Zero Covid-19 or coexist?

Differences in sensemaking on COVID-19 between Chinese people living in China and the Netherlands

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Abstract

Purpose

The COVID-19 pandemic has had a profound impact on the physical and psychological well-being of people across countries. This study aims to explore the differences in sensemaking about COVID-19 between Chinese people living in China and the Netherlands.

Method

To answer this questions, researcher used semi-constructed one-to-one online interviews to investigate how sensemaking was accomplished for COVID-19 by residents living in China (N=20) and the Netherlands (N=20), respectively.

Results

The results show that the sensemaking ecosystem was completely different for participants from both countries. The results also showed that participants had different perceptions of the severity of COVID-19 because they received different sources of information, which also led to different perceptions of measures, vaccines, how they affect lives and views on the future.

Conclusion

This study concludes that Chinese people living in China and the Netherlands have different sensemaking about COVID-19. People living in China receive a single source of information and have a more subjective view of the COVID-19 virus and thus are more convinced that COVID-19 is a serious virus, while people living in the Netherlands receive multiple sources of information, have a more objective view of the virus and are more convinced that COVID-19 is a flu-like virus.

Keywords: sensemaking, sources of information, COVID-19 vaccine, severity of COVID-19.

Introduction

The COVID-19 pandemic has taken a huge toll on humanity and has already greatly affected the lives of people in all countries (Asare & Barfi, 2021). As of November 2022, mankind had been fighting this virus for three years. During this time, test strips had been invented to detect COVID-19, vaccines had been developed to prevent COVID-19 and specific drugs had been developed for the virus (Majumder & Minko, 2021). Governments and organisations around the world had also taken a number of restrictive measures, such as restrictions on the movement of people, quarantines, wearing of masks and curfews (Haug et al., 2020). Some studies have shown that the side effects of these restrictions have gone beyond the physical damage caused by the virus itself (Ellis, 2021). For example, restrictions can lead to economic decline and can have a serious impact on people's mental health (Poudel & Subedi, 2020). Exploring the nature of sensemaking and the process of sensemaking can shed light on people's attitudes towards COVID-19.

During the pandemic, a number of scholars studied sensemaking about COVID-19 in various cultures and countries (Bajaj et al., 2021). Sensemaking theory suggests that sensemaking is an ongoing process in which people must first notice something out of the ordinary (Gordon, 2022). Earlier research has shown that COVID-19 sensemaking is different for people from different countries, as the factors that influence sensemaking are different in different contexts (Stephens et al., 2020). The current literature, however, provides little insight into the sensemaking of COVID-19 for people of the same cultural background living in different countries.

Uncertainty management theory suggests that when people are faced with uncertainty they rely most on fair information (Van Den Bos, 2001). During the COVID-19 pandemic, people's minds were filled with uncertainty (Omar et al., 2021). Research shows that uncertainty arises during a pandemic because people's lives are disrupted by the pandemic and therefore cannot reasonably predict the future (Pak et al., 2021). Furthermore, when people face uncertainty, they will be receptive to the viewpoint they believe in and reject other different views (Anderson et al., 2019). This explains why people's sensemaking about COVID-19 is quite different.

Social cognitive theory explores the unique ways in which individuals produce and continue behaviours and the social context in which they are performed (May-Varas, 2022). The theory considers a person's past experiences as factors that influence behavioural actions (Lamorte, 2022). During pandemics, people's sensemaking for COVID-19 is heavily influenced by their social context, and human activities may differ when people are in different social contexts (Romano et al., 2022). The theory of planned behaviour suggests that human behaviour is the result of deliberate planning (Luenendonk, 2019). In pandemics, people's sensemaking for COVID-19 is the result of what can be planned. People receive information about COVID-19 from their lives and unconsciously complete sensemaking about COVID-19 (Procentese et al., 2021).

In the current literature, few researchers have focused on how sensemaking differs between Chinese people living in the Netherlands and Chinese people living in China. In previous studies on COVID-19 sensemaking, the subjects of the study were from different cultural backgrounds and their place of residence was different as well (Rosa et al., 2021).

This might have resulted in differences in sensemaking. This study aims to explore the differences in sensemaking about COVID-19 between Chinese people living in China and the Netherlands.

The paper first presents the pandemic states in China and the Netherlands in chronological order, after which a theoretical framework is provided to investigate meaning construction, followed by a description of the research methodology and the findings. In the discussion section, the paper presents the main results and the theoretical contributions of this study, and finally presents the upper limits of the study and suggestions for future research.

Research Context

COVID-19 in the Netherlands

In order to give the reader a more comprehensive picture of the COVID-19 pandemic as experienced by the participants in this study, this section provides a brief timeline of the spread of the pandemic in the Netherlands. Compared to other European countries such as Spain and Italy, the Netherlands underestimated the damage caused by the COVID-19 pandemic at the very beginning of the pandemic (Félix-Cardoso et al., 2020). Preventive measures were still not in place in the country, even though several months had passed since human-to-human transmission began in Wuhan China (December 2019) and the first local case had been confirmed. When the spread of COVID-19 accelerated in the Netherlands, it became clear that an outbreak of this virus could have devastating effects (McNeely, 2021).

When COVID-19 spread to the Netherlands, the main strategy of the Dutch government was to live with the virus (Antonides & van Leeuwen, 2020). The COVID-19 policy was developed to ensure that family doctors and intensive care units were not overwhelmed. In order to ensure that the public health system can function properly, the Dutch government gives 'advice' to people whenever possible, rather than enforcing mandatory regulations. For example, the Dutch government has issued statements advising individuals to travel less, keep social distance, etc. However, the Dutch government will enforce some mandatory restrictions, if intensive care units and hospitals become overloaded to a certain extent. Restrictions such as curfews are introduced, while social gatherings are banned. There is a severe shortage of intensive care unit (ICU) beds in Dutch hospitals compared to neighbouring Germany. The Netherlands, compared to neighbouring Germany, has been more severely crippled by a shortage of intensive care unit (ICU) beds in hospitals. Some patients have to be transferred by helicopter to German hospitals for treatment (Slagt et al., 2022). In May 2020, the Dutch government closed schools but reopened them in June 2020; thereafter, events such as assemblies were allowed, as long as participants maintained a social distance of 1.5 metres and no more than 30 people attended.

During this time, the Dutch government sent invitation letters for vaccination to every adult registered at the city hall, including elderly people living in nursing homes. With the invitation letter, people could go to the designated place to be vaccinated. The Dutch government hoped that the vaccination would build up herd immunity in the population so that people were less likely to become seriously ill after contracting COVID-19 and buy time for the whole community to build up an immune barrier.

With the second wave of illness peaking in December 2020, the Dutch government again closed schools and restaurants, allowing only distance learning and takeaway services, and instructed all employees to work from home if possible and to cancel non-essential outings. At the same time, there was debate over whether more lives would be lost after the restrictions were dropped and whether continued restrictions would lead to a loss of income for young people. In 2021, the Dutch government's policy did not change significantly. For example, the Dutch government continued to restrict school openings and public gatherings, but a few months later, the Dutch government eased restrictions. The Dutch government attempted to make the COVID-19 infection curve as smooth as possible in order to prevent a surge in infection rates that would deplete healthcare resources. As of July 2022, the Dutch government abolished almost all restrictions, such as wearing masks and keeping social distance. Society seemed to have returned to its pre-pandemic state, with restaurants and schools reopening.

In general, the Dutch government has placed greater emphasis on individual obligations and has responded to the COVID-19 pandemic through a series of relatively non-mandatory measures. Some academics argue that the Dutch policy is so lax that people may misinterpret it or refuse to comply with it. A few days after announcing that access to bars and other public places would be allowed if people had received one Janssen immunisation, the Dutch government reversed its decision for example. The Dutch government declared that wearing a mask was ineffective in preventing the spread of COVID-19, though the effectiveness of wearing a mask in controlling the pandemic had been proven in other countries (Feng et al., 2020).

COVID-19 in China

China's response to COVID-19 at the start of the pandemic was in line with that of the Netherlands. The Chinese government was the first country in the world to identify the COVID-19 virus that could be transmitted between humans (Liu & Saltman, 2020). When the COVID-19 virus began to spread in Wuhan, China, in December 2019, the country was in the midst of celebrating Chinese New Year, so it chose to treat the outbreak as a typical cold. As the spread of the virus accelerated, Chinese people began to realise the devastating effects of the virus, which could even result in the loss of life.

The primary goal of the Chinese government is the complete elimination of the virus within China (Chen et al., 2022). This goal was maintained until December 2022. The response strategy for COVID-19 was established, with the aim of ensuring that no one in a city would be infected between the start of the pandemic in 2019 and December 2022. The government issued a plan to combat the infection, and people would then comply with the government's policy to eradicate the virus. People already infected with the virus were moved to centralised quarantine camps to curb the spread of the virus. In June 2020, the Chinese government closed all public places, such as shops and schools, and all travellers were asked to wear masks; only vital public transport was available. The Chinese government implemented a QR code measure in December 2020. Individuals must apply for a QR code to ensure that their travel would not be affected. QR codes came in three colours: red, yellow and green. Yellow marked a risk of infection (All people were tracked so that once an

infected person is found, the QR code of individuals who might have come into contact with the infected person would turn yellow.) and red means immediate quarantine. The green QR code needed to be presented at any border crossing or in any public place. And in 2021, the Chinese government introduced the concept of dynamic virus clearance and a QR code containing PCR results. If the PCR test was not completed within 72 hours, the QR code would turn yellow. Schools and public places were allowed to reopen, but if there was a confirmed case in a public place, they then must remain closed until there were no new cases. In 2022, the time for PCR testing was further reduced and people needed to obtain a negative PCR certificate within 24 or 48 hours to enter public places.

During this time, people were encouraged to get vaccinated. The Chinese government hoped to achieve herd immunity through vaccination and reduce the incidence of serious illnesses developing after infection. All people working in state-owned enterprises and the government, as well as those working in local government-owned enterprises, were required to be vaccinated. In schools, students were also required to be vaccinated.

As in the Netherlands, the challenges posed by the policy were debated: dropping some restrictions could lead to infection and death among the elderly while maintaining certain restrictions could lead to loss of income for young people. The Chinese government maintained a zero- tolerance approach to the virus until December 2022 to prevent its spread among the population. The Chinese government attempted to keep the infection curve for COVID-19 infinitely close to zero to prevent a rise in the infection rate and a drain on medical resources. In November 2022, the Chinese government tightened all measures of inactivity introduced, such as wearing masks and keeping social distance. Cinemas, restaurants and schools were allowed to reopen, but must be closed if an infection occurred. People would need to be quarantined in centralised quarantine camps.

In general, China has placed greater emphasis on the government’s responsibility in combating the COVID-19 pandemic by isolating the virus from individuals. Some scholars argue that China's restrictions were too harsh and that there were many avoidable losses. For example, food was wasted during the Shanghai lockdown, and Beijing residents were unable to access medical care because of the lockdown. It has been argued that many people lost their lives because they did not receive timely medical care, or suffered physical and emotional damage from food shortages after some restrictions were put in place.

