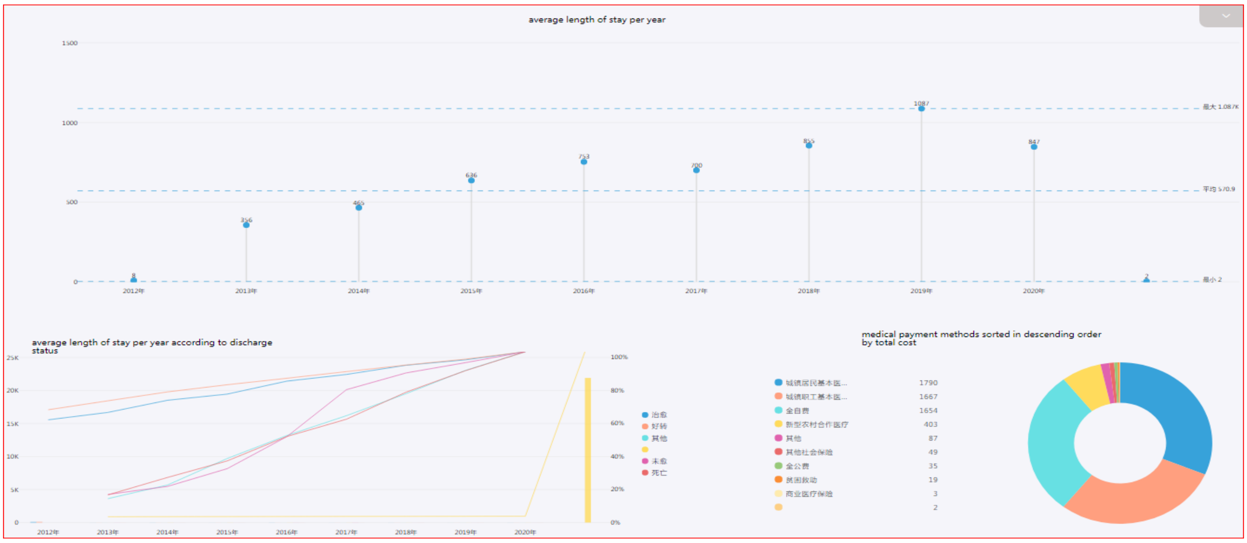
Appendix 3: Fig3: 2018 discharge status Affiliated Hospital of Guilin Medical University



Appendix 4: Fig4: 2017 discharge status at Affiliated Hospital of Guilin Medical University



Appendix 5: Fig5: Average length of stay, cost, and payment methods of the Affiliated Hospital of Guilin Medical University from 2012-2021



Appendix 6: Table 1 Ranking of average stay days of the General Hospitals in China in 2020

Ranking	Hospital Name	Location	Average hospital stay
1	Peking University Third Hospital	Peking	4.96
2	Renj Hospital Affiliated to Shanghai Jiao Tong University School of Medicine	Shanghai	5.47
3	Zhongshan Hospital, Fudan University	Shanghai	5.50
4	Run Run Shaw Hospital Affiliated to Zhejiang University School of Medicine	zhejiang	5.71
5	Ninth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine	Shanghai	5.80
6	Peking Union Medical College Hospital	Peking	5.86
7	Tenth People's Hospital Affiliated to Tongii University	Shanghai	5.88
8	Southwest Hospital of Army Military Medical University	Chongqing	6.00
9	The First Affiliated Hospital of Zhejiang University School of Medicine	Zhejiang	6.03
10	Second Affiliated Hospital of Zhejiang University School of Medicine	Zhejiang	6.09
11	Affiliated Hospital of Guilin Medical University	Guangxi	6.20
12	The First People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine	Shanghai	6.26
13	The Sixth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine	Shanghai	6.50
14	Peking University First Hospital	Peking	6.50
15	Shenzhen Hospital, University of Hong Kong	Guang dong	6.60
16	Xijing Hospital, Air Force Medical University	Shaanxi	6.73
17	Beijing Friendship Hospital. Capital Medical University	Peking	6.74
18	Bejing Anzhen Hospital, Capital Medical University	Peking	6.79
19	Beijing China-Japan Friendship Hospital	Peking	6.84
20	Peking University People's Hospital	Peking	6.90