Table 1

Chinese and Dutch policy response to COVID-19, from March 2020 to June 2022

Countries	China	The Netherlands
March 2020	There was a partial lockdown in Hubei and Henan and people were asked to stay at home	The Prime Minister asked residents to stop shaking hands and asked people in North Brabant to work as remotely as possible and people gathering were banned, including school and sports activities
June 2020	Lockdown in infected cities and closure of schools and non-essential shops People need to wear masks when leaving their homes Public transport for essential travel only	People are allowed to regroup as long as they do not exceed 30 people and keep a distance of 1.5 metres. The schools are reopened and students are required to keep a distance of 1.5 metres
September 2020	Large-scale testing began in Shandong Province, such as PCR testing of 9 million residents in Qingdao.	The government has announced that cafes, restaurants and bars will be closed for at least two weeks. And from December 1, masks must be worn indoors
December 2020	Closure of schools in cities with infected people Introduction of a health code system where people need to scan a health code to travel before they can enter public places Discourage inter-city travel and non-essential international travel	Closure of restaurants and non-essential shops Closure of gymnasiums and cinemas Working from home is highly recommended Try not to travel abroad Curfew will come into force in January 2021
March 2021	A large number of new cases were detected in the border city of Yunnan Province, where residents living in the city were asked not to leave their residences and were required to undergo PCR testing.	Opinion polls show that 70% of residents support the enforcement of the curfew, but lawsuits have also been launched against the government's curfew. Medical emergencies, dog walking, and essential work were

		identified as exceptions to the curfew.
June 2021	A policy of dynamic zeroing and mass nucleic acid testing to identify all potentially infected people and grouping those who test positive together to await a cure	Re-admission to travel abroad Restaurants can re-open but need to maintain 1.5m distance Gymnasiums can re-open
September 2021	Large-scale new infected populations have emerged in several cities. Examples include Fujian Province and Heilongjiang Province. Residents were asked not to leave their homes and to undergo mass PCR testing	The government proposed to implement the 2G rule and introduced a vaccine certificate or rehabilitator certificate. People with this certificate were allowed to enter restaurants and as theatres and museum.
December 2021	Cross-regional travel is still prohibited or not recommended Schools remain closed if there are infected people in the city Grid-based management and many camps have been built to cope with centralised quarantine	Non-essential shops can reopen, but only for pick-up Gym re-closed School re-closed, online only
March 2022	The massive lockdown continues with a city-wide lockdown and residents being asked not to leave Shanghai. Factories such as those of Toyota, Volkswagen and Apple suppliers ceased operations	Basically all restrictions are lifted. If you test positive you need to stay at home until you are symptom free before you can enter public places.
June 2022	Centralised quarantine systems have been further strengthened so that people are no longer allowed to leave their homes if there are infected people in the community in which they live Nucleic acid testing is required every 24-48 hours If more than a certain number of people are infected, the whole community will be moved to another city for quarantine	No longer required to wear a mask on public transport Schools reopen Restaurants allowed to reopen

Theoretical framework

COVID-19

There are different views on the way to deal with the pandemic caused by COVID-19 virus (Schröder, 2020). Some support a strict virus clearance programme, as in China, while others suggest that restrictions should be lifted in an orderly manner, as in the Netherlands, when the virus becomes less virulent (Khan & Faisal, 2020). Others believe that people should be deliberately infected with the virus in order to use it as a natural vaccine (Eyal & Lipsitch, 2021). However, the indirect effects of the restrictions on people, in addition to the direct deaths from viral diseases, need to be taken into account when the aforementioned discussions are conducted (Lucas & Bamber, 2021).

Since December 2019, COVID-19 has directly or indirectly killed nearly 17 million people worldwide, yet its impact on humans far exceeds this number (Usaini, 2022). COVID-19 infection causes a variety of problems for at least 7 billion people worldwide, ranging from the acute effects of the disease to chronic COVID-19 known as persistent symptoms (Brüssow & Timmis, 2021). Research has shown that COVID-19 was second only to cardiovascular disease in terms of community health impact (Wyper et al., 2022). According to the World Health Organisation, the COVID-19 pandemic has contributed to a 25% increase in the prevalence of anxiety and depression globally, and the report states that the pandemic has had the most severe impact on young people and women, who are at very high risk of resorting to suicide and self-harm (World health organisation, 2022). In addition, some may develop complete hearing loss or severe brain damage (Nourazari et al., 2021).

The socioeconomic impact of these policies should also be thoroughly reviewed (Ceylan et al., 2020). In economic terms, the impact of the COVID-19 pandemic has been enormous (Goodell, 2020). Amid significant volatility in global financial markets, US stocks melted down 5 times between 9 March 2020 and 18 March 2020 (Huang et al., 2022). Global trade growth also decelerated, the first decline since the financial crisis in 2008 (Sahoo & Ashwani, 2020). Not only that, but the pandemic has had a significant impact on supply chains and cross-border investment (Free & Hecimovic, 2021). It has reduced companies' revenues and undermined investor confidence, which in turn has led to less enthusiasm for cross-border investment (Hanemann et al., 2021). According to research in 2021, a global COVID-19 pandemic could lead to a loss of all the development gains made during the decade (Decerf et al., 2021). Globally 114 million people have lost their jobs and 120 million people have fallen into extreme poverty (World Bank Group, 2020).

Globally, the COVID-19 pandemic is not only physically stressful for people, but it is also hazardous to their psychological well-being (Varshney et al., 2020). Studies have shown that the pandemic has led to increased government expenditure on health care around the world, decreased life expectancy of the population, as well as reduced physical activity and delayed treatment of chronic diseases (Kendzerska et al., 2021). In every country, there are many people who are unable to continue their pre-pandemic lifestyles and suffer from grief and other mental illnesses (Sahu et al., 2020). People have been forced to change their

lifestyles: students have to take online classes, business people need to work remotely, and many have to cancel their vacation plans (Fatmi et al., 2021).

Information seeking

Kuhlthau (2005) states that information search is the process or activity of people trying to access information. It is widely accepted that information search is dynamic and nonlinear (Foster, 2004). Information seeking stems from a desire to learn new things (Litman, 2005). For example, information-seeking behaviour occurred when the COVID-19 virus first appeared (Elsner et al., 2022). Generally, individuals can use the opinions of those around them or the internet as a source of information. Some information is the information they actively access while some information is information they receive passively. Different sources of information can influence the public's perception of the COVID-19 virus, raising or lowering their fear of the virus (Šiđanin et al., 2021). Research has found that information seeking is associated with communication behaviour (Robson & Robinson, 2013). When seeking information in their lives, people rely on information disseminated by others and the media (Shklovski et al., 2008). The level of trust people place in the information they receive depends on the source of the information (Murphy et al., 2021). For example, some people are more inclined to trust the information provided by those around them, while others think updates in the media are more reliable. The media is one of the most popular sources, allowing people to express their opinions and spread them globally, but it is also full of rumours and unreliable news (Rani et al., 2021). Confirmation bias may arise if people receive the same type of information from the same source for a long time (Frost et al., 2015). Indeed, misinformation about the virus on various social media platforms has led to significant public health problems, fuelled misconceptions about the COVID-19 virus and undermined public confidence in overcoming COVID-19 (AL-Jalabneh, 2023). Statistics show that government medical guidance remains the most influential source of knowledge about the virus (e.g. Coronavirus Disease (COVID-19), Herd immunity, lockdown and COVID-19, n.d.).

Järvelin and Wilson's (2003) proposed a framework for information search, which positions information seeking as a concept in information behaviour. The framework consists of examining what information individuals need and why they look for it, what purpose they have when they find it and how they will use it (Wilson, 1981). It can also be seen that the information seeking process demonstrates how individuals interact with different sources of information depending on different information needs and contexts. Wilson's theory suggests that different people may have different information-seeking habits and choose to believe sources they use frequently when faced with a problem (Wilson et al., 2002). The information use component of the framework suggests that information from different sources influences people's perceptions of an issue. Information use, a component of the framework, suggests that information from different sources influences people’s perceptions of an issue. The public perception of COVID-19 is a case in point (Yang et al., 2022).

Not everyone has equal access to information (Varian, 2005). When information is searched for, people often do not get the full picture of things. Chatman (1986) proposes the concept of mindfulness of poverty. Information poverty does not refer to a lack of

information, but rather a lack of worldview (Chatman, 1996). In other words, a person's accumulated experience a person in their own world may lead to distrust of information provided by people outside of their own life experience. This leads some people to distrust the media and believe more in what is happening around them. (Watts & Blenkinsopp, 2021). When there is a discrepancy between media information and actual events, individuals are more inclined to trust their own eyes than the media (Rokeach & DeFleur, 2016). For example, people may underestimate the severity of COVID-19 even if the media says that COVID-19 infection has serious consequences because those around them do not have the severe symptoms reported.

Sensemaking

According to Karl Weick, people should be seen as changeable mental models rather than as fixed blueprints (David & Hoffman, 2011). Sensemaking is an example of such a process (Langenberg & Wesseling, 2016). Sensemaking is a socially created process that requires the construction of plausible meanings to rationalise people's actions in retrospect when different cues interrupt an individual's ongoing actions (Maitlis & Sonenshein, 2010). This reveals how people interpret and view an event from their perspective.

When people encounter unexpected or confusing situations, they tend to use sensemaking in order to obtain the desired solution (Balogun & Johnson, 2005). Sensemaking is an integral part of the human perceptual process in which individuals and their interactions produce meaningful behaviours (Wrzesniewski et al., 2003). When individuals are involved in get-togethers, they have the ability to influence each other (Jagacinski & Nicholls, 1987). In such a situation, it is crucial to make fair decisions and respond to unknown circumstances. In uncertain environments, it has been argued that sensemaking is key to problem solving (Perminova et al., 2008). As a socially created process, sensemaking focuses on how each person tries to make sense of an ambiguous situation (Sandberg & Tsoukas, 2014). In sensemaking, humans add meaning to an event in order to make sense of the current environment (Helms Mills et al., 2010). People are involved in the process and try to give some meaning to the events (Helms Mills et al., 2010b), though these meanings are intricate and often entwined with other elements. People have had to interpret a great deal of information about COVID-19 over an extended time span in order to keep up with the changing circumstances of the virus.

With the COVID-19 pandemic affecting people's lives, there is often concern about its harmful effects (O'Sullivan et al., 2021). For example, people in China do not have enough time for entertainment, when shopping malls and restaurants are closed because of the pandemic (Pan et al., 2020). In China, news about COVID-19 is easily accessible; it is however difficult to tease out reliable information from the overwhelming amount of news and understand it from a reasonable perspective. This can lead to attention fatigue and can be more challenging for those who have many news sources at once (Buneviciene et al., 2021). The pandemic also raises deeper questions of sensemaking on a global scale, including how individuals understood COVID-19 throughout the period and how attitudes around COVID-19 evolved (Hennekam & Shymko, 2020). For example, during the COVID-19 pandemic, the world was engulfed in uncertainty (Collins et al., 2020). In order to curb the

spread of the COVID-19 virus globally, governments around the world have introduced several regulations (Yoo et al., 2020). Some of the regulations disrupt people's routines and interactions and bring about a great deal of uncertainty (Tantrakarnapa et al., 2020). Sometimes a certain amount of ambiguity arises because people have different cognitive formation processes (Hedberg & Jönsson, 1978). This high level of ambiguity allows people to have different views on how to prevent the spread of the virus. For example, masks in China have been routinely used since the start of the pandemic in 2019, while the effectiveness of masks in curbing the spread of COVID-19 has been controversial in the Netherlands since 2021(Gereffi, 2020). This may indicate that the process of forming perceptions of COVID-19 may not be the same in China and the Netherlands.

Although the pandemic has taken a huge toll globally, it has also provided a rare opportunity to study how people understand a complex and rapidly changing world (Buheji & Ahmed, 2020). With the virus constantly mutating, it is worth examining the reasons why people in different countries hold different perceptions of COVID-19, which may explain the differences in sensemaking processes between people. The next few points may shed light on how people's sensemaking of COVID-19 is formed. These include people's perceptions of the severity of COVID-19, their perceptions of government measures, their perceptions of the COVID-19 vaccine, their perceptions of the impacts of COVID-19 on people's lives, and their perceptions of the future.

Views on severity of COVID-19

Opinions on the severity of COVID-19 also influence the perception of COVID-19 itself (Aslan & Pekince, 2020). When the virus was first confirmed to be transmissible between humans in 2019, humans were completely unaware of the severity of the virus (He et al., 2020). It was only known that infected patients would be unable to breathe and that if fluid leaked into their lungs, they might be eventually suffocated to death (King et al., 2020). After the city of Wuhan was locked off, the virus was successfully extracted and studied; it was then understood that patients infected with COVID-19 could have severe symptoms such as high fever, fatigue, and coughing (Willis & Chalder, 2021). If the infection could not be treated promptly, invasive ventilators or artificial lungs might be used to save lives (Peng et al., 2020). At this stage, the virus was lethal and had an incubation period of about a week, but did not spread as quickly. People could control the rapid spread of the virus through measures such as urban lockdowns and quarantines. But in 2020 the delta variant was discovered in India (Shiehzadegan et al., 2021). At this stage, it was made clear that the virus could mutate and change its pathogenicity, thereby affecting the rate of transmission and lethality. The increased infectivity of Delta made it more difficult to control the spread of the virus, but the mortality rate of the Delta strain fell to 0.3% compared to over 1.0% for the initial strain (Bian et al., 2021). Studies have shown that because the incubation period is three days shorter than that of the initial strain, each infected delta patient can infect at least eight people and triple the rate of hospitalisation following infection (Duong et al., 2022). By November 2021, the Omicron variant was discovered in Botswana (Gu et al., 2022). Unlike previous strains of the virus, people infected with this variant generally do not develop pneumonia, as the variant primarily attacks the human upper respiratory tract (Brüssow,

2022). Despite the accelerated spread of the virus, the mortality rate dropped to a level below that of influenza (Kim et al., 2023). It was then argued that pneumonia should be removed from the list of possible symptoms caused by COVID-19 infection, as infection with the virus does not necessarily lead to pneumonia (Prado et al., 2020). It can be seen that people's perceptions of the severity of the virus have changed over time.

Although it appears that the lethality of COVID-19 has decreased, the consequences of infection are still severe given the large number of people infected (Marziano et al., 2022). According to research, some flu-like symptoms can appear a few days after infection and last for at least a week (Chia et al., 2020). In addition, the mortality rate in older adults infected with COVID-19 is particularly high if they have underlying medical conditions such as diabetes, kidney disease or hypertension (Zaki et al., 2020).

However, some people infected with COVID-19 remain asymptomatic until they are cured (Barboza et al., 2021). If they do not have a PCR test, they do not know they are infected, which further accelerates the spread of the virus. For the reasons above, almost all governments in the world have taken measures to contain the spread of the virus in their societies (Chakraborty & Maity, 2020). The most important measure is quarantine (Demaria & Vicari, 2021). In China, if a person was found to be infected with COVID-19 in any city, the area he or she lived in would be quarantined and residents of the quarantined area had to stay at home (Pang et al., 2020). This situation continued until December 2022. In addition to this, all people entering the country from outside China would be quarantined for at least 14 days (Tran et al., 2020). In the Netherlands, the government has been advising all residents who develop symptoms of COVID-19 infection to be quarantined at home until the symptoms have completely disappeared (Ministerie van Algemene Zaken, 2022b). The establishment of quarantine measures has also had an impact on the formation of the impression of the virus (Pietrabissa & Simpson, 2020). People may think that if the consequences of the virus are not severe, then the government will not enforce measures such as quarantine and the provision of vaccines, it also affects people's views of the future.

Views on the measures

In the face of the COVID-19 pandemic, governments around the world have developed measures to deal with it (Vo & Tran, 2021). Of these measures, quarantine measures are the most common. Governments across countries have enacted measures to restrict the movement of people in the hope of curbing the rate of transmission (Sparrow et al., 2020). People can gain many benefits from socialising, including enhanced memory and improved thinking skills (Ybarra et al., 2007). However, government measures have restricted people's freedom to socialise and the reduction in social activities may impair people's cognitive abilities. (Majumdar et al., 2020). In addition, quarantine measures to control the spread of the virus can have adverse psychological and social effects on people, especially those who are most vulnerable, such as the elderly, health workers, and children (Dubey et al., 2020). The consequences of the physical distance created by quarantine are predictable. These include reduced income, boredom, depression, loneliness or fear. Some people even suffer from anxiety or depression as a result of quarantine (Hamaideh et al., 2021). In such cases, quarantine measures can affect the formation of people's sensemaking

of COVID-19. People may be afraid of the COVID-19 virus because they fear the possibility of being quarantined. One study shows that many people exposed to COVID-19 during quarantine developed symptoms of anxiety, and in Beijing, China, many residents confined to their homes reported symptoms of depression (Li et al., 2020). One survey of people quarantined during the SARS pandemic indicates that quarantine measures can lead to severe psychological illness and may have long-term consequences (Sood, 2020).

Apart from psychological problems, quarantine puts people under financial pressure. Studies have shown that for every month that the quarantine lasted in China, the GDP dropped by around 10%, with millions of jobs lost (Fernandes, 2020). In the US the quarantine resulted in the loss of 4 million jobs between February and August 2020 and an unemployment rate of 6.5% in January 2021 (Bauer & Broady, 2020). In China, many people lost their jobs or closed their shops because of the quarantine, and even entire families lived on borrowed money (Tang & Li, 2021b). The psychological and economic consequences of the measures also affect the sensemaking of COVID-19.

In addition to quarantine measures, governments around the world have introduced vaccination programmes (Lazarus et al., 2020). In the Netherlands, for example, the government has organised the provision of vaccines for people living in the country, and the same has happened in China. Although governments have encouraged people to get vaccinated, not everyone has been vaccinated because people have different perceptions of vaccines (Karlsson et al., 2021). The perception of the vaccine is also bound to influence the perception of COVID-19.

Views on the vaccine

As with other important social issues, attitudes towards vaccines are divided, with some believing that they are effective and others that they are not (Nyhan et al., 2014). Some argue that the safety of the vaccine cannot be guaranteed because the COVID-19 vaccine was developed too quickly compared to other man-made vaccines (Nakhostin-Ansari et al., 2022). According to studies, a new vaccine needs to be tested for at least a decade before it is ready for mass vaccination (Wang et al., 2021). Confidence in vaccines is also declining due to serious adverse reactions to some immunizations (Dubé et al., 2014). For example, one survey shows that a significant number of people experienced muscle aches, headaches and fatigue after taking the vaccine (Omeish et al., 2021). Even vaccination by AstraZeneca can lead to thrombocytopenia and the spread of blood clots in the body, which can be fatal (Bassareo et al., 2022). Because the head of the Ministry of Health is a political appointee, survey results in the United States show that confidence in government agencies and belief in the information they provide about vaccines continued to decline throughout the COVID-19 pandemic (Umakanthan et al., 2021). Perceptions of a vaccine for a virus can also influence perceptions of how that virus is treated (Adane et al., 2022). In China, almost every parent has their newborn child vaccinated against HBV as the transmission of HBV is taken very seriously (Chao et al., 2010). It can be observed that attitudes towards the vaccine are consistent with those towards the virus.

Despite this, some proponents of vaccines believe that complete immunity can be achieved with COVID-19 vaccination, which can also prevent infection (Mallapaty, 2021).

According to studies, the vaccine prevents the development of mild to severe disease, as well as infection in family and friends (Kitro et al., 2022). In addition, a study of 20 million people in France shows a 90% decline in hospitalisation rates following COVID-19 vaccination (Willsher, 2021). Proof of immunisation also restores the eligibility of vaccinated people for travel and party (Pavli & Maltezou, 2021). If people are vaccinated in the Netherlands, they can enter public places, such as restaurants and museums, simply by showing their immunisation certificate (Chuan Voo et al., 2022). With a certificate of vaccination, people can also travel abroad.

However, infection with COVID-19 cannot be completely prevented, even with vaccination (Bleier et al., 2020). Theoretically, vaccination can only reduce the rate of severe illness after infection (Grant & Hunter, 2021). Many people's lives have been affected by the COVID-19 pandemic in China and the Netherlands. We can gain insight into the formation of perceptions of COVID-19 from how people perceive the life-changing effects of the pandemic.

Views of how the covid-19 influenced life

The COVID-19 pandemic has affected the way people live their lives (Nayal et al., 2021). The pandemic has affected many areas of society and all aspects of life and work, with governments around the world adopting various prevention and control policies, such as lockdowns and movement restrictions (Shadmi et al., 2020). The pandemic affects people of different occupations, economic statuses and education levels differently (Kramer 2020). For example, some people have jobs that allow them to work remotely, while others have to work offline. Either way, people's lives have been turned upside down by the pandemic. Research shows that there is a global change in the amount of time people spend on different tasks and activities during the pandemic (Pandya & Lodha, 2021). People generally increase the amount of time they spend resting and relaxing to cope with the fatigue that comes with a change in lifestyle (Sarabia‐Cobo et al., 2020). Across the world, those who can telecommute and those who are more affluent are spending more time on physical activity and less time on daily commutes (Birimoglu Okuyan & Begen, 2021). In the US, younger people spend more time caring for their children, while older people spend less time caring for their children (Aragão, 2022). These changes in life can also influence the formation of people's views on COVID-19.

Wearing a mask in travel settings is normal for East Asians, but not in the United States (Jang et al., 2022). Prior to the pandemic, people in the US might have thought a person was sick or even strange if he or she wore a mask in public (Choi, 2020).On the social front, the Dutch prime minister advised people to reduce their hand-shaking behaviour to restrict the spread of the virus (Duncan, 2020). People became more inclined to non-contact greetings, such as waving and nodding, rather than physical contact. Because of the pandemic, people's economic activity decreased and therefore people earned less at work, and some even lost their jobs as they could not adapt to the increased competition and inflation during the pandemic (Nia et al., 2022). Those who do not lose their jobs, especially senior workers, have to adapt to working online (Pit et al., 2021). A large number of businesses

worldwide have closed and a large number of people are left with higher debt burdens (Martins & Cró, 2022). For students, the quality of online education courses may not be guaranteed, leading to a decline in their academic performance, or even a delay in graduation due to the closure of schools that are largely unable to offer online courses, especially for several engineering disciplines (Cellini, 2022).

The pandemic has had a lasting impact on lives (Phelps & Sperry, 2020). The impact may also play a role in shaping people's perceptions of the virus. Some people's views on the future also change in line with changes in their lifestyle (Filimonau et al., 2022). The perception of the post-pandemic period may also shed light on what people's views of the COVID-19 virus really are.

Views on the future

As of July 2022, COVID-19 had been ravaging the world for nearly three years. It had created a global health emergency and triggered a global economic crisis whose impact has touched every person in every country (Bruinen et al., 2020). The pandemic had caused disease and death, destroyed livelihoods and driven 100 million people worldwide into extreme poverty (Kassegn & Endris, 2021). While governments around the world have introduced measures to combat the virus and the rapid development of the COVID-19 vaccine offers a glimmer of hope, it is foreseeable that the virus will be a part of our lives for years to come (Greshko, 2021). Perceptions of the future also play an important role in how individuals view COVID-19 (Larcher et al., 2020). There is no conclusive answer to the question of when the global COVID-19 pandemic will end, but the world will not be a "zero COVID-19" world and the virus will coexist with people (Charumilind et al., 2022). COVID-19 viruses will coexist to some extent with humans, just as influenza, dysentery, malaria and other infectious diseases (Xue, 2021). In the transition of COVID-19 from a pandemic to a seasonal epidemic, vaccines and drug treatments, as well as the response of national governments, will be critical (Ding & Li, 2021). Worldwide development of a COVID-19 vaccine and oral treatment is well underway; however, it is critical to emphasise that the pandemic will not end so soon (Robinson et al., 2022).

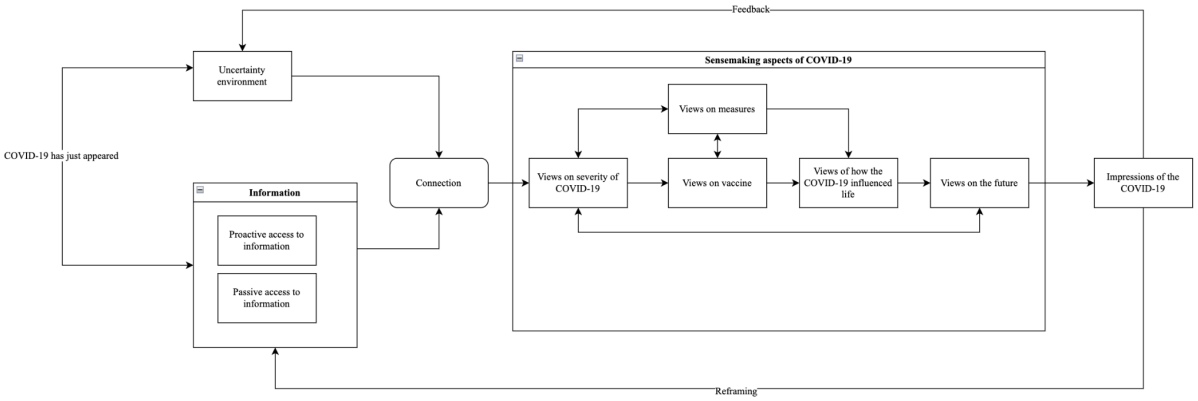
In the near three-year pandemic, many previously fixed rules have been changed (Alderman et al., 2020). A number of universities have added online master's courses to their offerings compared to the pre-pandemic period (Bouchrika, 2023). In the US, Meta has announced that employees can choose to work from home on a permanent basis instead of having to come to the company site (Corrigan, 2022). At the same time, blockchain technology and the electric car industry have grown considerably during the pandemic (Sharifi et al., 2021). People's expectations for the future also seem to have changed during the pandemic (De Haas et al., 2020). Studies show that many people are looking forward to returning to their pre-pandemic lifestyles, such as being able to travel more freely when the virus becomes less deadly than the flu (Anderson et al., 2021). Others suggest that people may never return to their pre-pandemic lifestyles because the virus may never go away (BBC News, 2020). The differences in people's expectations for the future also reveal that the process of forming people's perceptions of COVID-19 may also be different.

Research model

The research model of this study consists of the basic points mentioned above, which are central to the sensemaking process. From the very beginning of COVID-19, people were confronted with an uncertain environment and a wealth of information about COVID-19, some of which they actively acquired and some of which they passively received. This uncertain environment coupled with the wealth of information can cause people to start thinking about whether COVID-19 is a serious virus, and this can also influence people's views on the measures, the vaccine and the future. Because of the vaccine and the restrictions, people will start to think about how COVID-19 is changing the way people live and will affect their views on the future. When people complete the sensemaking process, they gain an impression of COVID-19. This impression gives some feedback to an uncertain environment and makes it less uncertain. At the same time, the impression of COVID-19 will reshape people's information about COVID-19 and give them relatively realistic information.

Figure 1

Research model



Method

There is very little research on how the Chinese people in the Netherlands and China perceive COVID-19, so this research topic requires an exploratory research method. This study is about people's sensemaking processes, so standardised questionnaires do not provide enough data to explore how people's opinions are generated and how cognitions are formed. Semi-structured one-to-one interviews instead are the most appropriate data collection method. This method was useful in understanding people's sensemaking processes and in advancing theory-building to determine whether people from different geographical regions have different opinions on a particular topic. To some extent, the participants' responses could help this study to draw meaningful conclusions and this study has been approved by the ethics committee of the Behavioural, Management and Social sciences at the University of Twente.

Participants

This study involves 20 Chinese residents (10 males and 10 females, aged 20-51 years, living in China) and 20 Chinese residents (10 males and 10 females, aged 20-50 years, living in the Netherlands), all of whom held a high school diploma or higher. All participants were from 10 different WeChat groups. These groups include a Chinese supermarket shopping group, a Chinese restaurant ordering group, a second-hand product trading group, a taxi booking group and an Alibaba shopping group. Researchers identified individuals interested in participating in the study by placing recruitment messages on these WeChat groups. Participants contacted the researcher by adding the researcher's WeChat account and eventually participated in this study. In this study, participants remain anonymous and unknown to each other to safeguard their privacy and to ensure that the study did not interfere with their work and personal lives. To maintain the objectivity and impartiality of the study results, the researcher did not know any of the participants in real life, therefore preventing any possible bias from the researcher's social circle.

Finally, 40 people were involved in this study and each person was interviewed once. The final sample from China had an age range of 29 to 51 years (mean = 37), while the sample from the Netherlands had an age range of 22 to 50 years (mean = 35). The average interview time was 60 minutes. Participants were asked open-ended questions related to COVID-19, such as how they felt about COVID-19 and what influenced their opinions, what evidence they used to form their opinion and did they think Chinese residents in the Netherlands (and China) were vulnerable to infection. These questions highlight components of people's thoughts and perceptions and provide partial answers to the research questions.

Interview guide

To collect data, semi-structured one-to-one interviews were conducted. Participants were interviewed online by the first researcher and were encouraged to describe their personal experiences. All interviews were conducted independently by the first researcher and were recorded with the consent of the interviewees.

In order to gather basic information, a full interview guide was developed prior to conducting the interviews (see Appendix A). The interviewer introduced himself to the interviewee before the interview began. The introduction includes the name of the interviewer, the school, and the purpose of this interview. After the introduction, the interviewer explained the confidentiality of the study so that the interviewee could feel comfortable being interviewed without fear of personal information or the content of the interview being disclosed. Confidentiality measures include the transcription of all tapes of the interview into text, the deletion of all information that could be traced back to the identity of the interviewee in strict confidence, and the possibility of requesting to withdraw from the interview before, during, and after the interview. The interviewer then asked the participant if he/she could record the interview, and after receiving verbal permission to record, began recording the audio of the interview. The interview was then conducted. The purpose of the interviews was to determine how COVID-19 perceptions are formed.

The interview guide involves the most critical interview questions for this study. The questions consist of two parts. The first part is a fairly short enquiry about COVID-19 perceptions and opinions and questions asked include what they thought when they first learned about the COVID-19 virus and how serious they thought the illness it caused was, and some follow-up questions such as why they thought this, what their views were on the long-term and short-term effects caused by COVID-19, whether they thought the illness caused by COVID-19 was a fatal illness and, compared to the influenza virus, whether COVID-19 virus was more serious. There were also questions about the severity of COVID-19 for individuals, such as whether they were afraid of contracting COVID-19, whether they were worried about family members contracting it, and to what extent they are worried about family members contracting it. Questions about views on COVID-19 include how COVID-19 had affected their life, whether their lifestyle had been changed by the pandemic, whether the pandemic would end soon, and whether people could return to their old lifestyle. The second part concentrates on government policy, immunisation and the reasons for the new disease in China. Questions include whether people could completely clear the virus, whether the COVID-19 vaccine provided effective protection, whether it was frustrating to be infected with COVID-19, and how effective government interventions for COVID-19 had been. There were also questions about whether isolation or quarantine limits the spread of the virus, whether hand washing and masks actually helped to limit the spread of the virus, and the reasons for the increase in new infections in mainland China by December 2022. Questions centred on individual perceptions of COVID-19, thoughts on government response policies, and perceptions of the life and psychological impact to demonstrate how people form their perceptions of COVID-19.

Analysis

All interviews were transcribed by the first researcher. To ensure data security, only the first researcher was involved in the analysis of the data. This, while increasing anonymity, may have allowed for biassed or inaccurate coding. In this study, a repetitive coding technique was employed for this reason. Multiple coding sessions are scheduled after each coding process to prevent any biassed or inaccurate coding caused by having only one coder.

Each coding round for this study consists of three coding sessions. In the initial stage of coding, the first researcher used open coding to code each interview. In the second coding stage of this study, axial coding was utilised and basic information memos regarding mood, opinion formation and interview arrangements were prepared. During the second axial coding process, memos were made of the impressions, perceptions, opinions and sources of COVID-19 for each interview. In order to gain consensus on coding, these memos were saved and compared at the next coding session. The third coding session was selective and the main work in this phase was to create a core category through consolidation and condensation. The core category is a distillation of all the results of the analysis and represents the content of the study.

In the first round of coding, the type of code is determined and then the categories of codes are created. A category is simply a set of codes. In general, the first round of the coding process is considered to be fast and loose. In the second round of coding, the codes and

categories need to be re-examined. At this stage the codes can be further optimised by recoding, reclassifying, or renaming the codes. The next rounds of coding, from the third to the tenth, were mainly aimed at finding more patterns, re-analysing the content of the interviews, and moving towards developing concepts and theories. Through each round of coding the number of codes is reduced, but the important elements of the interviews are revealed further (codebook see Appendix B).

Finally, the codes and notes were compared, and the underlying views of the participants were synthesised to draw conclusions. In the final step, the first researcher conducted several evaluations and studies of the summaries of these codes to determine differences in perceptions of COVID-19 among Chinese people living in the two countries. The analysis was carried out using atlas ti software. During the data analysis, only the initial researcher had access to the participants' data.

Results

With regard to the perceptual understanding of COVID-19, there are similarities and differences in most studies. Each study focuses on the emergence of COVID-19 and people's perceptions of its evolution over time. Based on interview transcripts, the following section describes the development of COVID-19 in China and the Netherlands, as well as the obstacles and difficulties people in the two countries encountered in its development. Using the research model created in the theoretical framework, the findings are presented in six sections to reveal the process of developing perceptions of COVID-19 among Chinese living in the Netherlands and Chinese living in China and the differences between them. Each section first presents the responses of participants from China, followed by the responses of participants from the Netherlands, and finally, the two responses are compared to find the differences. The original transcripts of all interviewees are in Chinese and have been translated into English for the purposes of this article.

Information seeking

China

First, interviews reveal that individuals in China relied on the news media to understand the escalating virus crisis before exploring the truth for themselves. Most of them relied only on media reports and virus experts who produced articles for the media. With little and unclear research on the virus in 2020, many people were given conflicting information about the virus. Sixteen people said they did not believe COVID-19 started in Wuhan because new viruses had not emerged for years and because early outbreaks of avian and swine flu had not led to a global pandemic.

According to the interviews, Chinese residents seemed to believe that the government and media were sources of authority and that the government could effectively combat pandemics. After seeing the virus in the news, 13 people reported feeling panic; however, once the government put measures in place, these anxieties subsided. Fears disappeared, especially when respondents were surrounded by people infected with COVID-19. In

addition to the information released by the government, Chinese citizens living in China also receive news from other media. For example, certain information about COVID-19 was posted on WeChat and Weibo and it sometimes contradicted the information provided by the government. Interviewees expressed uncertainty and unease on this point. With multiple sources of information available, they did not know how to assess the data and determine whether it was true or false. For example, one interviewee said he was relieved when he saw a WeChat post from a Beijing media outlet stating that the symptoms of COVID-19 were minimal. However, he was again worried when he saw a Weibo post from a Shanghai media outlet about serious cases of infection in the afternoon.

> Participant 7: In the beginning, I did not believe that a new virus had appeared in Wuhan, it was a fantasy to me. As humans have discovered no new virus for many years, I guess I don't know who spread the rumour. And I saw people saying that one moment the virus could be transmitted from person to person and the next moment that it could not, so I was even more convinced that this was false news.
>
> Participant 18: I think the government should release information about the virus because it can do so. I also believe in the government media. Because, you know, all the TV stations and newspapers in China are owned by the government, so the government should also report the real news. With the government explaining the virus clearly, I don't feel scared anymore. This feeling of reassurance made me believe more in what the government was reporting.

Fifteen people in the interviews stated that they had their own unique view of COVID-19, but these 15 people pointed out that they were not virologists and therefore did not have expertise in dealing with the virus. Seven interviewees said that they could not tease reliable information out of multiple sources that offered conflicting information, so they were unsure who to believe. This suggests that people do not have a good understanding of what the virus really is, which was described as a complex issue. Seven interviewees noted that it was a challenge to select and accept broadly accurate information from the many options available. It was clear that these respondents were neither educated to recognise disinformation nor had the capacity to adapt to the exhaustion of receiving a large amount of information at the same time. By combining their personal experiences with those of their peers, they tried to avoid being overwhelmed by the sheer volume of information. Even though respondents reported varying degrees of information needs, they all demonstrated a desire for accuracy. One person said that he was no longer afraid of the virus after reading the Chinese version of the COVID-19 prevention and control manual published by the World Health Organisation (WHO). In addition to receiving information, 13 respondents actively sought out resources on COVID-19 produced by various international organisations to increase their knowledge of the virus. This is another example of interviewees actively seeking out different sources of information.

Participant 2: For me in addition to watching government news to learn about the virus, I also read media reports about the virus in the US or Europe. In addition to this, I also follow the announcements made by international organisations, such as the World Health Organisation. Because sometimes the news from the government is full of contradictions and not so accurate. Who should I trust if I only keep one source of information?

Participant 18: You know, I read a lot of news about viruses reported by WeChat and self-published media daily. I don't even know who to believe anymore. They said yesterday that taking azithromycin can cure viral infections, but today they said that azithromycin is not effective for this viral infection. I am getting so much information that I need to find a reliable source.

Netherlands

Chinese people living in the Netherlands access information about the virus differently than those living in China. Fifteen respondents said that in addition to reading information from the Dutch government and media, they also paid attention to information from the Chinese government and media. For example, 3 of the respondents said that news reports in both China and the Netherlands mentioned that the disease could lead to very serious consequences; however, based on their experience, no irreversible consequences had occurred. Eighteen respondents from the Netherlands said that their knowledge of COVID-19 came mainly from the sources around them, including family members, colleagues and friends. Ten of the eighteen said that they viewed the virus as a more serious respiratory illness than the common cold, but they showed no fear or concern. Nine respondents were sceptical. As can be seen, Chinese residents in the Netherlands may be more inclined to compare news with reality when faced with a large number of news reports. Seventeen respondents said that almost everyone around them had contracted the virus at least once since 2022 and that all those infected had recovered. Six respondents said that although COVID-19 had claimed the lives of some elderly people with pre-existing conditions, scientists warned that even ordinary flu can cause serious problems, so this virus is not as scary as it seems. Seven respondents said that when the Omicron version of the virus was discovered in South Africa, it had already transitioned from causing lung infections to being the same virus as the flu, so they did not need to be afraid of this virus.

Participant 27: I don't think the virus has any serious consequences because I am personally cured. Almost everyone around me had been infected and cured before I got it. It was nothing like what was reported in the news. So I don't believe the news, because I have many examples around me to prove my point. Why should I believe what is reported in the news?

Participant 32: I know that this infection with this virus is serious, especially for older people with underlying medical conditions. I know of

> many older people who have died in nursing homes. So I think what is reported in the news is also true. But I still prefer to believe what I see around me. When I have a problem, I look for experiences from my own side rather than listening to the news reports. If I can't find experience, I might refer to the news.

Difference

Most people living in China learned about COVID-19 from press releases issued by the Chinese government, pandemic videos produced by Chinese doctors and experts, and homemade media. Due to the quarantine system in China at the time (until December 2022), it was difficult for Chinese people living in China to communicate regularly with people infected with COVID-19. With no access to first-hand information about the virus, people living in China had to rely on the media for information. In addition to forming their own opinions about the virus, people read a large number of media reports and actively sought out additional sources of information.

The results of the study revealed that Chinese residents in the Netherlands learned about COVID-19 mainly from their friends and family members who had close contact with COVID-19-infected people in their daily life and work and were asked about their mood and the severity of the infection. The severity of the virus could be determined by observing and analysing the illnesses and symptoms of other people infected with COVID-19. They also read news from the Chinese government and media and learned about the situation in China regarding COVID-19 through their friends in China. Living in the Netherlands they also read press releases from the Dutch government or the Dutch media to compare what they read with their own experiences to form their own opinions.

Views on severity of COVID-19

China

The results showed that seven Chinese respondents considered COVID-19 to be an extremely harmful virus because it could cause lung disease and ultimately be life-threatening. In addition, 10 respondents expressed anxiety about the possibility of transmitting the virus to their parents or children if they became ill. Four people said they were very worried about the elderly or children in their families contracting the virus. They had heard that if the elderly were infected with the virus, then the level of oxygen in the blood would gradually decrease. Once the oxygen level drops below 80% it can be life-threatening. One of the participants, whose child had just been born, said that his child and his wife would not leave the house again until the child was six months old and that all household items would be delivered to the house by him, thus preventing the newborn child from contracting COVID-19.

> Participant 9: I feel terrible about this virus because it causes a serious lung infection, making it impossible for me to breathe. I don't want to be in hospital and on a ventilator, so I don't want to get infected. I

think that hospitalised people always suffer from serious after-effects and it is difficult to get better.

Participant 15: I do not want my family members to be infected with COVID-19, especially my children. Because my child is still young and if he gets the virus then he may not be able to breathe properly. So I will do everything I can to protect my child.

Netherlands

Eighteen Dutch respondents said that COVID-19 was not a particularly dangerous virus. They said that COVID-19 was not as deadly as viruses such as Ebola; instead, its effects were similar to those of influenza, which they considered to be acceptable. Regarding lung damage, six respondents stated that their family members had been treated eight months earlier, stating that the virus was not particularly serious in their own cases. Four respondents expressed concern about their parents and children, whose immune systems are not as developed as theirs. In addition to suffering physical damage, three interviewees reported that contracting COVID-19 had affected their income and school performance. They said their income was 50% lower than before because of the pandemic, but they still had to pay the same bills. Two respondents said COVID-19 had an impact on their academic achievement.

Participant 29: I don't think this virus is serious at all because everyone around me has been infected and cured. I can hardly find anyone who has not been infected with COVID-19, which only causes some flu symptoms and is not life-threatening. But some people have immune problems and need to be careful not to get infected.

Participant 37: The physical damage caused by this virus is perfectly acceptable to me, but from other perspectives, I think this virus is quite serious. For example, the virus has affected my income, and what I used to earn in one day now takes me two or even three days to earn. I hope that the inflation caused by the pandemic will end soon.

Difference

As of July 2022, Chinese residents considered COVID-19 to be a serious disease. They believed that this virus could damage physical and mental well-being. The virus might cause lung infections, breathing difficulties and other medical conditions. Infected people were also under enormous social pressure from cyber violence and the invasion of privacy.

By July 2022, Chinese people living in the Netherlands felt that COVID-19 was not significantly different from the influenza virus and that its physical consequences were not serious. They were more concerned about the impact on their lives and financial well-being, but did not mention social stress.

Views on the measures

China

Nine interviewees said that the virus could have been eliminated if quarantine measures had been implemented worldwide. People then could return to their pre-pandemic lifestyles. Sixteen respondents expressed concerns about the physical health of their family members. Four of them said that they would accept being quarantined in their homes for the sake of the elderly and children in their families, and all 4 believed that such quarantine measures would be effective in protecting their families while eliminating the virus completely over time. According to 7 respondents, quarantine measures, compared to other measures, were the most effective because they could completely eliminate the infection over a period of time. Eight respondents said that they could understand not being allowed to travel freely and visit public places, but they could not support mandatory quarantine in camps. They had learned through the media that there were quarantine camps where hundreds of people shared one toilet and that men and women were not housed separately. All 8 interviewees said they could not stand the situation. In addition, seven out of the eight said that these camps did not provide any type of medical care for the residents, who were just forced to stay in the camp with the lights on all the time and found it difficult for them to sleep. Six of the eight said that they all kept pets and it was unacceptable that their pets would be killed if they were sent to a quarantine camp. Nine interviewees said that during the quarantine, they were short on household items, including food and medicine, and pet food. Four of them said that they could only get access to 2 types of vegetables for 25 days during the quarantine and that they could not eat enough meat and eggs.

Of the Chinese respondents, seventeen said they thought the quarantine measures would slow the spread of the virus and protect people's health. Four said they would accept quarantine at home for the health of their families and eight said they did not want to be forced to go to a quarantine camp.

> Participant 11: I also know that this model of closed control is unlikely to be sustainable, but there is no denying that it does ensure my health. I no longer need to worry that I might catch this virus. Although the PCR results are sometimes inaccurate, it has gone a long way in protecting me from getting infected.
>
> Participant 16: I can remember when I was asked to be quarantined at home. At first I was informed that I only needed to be quarantined for 14 days. But because of the continued presence of infected people in my building, I was eventually told to be quarantined for 25 days. I will never forget those days when I was only allowed to eat overpriced vegetables delivered by the Chinese government every day and they were all vegetables like onions or carrots and potatoes. I would also worry about my dog, which could have been killed if my neighbour had been infected, as I would have been forced to go inside the quarantine camp.

Netherlands

In terms of limiting the rapid spread of the virus, Dutch respondents placed more importance on self-protection than government regulations. Twelve respondents pointed out that they would choose to rest at home rather than go out when they had symptoms of COVID-19. Seven out of the twelve said that they did so not because of government pressure, but because they felt that they should be responsible for their own health. All seven respondents agreed to try not to infect others when at risk of contracting COVID-19. Nine respondents felt that quarantine measures were of limited use. This was because during a pandemic, few people would arrange non-essential travel and trips, and quarantine at home would lead to the cancellation of many important trips. Seven out of the nine respondents said that they could only guarantee that they would stay at home until their symptoms disappeared, but they could not guarantee they would not infect others after their symptoms disappeared, so they felt that quarantine measures had limited effect. Eleven respondents felt that while quarantine could limit the spread of the virus to some extent, they could not fully address the pandemic. Nine of the eleven felt that only herd immunisation could deal with the pandemic, and this could be achieved through natural infection with the virus or vaccination.

> Participant 26: I don't think quarantine is helpful and keeping everyone at home is not helpful in my opinion. Because the virus can be transmitted to others even when it is asymptomatic, how can you guarantee that the people in the house are healthy? And PCR tests are not always accurate, so I don't think a lockdown is going to help.
>
> Participant 39: I think it's more important for everyone to protect themselves than government measures. Because your body's immunity decreases after contracting COVID-19, you need to stay at home and not go outside. And this also protects others from being infected to some extent. But I don't think staying at home after infection is the ultimate solution. So it may be possible to vaccinate everyone or infect everyone at least once before the pandemic is completely solved.

Difference

Chinese residents stated that the government's lockdown and zeroing policies could effectively restrict the virus's spread. Respondents believed that China's big population and great mobility would result in widespread infection if the lockdown and zeroing rules were eliminated. The fatality rate of the virus was not particularly high at that time, but given China's large population, millions of people would perish. Therefore, they believed that a government executive order would be helpful in preventing the spread of COVID-19 in the long run.

In interviews, Chinese residents in the Netherlands however said that self-protection was clearly more crucial than official Dutch policy (quarantine) in preventing the spread of the virus. They felt that quarantine was not the ultimate solution to the pandemic, so protecting themselves from infection was their top priority. . If they were infected, then they would stay at home and wait until they were cured before going out. If everyone can do what

they can to protect others while protecting themselves, then the spread of the virus will be slowed down.

Views on the vaccine

China

Eighteen people expressed a lack of confidence in the COVID-19 vaccine, with all 18 stating that to their knowledge, there was no significant difference in the response to the virus between vaccinated and unvaccinated people. Thirteen of the eighteen individuals felt that the only way to end the pandemic was for everyone to be infected with COVID-19 once to achieve herd immunity. Eight people said they were offered various vaccinations every day, but they were not informed of the side effects of these vaccines. Nor were they told who should be responsible for the associated side effects. In the end, six of them were not vaccinated and the other 2 got vaccinated because their work required them to do so.

> Participant 10: I don't think vaccines are useful. Because there is no way to stop me from getting infected. And I am not convinced that the vaccine can reduce the probability of serious illness. People around me have been vaccinated and they have not avoided infection. And you have to continue to do PCR tests every day after the vaccine, so what's the point of getting the vaccine?
>
> Participant 20: I think the current version of the virus is pretty weak. It hardly causes people to get lung infections. So I think people should use the current version of the virus as a vaccine. And I know there are strong reactions to the vaccine, my friend felt dizzy and nauseous after the vaccine, so I don't think the vaccine is very useful.

Netherlands

Fifteen respondents from the Netherlands said they were not afraid of the disease because they had been vaccinated at least three times. They agreed that immunisation was effective in providing protection. Ten out of fifteen were concerned that family members who were not eligible for vaccination, such as the elderly and children, might be infected with COVID-19. Six of the ten said many elderly people in their neighbourhood had died of this infection and four said they got this information through a friend. Eighteen respondents said they were not worried about secondary infection for two reasons: firstly, the likelihood of secondary infection is very low; secondly, each person has a unique immune system, which means that everyone responds differently to the disease. Fourteen out of eighteen said that some people exercise regularly while others do not, and their symptoms of infection should be different. Eighteen Dutch respondents felt that this virus was not different from the flu virus and that vaccination would provide adequate protection.

> Participant 36: Both my parents and I have been vaccinated with COVID-19. This is because I know that the vaccine offers a certain level

of protection. My friend's parents died of COVID-19 infection because they had not been vaccinated. And my parents contracted COVID-19 after they were re-vaccinated, but only as a symptom of the common cold. So I think the vaccine is useful.

Participant 25: Even though I was very young, I went for the vaccination. I believe that the vaccine provides protection because I have read articles that say that the vaccine produces antibodies against COVID-19. Another reason is that if I get the vaccine, I can go to the pub and drink, which is also important to me.

Difference

Chinese residents are not enthusiastic about immunisation. As of the date of data collection, COVID-19 was not raging in China and respondents thought that vaccination may not be necessary. For example, respondents expressed that the COVID-19 vaccine fails to provide almost 100% protection as the hepatitis B vaccine does, so there is little need to get vaccinated.

In addition, attitudes towards vaccination differed between the two countries. Eighteen of the Chinese residents in the Netherlands get themselves and their families vaccinated and sometimes received a third and fourth booster vaccine to strengthen immunity. They stated that they chose to be vaccinated after comparing the symptoms of both vaccinated and unvaccinated people around them. They observed that symptoms of the virus did abate after vaccination, which was consistent with government and media propaganda about the vaccine. The effectiveness of the vaccination meets the expectation of the public

Views on how the covid-19 influenced life

China

Seventeen respondents reported that the COVID-19 pandemic had a significant impact on their lives. They all reported that the cancellation of international flights and quarantine regulations in mainland China prevented them from travelling freely. Twelve respondents mentioned that they experienced psychological problems, including irritability and despair. In addition, ten respondents expressed great concern about the elderly and young people with underlying illnesses getting infected, as these people could only rely on their own immune systems to fight COVID-19. Nine respondents said they were confused by conflicting news: news reports showed that asymptomatic infections accounted for a large proportion of total infections, but the reality was that the overall infection rate was very low. These nine people said that the inconsistencies in the news increased their concern about the impact of COVID-19 infection, as they had learned from the news that infection could lead to sequelae including male infertility, memory loss, hair loss, etc.

According to eleven interviewees, the pandemic had a significant impact on their household or personal income. During the pandemic, four people reported losing their source of income and even having to borrow money to cover living expenses. According to the four, the lockdown led to the closure of shopping centres and dining establishments, which

affected their income. Five respondents said that their situation was significantly better in 2022 compared to 2021, as certain shops were allowed to offer takeaways. Their financial burden was eased to some extent. Thirteen respondents said that they were forced to work in urban takeaways and cleaning in order to make ends meet, as many businesses were forced to close due to the pandemic. In contrast, four respondents employed by Fortune 500 companies said that their income was not affected by the pandemic.

> Participant 15: I think I'm on the verge of depression. Because I haven't travelled abroad in many years. I really feel desperate. I haven't gone to work for 2 months because of COVID-19 and my income has been affected. I am also worried about the after-effects of my infection. I read in the news that the infection can cause hair loss and reduce male fertility.
>
> Participant 11: My income has been greatly affected. Because I can't do my profession online, I will lose my source of income if I do a lockdown. I have started borrowing money to make ends meet. But some of my friends work for big companies and their income is not affected, so I feel it is very unfair.

Six respondents stated that the outbreak of the virus had led to a change in their lifestyle. Prior to the pandemic, these six respondents were able to fly from China to Thailand on weekends for vacation, but because of the virus, they have not travelled abroad for almost three years. Seven respondents claimed that from the time their child entered high school in 2019 until they graduated in 2022, they hardly saw their teachers and classmates in person as almost all schools provided classes online only. Six of the seven respondents felt that the quality of education offered online was not as high as offline, so they expressed concern that their child would not perform well in the National College Entrance Examination. All six respondents said that their child's life would be changed if they did not get into a highly-ranked college. Six respondents said they were not afraid of contracting the virus, but they were concerned about the negative effects it could have, such as not being able to go to school.

In response to the question of whether they were afraid of the virus or of the person who had contracted it, twelve respondents said neither. Nine of the twelve said that it was often difficult to determine whether the virus was actually deadly, but they had heard from close friends that the infection was not very different from the flu. Seven respondents said that in order to prevent the spread of the virus, people who were sick would be banned from work, while four respondents said that they would feel very bad if people were infected by them and would bear the financial burden as a result. All four individuals said that they were more concerned about the loss of income than the physical damage caused by the virus. They all agreed that if people had no underlying medical conditions they could recover within two weeks, but if people were unable to work for more than two consecutive weeks, then they may lose their jobs.

Participant 18: My child is a first-year student and his major is electrical engineering. But my concern is that electrical engineering requires hands-on courses, such as soldering PCB boards and assembling components. But because all the courses are done online, he doesn't receive offline hands-on training. So I don't think he is getting a quality education.

Participant 20: I would feel very guilty if I had contracted COVID-19 and I infected someone else. Because any public place that is found to have a new infection needs to be closed immediately for at least 2 weeks. This would deprive others of income. This would make me feel very sad. Also if I am diagnosed with COVID-19, I will have to go to a centralised quarantine camp where my pets will be killed, which makes me worry about my pets.

Netherlands

Nineteen respondents said that their studies and income were affected by the pandemic. Fifteen of the nineteen said that schools and businesses did not provide prompt help to students and staff when the pandemic started. Four respondents said that universities were closed when the pandemic started and that schools failed to provide advice and online courses in time. It was not until two months later that universities and schools began to offer online courses, online tests, etc. and students' academic performance was adversely affected as a result. Eleven respondents said they changed their lifestyles in 2021 because of the impactCOVID-19. As the cost of living climbed and inflation rose, they were forced to cut back on non-essential spending on travel and shopping in order to cover their daily living expenses.

During the pandemic, eleven respondents reported that their mental health suffered. Ten of the eleven said that despite having lived in the Netherlands for many years, they still maintained close ties with family and friends in China. Nine respondents said that they had been separated from their family and friends for almost three years, and all nine stated that many had experienced psychological and financial difficulties due to the fewer international flights and the expensive airfares. Eight of the nine complained that they were unable to concentrate on work and study during the pandemic, because they could not fly back to China to reunite with their families at any time as they did before the pandemic.

Participant 30: I have delayed my graduation for 1 year because of the lockdown. I can't get used to online classes. Sometimes I sit in front of the computer and don't want to do anything. And the teacher didn't take the online classes very seriously, sometimes the teacher didn't even notice my questions. I should have graduated early and started working, but because of the pandemic, my life was changed.

Participant 38: I really want to go back to China and reunite with my family. Because I used to go back to China every 2 months to be with my family. But now that many flights have been cancelled and I have to

be quarantined in China for 14 days, the expenses are too much for me to bear. So I think I need to find a solution to this problem.

Difference

The results of the interviews revealed that the life of Chinese people living in China had changed because of the decrease in flights during the pandemic and the quarantine measures. They were inflicted by psychological disorders because they were unable to travel for a long time. They were also concerned about children in the family and the elderly being infected with COVID-19, as t these vulnerable groups may be seriously ill after infection. Some respondents also said they were worried about the future because of conflicting information about COVID-19 in the news, and the resulting impacts on their lifestyle. They began to reduce unnecessary expenditures and started to worry about the possible after-effects of the infection. China's COVID-19 policy at the time of data collection forced many shop and restaurant owners to shut down their businesses. In addition, school closures in China had also compromised the quality of education for children.

The main impact of the outbreak on Chinese people living in the Netherlands is that they cannot return to China to reunite with their family or friends. Because of China's 21-day quarantine policy and frequent flight cancellations, many people cannot afford to travel and this causes psychological problems. And Dutch respondents said that universities and companies did not provide them with timely help, so they did not adapt quickly to the change at the start of the pandemic. There was also inflation during the pandemic but their incomes did not increase much to keep up with the soaring cost of living. This put them under increasing pressure and forced them to change their lifestyle in order to save money.

Views on the future

China

Seventeen respondents said that the virus will never go away, stating that smallpox was the only virus that was eradicated by humans through vaccination. Thus, all 17 people believe that humans and viruses will co-exist forever. Six respondents said that humans will not be able to return to the state they were in before 2019 because they believed that there are no 100% effective vaccines and that people can be repeatedly infected with the virus. Three respondents believed that COVID-19 induced more severe medical conditions than influenza and that the virus was particularly adaptable, so it is unlikely that people would return to their pre-pandemic lifestyles. Seven respondents said that during the two years of research into the virus, it had become clear that infected people did not develop permanent immunity and many had survived a second or even a third infection. Also, it was uncertain what damage these diseases could cause to the body and organs.

Participant 19: I don't think the virus will ever go away. And it seems hard to go back to the way we used to live. For the future, I think people should always be prepared for multiple infections. I've heard that

the virus can also mutate at any time and I don't know what to do if it becomes more contagious or more virulent.

Participant 8: I've heard that the virus has very strong after-effects. People can lose their sense of smell and taste for a certain period of time after infection. And that's just one infection. Imagine what would happen if people were infected with the virus multiple times in the future. Maybe their own internal organs will be damaged. I am very worried about the future because I don't want to get infected.

Netherlands

Six respondents said that COVID-19 could become a flu-like virus that continues to infect humans, given that we humans only eradicated smallpox in history. Eleven respondents said that instead of worrying that the virus will not be eradicated, more efforts should be made to create vaccines against new strains, which would reduce the impact of the associated diseases on humans. Nine respondents said they were concerned about the ability of the virus to mutate. New variants can be more infectious and deadly. Nineteen respondents felt that humans currently lack effective means of preventing infection. Therefore, people should return to their old way of life and treat viral infections as a cold, as long as the virus does not result in serious consequences.

Participant 27: I think we should now make a big effort to develop more effective vaccines and drugs before we can go back to our old life faster. Although it is impossible to eradicate the virus completely, I think it would be perfectly acceptable to me if it were kept within a reasonable range. For the future, I believe that if we have effective vaccines and drugs, then all will be well.

Participant 33: In the future we should slowly go back to the way things used to be. Even if we have a vaccine, it doesn't seem to be that effective at the moment. Once the virus mutates, we may have to face another round of lockdown. So we should be more cautious.

Difference

The interviewers living in China knew that the virus was not very dangerous, but they thought that the potential incidence of the disease in China would be high given the large population base in China. As people rapidly revert to their 2019 lifestyles, they will no longer wear masks or maintain social distance. The transmission will accelerate and many people will become infected as a result. They argue that the strategy to prevent a pandemic is to gradually return to pre-pandemic life. During the pandemic, China paid a huge economic price, but it would be a pity to give up in the final stage.

The Chinese in the Netherlands believe that if the spread of the virus is brought under control, then people can fully return to their pre-2019 lifestyles. Interviewees said that the public will get more information about COVID-19 over time. The consensus is that this virus is not a lethal pathogen and has a lower mortality rate than influenza. It is not worth changing

one's lifestyle for a virus that has a lower mortality rate than influenza, especially when a three-year pandemic has already led to many irreversible lifestyle changes such as telecommuting and online learning. They say that humanity has paid a high price and it is time to return to the pre-pandemic lifestyle.

Discussion

Main findings

The aim of this study was to determine how Chinese people living in China and the Netherlands formed their perceptions of COVID-19. Many earlier studies have noted that people have different perspectives on COVID-19 and different views on the way to prevent the spread of the virus, and these studies have identified the negative impact of the COVID-19 pandemic on people's mental health and well-being (Finch et al., 2020). There is also much research on how uncertainty affects people during a pandemic and how people change their lifestyles during a pandemic (Soga et al., 2021). However, no research has been conducted on how perceptions of COVID-19 differ between people with the same cultural background living in different countries. In this article, one-on-one interviews were seen as a more comprehensive method for investigating the process of COVID-19 sensemaking among Chinese people living in two countries.

In order to fully understand the process of COVID-19 sensemaking among people living in two countries, the views of people from two different countries need to be collated. In this report, the perspectives of respondents from China and the Netherlands are presented. According to earlier studies, the formation of COVID-19 perceptions is influenced by a variety of actors because of the different environments in which people live. (Simon et al., 2000). Therefore, the framework of the study encompasses six key aspects that can influence perceptions of COVID-19, including information seeking about COVID-19, views on the severity of COVID-19, views on measures, views on the vaccine, views on the impact of COVID-19 on life, and views on the future.

In terms of seeking information about COVID-19, respondents living in China mainly obtained updates through the government and government-funded media, as well as through doctors or experts from China. Respondents living in the Netherlands said that while they also received news about COVID-19 from the Netherlands and China, they mainly learned about COVID-19 from friends and family who had been infected and recovered. Compared to the Chinese respondents, the Dutch respondents have easier access to other sources of information. A single source can influence people's judgement of a matter (Loughland et al., 2010). Studies have shown that if exposed to an opinion repeatedly, people are less likely to question the truth of that opinion and choose to believe it outright (Hassan & Barber, 2021).

In terms of the severity of COVID-19, respondents from China generally believed that infection with COVID-19 could cause severe mental stress and physical pain, and might have long-term effects even after recovery. Respondents from the Netherlands, on the other hand, felt that the effects and consequences of COVID-19 were similar to those of the influenza virus. Respondents from China had little exposure to people infected with COVID-19 because of the rigid Zero-COVID approach in China until December 2022. The information

they were given was second-hand. In the Netherlands, on the other hand, people had easy access to people who had recovered from COVID-19 infection, so they could make their own judgments. Earlier studies have shown that people tend to be fearful of the unknown (Winters, 2016). Respondents from China had not been in contact with people infected with the virus in their lives, so they would instinctively feel that the consequences of infection would be severe. The Dutch respondents, on the other hand, had easier access to people infected with the virus and could therefore draw their own conclusions about the consequences of the virus.

Regarding government measures, respondents from China said that the government was more responsible for everyone's health than they were for their own, and that quarantine measures were necessary for public health because they can slow down the spread of the virus to a certain extent. In China, people tend to think that the government has many obligations to its citizens (Twitchett, 2023). Because of the large population base, the government in China tends to be a big government, which is expected to address all problems through policies issued. (Gao & Zhang, 2021). Respondents living in the Netherlands, on the other hand, believed that government restrictions were not enough to fully address the pandemic. Quarantine measures could only slow down the spread of the virus but not eradicate it, so everyone needed to take responsibility for their own health. In the Netherlands, more emphasis is put on individual responsibility for their own health rather than on government obligations.

With regard to their views on vaccines, respondents living in China generally had no confidence in vaccines and believed that they were ineffective. People are always sceptical about things that have not been proven (Tsfati & Cappella, 2016). Few people in China had been infected with COVID-19 before December 2022, so it is understandable that people were sceptical about the effectiveness of the vaccine. Respondents from the Netherlands generally had confidence in the vaccine and believed that it could prevent serious illnesses. Having seen the effects of the vaccine, Dutch respondents believed in its effectiveness.

Regarding the views on how COVID-19 affects their lives, respondents living in China suffered psychological stress as they could not travel. Meanwhile, reduced income caused by the closure of businesses, combined with the fear of long-term effects, further disrupted their lives. People were irritated by the prolonged inability to move freely and were prone to develop psychological disorders as a result. . A decrease in income could also cause anxiety, which possibly compromised people's objective judgement of things (Ridley et al., 2020). And chronic anxiety could further increase the amount of psychological stress people bear, which in turn affected people's perceptions of COVID-19 (Dubey et al., 2020a). Respondents from the Netherlands believed that their inability to return to China to meet their family and friends in China had led to serious psychological problems that affected their lives and that rising prices had s led them to change their lifestyles and become more frugal. Respondents living in the Netherlands have learned to live with the virus. This may indicate a habituation effect (Raude et al., 2019).

As for future attitudes, the respondents from China believed that there should not be a rapid return to the pre-pandemic lifestyle, given the large population base in China and the high price people had already paid to contain the transmission of the virus. Otherwise many people could be infected with COVID-19 and lose their lives. This shows that people are

often reluctant to give up what they have already paid for (Arkes & Blumer, 2004). For respondents living in the Netherlands, they believed that the current virus has a lower mortality rate than influenza, so they should return to their pre-pandemic lifestyle immediately in the future, and they did not see the need to change their lifestyle for a virus with a lower mortality rate than influenza.

According to the results of the study, respondents living in China and those living in the Netherlands have a completely different cognitive ecosystems. Respondents living in China receive relatively homogenous news about COVID-19, so they tend to believe what is described by a single source of information, which leads them to believe that COVID-19 is still a virus that can cause very serious illness at this stage. Because of their culture and tradition, the Chinese government has relatively greater responsibility and authority, and because Chinese people are more inclined to expect the government to protect them from the virus, they are generally supportive of the government's restrictions (Wu & McGoogan, 2020). Fewer people in China had been affected by COVID-19 until December 2022 and therefore the effectiveness of the vaccine could not be confirmed. As a result, public confidence in the vaccine was low. The restrictions until December 2022 had led to a great deal of psychological stress, both financially and medically, and this had led Chinese respondents to believe that they should not return to their pre-pandemic lifestyles in the future, as it was difficult to keep transmission rates low. However, the price would be high if the Zero-COVID policy continued. Respondents living in the Netherlands received information about COVID-19 from multiple sources, which allowed them to compare multiple sources to get their own answers. Moreover, the Netherlands has promoted coexistence with the virus since the beginning of the pandemic, so that Dutch respondents could easily come into contact with people infected with the virus, which led to Dutch respondents not considering COVID-19 to be a serious virus. The Dutch government places more emphasis on the obligation of each individual to manage his or her own health than the Chinese government, so Dutch respondents are more inclined to protect themselves with regard to restrictive measures. The continued presence of infected people in the Netherlands allows for the easy verification of the effectiveness of the vaccine, so Dutch respondents are confident in the vaccine. Regarding the impact on their lives, Dutch respondents are more interested in the economic impact, such as lower income, and they also want to return quickly to their life before the pandemic.

Theoretical contribution

This study shows that there are a number of factors that influence the process of sensemaking, and that these things are in a stepwise fashion. The findings show that people coming from the same cultural background but living in different countries have different sensemaking processes for the same things. Data from the interviews show that people's sensemaking of COVID-19 is influenced by the source of information and perceptions about COVID-19. This study makes three theoretical contributions to the study of people's sensemaking.

Firstly, the findings suggest the relevance of sensemaking theory in this study. During the interviews, each of the underlying meaning construction needs could be identified in

different variations and subtle ways. The richness of sensemaking theory allows for predicting the development of future relationships. The basic idea behind sensemaking theory is that sensemaking is an ongoing process that primarily involves how people pay attention to events, what these events mean to people, and how the meanings that people co-create about these events influence current and future behaviour (Weick et al., 2005). This study fills the gap in understanding the impact of national media coverage on people's sensemaking, thus enriching sensemaking theory. When an event is not portrayed consistently in the media in different countries, the perspective from which people approach the event will change (Kellner, 2016). Approaching things from different perspectives can generate different opinions about the meaning of the matter (Edwards, 2021). These opinions then can influence people's current and future behaviour on the matter. The information provided by the respondents in both countries reflects their different attitudes towards the virus when they first heard about COVID-19, and this proves that the construction of meaning is influenced by national media coverage.

Secondly, the results of the study show that there is uncertainty about the impact caused by COVID-19. Uncertainty management theory has also provided guidance for this study. Generally speaking, uncertainty management theory is constructed on the basis of uncertainty and its related concepts (Walker et al., 2003). In pandemic terms, personal uncertainty is a feeling of doubt and instability about oneself and one's environment, and it stems from one's uncertainty about oneself, which can affect one's cognition, emotions, behaviour and sense of self (Godinic et al., 2020). In this study, psychological and social aspects that are not mentioned in uncertainty management theory have been added. It is useful to examine what kind of social and psychological uncertainty individuals experience during a pandemic. The results of this study has shown that the interviewers were uncertain about when they would be able to resume socialising such as travelling and how to address the psychological effects of the pandemic on them.

Thirdly, this study examines the sensemaking of people regarding COVID-19, which in essence is a human activity. The study combines concepts from both social cognitive theory and planned behaviour theory, bringing the two theories together to view people's sensemaking in relation to COVID-19. Social cognitive theory suggests that human activities are determined by the external environment in which an individual lives and that the effects of the external environment become significant over time (Wang et al., 2019). In this study, the external environments of people living in the two countries were completely different. This may also explain why respondents in the two countries have different perceptions of COVID-19. The theory of planned behaviour suggests that human behaviour is the result of deliberate planning (Wayne, 2022). The results of this study show that people are in different environments and receive different information, which results in different planned behaviours and therefore different perspectives on the COVID-19 issue. The combination of the two theories can shed new light on how people are influenced by their external environment and therefore have different perspectives on an event.

Limitations

The first limitation of this study was the time interval covered by the study. Only snapshots from the pandemic period were studied in this study, so the data obtained cannot provide a complete picture. As the Chinese government abandoned its Zero-COVID policy in December 2022, there is a large number of infected individuals whose thoughts cannot be covered by this study at this time. The number of infections, deaths and hospitalisations in China has increased substantially, so the results of this study may be somewhat time-sensitive.

The second limitation was that there was no second coder who coded the interview transcriptions in this study. Because of the need to ensure the confidentiality of the study, the first researcher acted as the only coder to code the interview transcript throughout data analysis. Therefore, cross-checking coding between different coders was not conducted in this study. This may have generated inaccurate findings to some extent.

The third limitation was the sampling method employed in this study. The study recruits respondents from different WeChat groups to form a convenience sample. In this sample, a number of background characteristics in this sample were either over- or under-represented. Participants who came to the Netherlands from the very beginning of the pandemic, participants with an education level below high school, and participants who never received COVID-19 messages from China were underrepresented in this sample. This leads to the conclusion that the findings of this study apply mainly to people aged around 20-50 years with at least a high school education.

The fourth limitation was the relatively small sample size and the lack of previous research to facilitate a more detailed analysis of the variables in the research model. The main scope of this study focused on investigating the relationship between the variables in the research model. Other variables that may be present are not taken into account.

The fifth limitation is the method of data collection for this study. During the one-to-one online interviews, participants sometimes did not express all their thoughts because of time constraints. At the end of the interview, nine participants self-reported via WeChat messages that they wanted to further detail their answers in the interview and offered very exciting ideas.

Suggestions for future research

By the time this study began, the questions for the research model design had not been fully prepared, though the pandemic had been underway for some time. Future research on people's sensemaking about new things should therefore begin when they first appear. This will also lead to more complete findings.

In future studies, a second coder should be assigned to enhance the objectivity of coding. This will also give more credibility to the findings, although the confidentiality of the data may be compromised to a certain extent.

For sampling, more attention should be paid to the background and personal conditions of the people in the sample in future studies, so that the sample can be as representative of the population as possible.

For subsequent studies, it would be interesting to have a more comprehensive understanding of the relationships between variables in the research model to get a refined model. Previously existing research models can be used to enrich the research model by adding variables to it.

A final recommendation is that a variety of data collection methods could be employed in subsequent studies, such as questionnaires or focus groups, which may give researchers fascinating insight into how participants felt during the pandemic. Additional data collection methods employed may also allow participants to express their ideas in a timely manner.

Conclusion

The aim of this study is to examine how sensemaking differs between Chinese people living in China and Chinese people living in the Netherlands in relation to COVID-19. Based on the results of the study, there are six differences in sensemaking between people living in the two countries: the way they find information, their views on the severity of COVID-19, their views on government restrictions, their views on the COVID-19 vaccine, their views on the impact of the pandemic on their lives and their views on and attitudes towards the future. People living in China mainly received a single source, tended to treat COVID-19 as a serious disease, believed that quarantine restrictions were necessary, had little confidence in the vaccine, and believed that there should be a slow return to pre-pandemic lifestyles. People living in the Netherlands were mainly receptive to multiple sources, were more inclined to treat COVID-19 as an influenza virus, placed more emphasis on taking responsibility for their own health, and believed that they should return to their pre-pandemic lifestyles immediately.

This study suggests that individuals with the same cultural background may perceive the same item differently when living in different cultural circles. This may facilitate future research on how sensemaking differs between people of the same cultural background living in different regions.

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Appendix A

Interview guide

Interview guide

- Introduction
    - How interviewees are recruited
        - According to the research proposal, I will be conducting online interviews with at least 40 Chinese people. Of these, 20 Chinese people live in China and 20 Chinese people live in the Netherlands. I will recruit the interviewees mainly through online social media groups. Until then I will tell the person being asked that all answers are anonymous. For example, by posting recruitment messages in the Chinese restaurant WeChat group in Enschede, and by posting paid interviews in the international student group in UT. For example, can you take a question about the COVID-19 pandemic?

If you participate, you will receive 10 euros in cash or a gift of equivalent value. With regard to recruiting Chinese people living in China, I also recruit interviewees in restaurant WeChat groups or second-hand trade groups. Again, 10 euros in cash or a gift of equivalent value will be given.

- Introduce myself
  - I am studying Communication Science at the University of Twente in the Netherlands and I am currently pursuing my Master's degree. Living in the Netherlands gave me the opportunity to learn about different cultures and to research the topic of how people's perceptions of something are formed. This is one of the reasons for conducting this interview.
- Introduce topic
  - I describe below the focus of this study: to investigate people's experiences and perceptions during the COVID-19 pandemic, and how these have developed over time.
- Confidentiality
  - Any information that can be traced back to an individual, such as name, age, gender, etc., will be deleted and guaranteed not to be disclosed.
  - All recordings and personal information will be deleted after the recording has been converted into an anonymous transcript.
  - You can ask for the interview to end at any time during the interview, and if you are asked a question in the middle of the interview that you cannot or do not want to answer, you can refuse to answer it.
- Recording permission
  - I would like to record our interview in audio form. As we are currently meeting online, I am going to ask you if you agree to the recording. I will need to obtain your verbal permission to record. If you do, I will start recording now. I will explain to you in the next section about the confidentiality of the recording.
  - This interview will be recorded in audio form, so please be assured of the security of the data. All recordings will be deleted after being transcribed anonymously into a transcript.
- The nature of the interview
  - In the interview I would like you to express their thoughts and feelings as much as possible and I will ask follow-up questions on topics that interest me.
  - I will ask you some questions, but not questions that can be answered with a yes or no. I would be grateful if you could answer in great detail, about your experiences and feelings, as best you can, and give some examples.

        - Again, make sure you give me permission to record this interview and ask me if you have questions about the information I give.
- Question list

Please give as much detail as you can about your personal views and explain and elaborate why you think what you do, preferably with some examples to illustrate your views.

1. Can you remember how you felt and what you thought when you first heard about COVID-19?
    a. What caused you to feel and think that way?
2. How do you feel and think differently about COVID-19 now than you did when you first learned about the virus? What was the difference between your view of the virus then and now?
3. How serious do you think the disease caused by COVID-19 is?
    a. What are the short term effects and long term effects of COVID-19 infection?
    b. To what extent do you think it is a fatal disease?
    c. How does COVID-19 compare to other infectious diseases like the flu?
4. How scared are you of contracting COVID-19?
    a. Why do you feel this way?
    b. How easily do you think you could be infected with COVID-19?
    c. How worried are you that your family member is infected with COVID-19?
5. How has COVID-19 affected your life?
    a. Apart from the disease itself, how do you think being infected with COVID-19 will affect your life?
    b. Has your lifestyle changed as a result of the COVID-19 pandemic?
6. When do you expect the COVID-19 pandemic to be over?
    a. To what extent do you think people should go back to the way they lived before the COVID-19 pandemic?
7. Are we somehow able to completely eliminate the COVID-19 virus? If so, why do you think so?
8. What level of protection do you think the COVID-19 vaccine will provide for infections?
9. If you tested positive for COVID-19, how would you feel? Would you be very depressed?
10. How negative do you think COVID-19 would be for society and the well-being of people?
11. How far do you think wearing a mask, washing your hands and maintaining a social distance of 1.5 metres is effective in combating the spread of COVID-19?

12. To what extent do you think that the requirement of a negative PCR test to enter public places or travel on public transport will prevent the spread of COVID-19?
13. To what extent do you think that lockdown and quarantine and mass PCR testing are sufficient to control a COVID-19 pandemic?
14. What do you think is causing the new infections in China? Was it foreigners or goods coming from abroad?
15. What do you think is the most important cause of the new outbreak in China?

- Debriefing
    - The interview questions focused on how perceptions of the COVID-19 virus have developed over time, based on people living in China and the Netherlands, Chinese people.
    - From the beginning to the end of this research, all information is anonymous and does not trace back to any individual.
    - I would like to thank you very sincerely for participating in this interview and for your very meaningful answers. I am very happy to have completed this interview with you.
    - If you have any questions or suggestions about this research, please ask me now or send me an email later.
    - If you are interested in the findings, I will send you the findings of the research by email, before sending them I will check again and make sure that all the findings are anonymous.

Appendix B

Codebook

Table 2

Category: COVID-19 source of information

Code	Description
Information published by government	Participants receive information from the government.
Information published by social media	Participants receive information from social media.
Information published by experts	Participants receive information from professionals such as doctors and virologists
Information from outside China	Participants receive some information from outside China

Information released by organisations	Participants receive information from organisations such as the International Health Organisation
Talking to friends / colleagues / relatives	Participants receive information from talking to friends, colleagues and relatives in their own lives
Personal experiences	Information from participants' personal experiences
News from the internet	The participant receives information from the internet, which may be in the form of pictures, audio, etc.

Table 3

Category: attitude towards measures

Code	Description
Unavoidable measures	Participants said they could not avoid some measures because they were forced to
Do not like mandatory	Participants said dislike for some of the things they were forced to do, such as quarantine at home
Uncertainty about the effectiveness of the measure	Participants said doubts about the effectiveness of the measures, e.g. whether they could reduce the rate of transmission of the virus
Measures are costly	Participants said that the cost of the measure was significant, e.g. participants lost their financial resources
Measures cause deaths	Participants said that the measure led to people dying, e.g. not being allowed to go to hospital
Measures are not as good as self-protection	Participants said that personal self-protection was more important than measures
Measures protect lives	Participants said that the measure protected people's lives and that the measure was good
Measures have led to economic decline	Participants said that the measures have

	caused a downturn in the economy and have affected people's income
Measures are worse than viruses	Participants said that measures are worse than viruses, e.g. some measures can kill people directly, but viruses do not necessarily kill people
Measures inconvenience people	Participants said that the measures have made people's lives more inconvenient, such as the need to show a negative PCR certificate to enter public places

Table 4

Category: problem solving

Code	Description
Positioning problems	Identifying the problem when participants encounter it, e.g. determining whether they have a financial or psychological problem
Finding the essence of the problem	Once participants have identified the problem they are experiencing, they find out why it is happening
Building a plan	When faced with a problem, participants make a plan to solve it, for example by making a spending plan to save money
Find someone to talk to	When confronted with a problem, the participant seeks out the person in charge of the organisation or government to discuss the solution to the problem
Complaint	In the case of a complaint, the participant complains about the organisation or the government
Call the police/prosecute	In the event of unfair treatment, participants will report the problem to the police or file a charge

Table 5

Category: adaption

Code	Description
Stop changing jobs	The participant stops changing jobs, e.g. stops posting resumes, looks for a better paying job, or gives up the current job to do something else
Stop unnecessary spending	The participant stops making unnecessary expenses, such as buying unnecessary items
Stop starting a business	The participant stops starting a business, such as opening a new restaurant or a new shop
Get a second job/ financial resources	The participant looks for a second job and a second source of income, e.g. a part-time job after work
Take out insurance	Participants take out more insurance to cover possible crises, such as life insurance and medical insurance, both for family members and for themselves
Store food and water	Participants store more food and drinking water to protect themselves from the possible effects of restrictions, such as being unable to buy drinking water and food and vegetables
Store medicines and masks	Participants store more medication and masks in case the measures may result in the inability to purchase these items
New working schedule	Participants need to start setting up more schedules to cope with online work or online courses that may come or have come, as these schedules are often different from the normal work schedule
Changing lifestyles	Participants start to change their lifestyles, for example by switching from private car travel to bus travel to save money
Online courses/office	Participants need to adapt to the new schedules brought about by online working and online courses

Table 6

Category: feel helpless

Code	Description
Unable to go out shopping	Participants said that they were confined to their homes or quarantine camps because of the restrictions and were unable to go out to buy household items and medicines for themselves and their families
Unable to go to hospital	Participants said that they were kept at home or in camps because of the restrictions and were unable to go to hospital for treatment
Pets may be killed	Participants said that if they contracted the virus, or if their neighbours contracted the virus, they would be forcibly sent to a quarantine camp and their family pets would be killed
Worried about going to quarantine camps	Participants said they were worried about going to a quarantine camp because the elderly members of the family could not adapt to life in a quarantine camp, but they were forced to go
Learning of someone else's misfortune	Participant said he felt helpless when he heard that some people had lost their lives because of the restrictions or because they had contracted the virus
Having little hope for the future	Participant stated that they felt little hope for the future based on the current restrictions and the virus

Table 7

Category: feel scared

Code	Description
Vaccine side effects	The participant said that the side effects of the vaccine are not known at this time and could potentially lead to very serious side effects.
COVID-19 long term effect	The participant said he was concerned about the after-effects of the virus and the

	long-term effects, as these cannot be avoided
COVID-19 symptoms leading to death	Participants said they were concerned about some of the symptoms of the virus in their families, such as reduced blood oxygen that could lead to death.
Loss of job/source of income	Participants said that they would lose their job or source of income due to the pandemic, for example if the company they worked for went bankrupt
Uncertain environment	Participants indicated that they did not know much about the virus at this time, nor did they know much about future restrictions, so they were worried or fearful about future circumstances
Inability to graduate on time	Participants said that the pandemic has delayed their graduation and that not graduating on time would mean extra expenses
The possibility of being imprisoned	Participants said that if they did not go to the quarantine camps or take nucleic acid tests as required, they would be arrested and then put in prison

Table 8

Category: cultural differences

Code	Description
Collectivism	Collectivism is more concerned with the interests of the group and relatively ignores the interests of the individual
Individualism	Individualism is more concerned with the interests of the individual at the relative neglect of the collective
Historical reasons	The history of different regions with different cultures can also be different, resulting in potentially different ways of responding to problems. In agrarian societies, for example, more experience is passed on from elders, but in maritime civilisations more life is based on negotiation

Table 9
Category: government differences

Code	Description
Government responsibilities	Participants said that the responsibilities of the Chinese and Dutch governments are different, in China there is a general perception that the government is responsible for many things, but in the Netherlands the participants see the government as an organiser and that ultimately policies need to be implemented by everyone working together
Government structures	The structure of government in China and the Netherlands is different, for example in the Netherlands several political parties have to work together to formulate policies
Government powers	The powers of the Chinese and Dutch governments are also different, as the Dutch government has very limited powers compared to China
Government size	The size of the government is also different, and according to the participants the Dutch government is not as large as in China

Table 10
Category: psychological problems

Code	Description
Feeling melancholy	Participants reported that they were sad during the pandemic, e.g. due to stressful life situations
Feeling irritable	Participants reported that they were easily irritable during the pandemic, possibly due to lifestyle changes
Experiencing insomnia	Participants reported that they experienced insomnia during the pandemic because they had to worry about things in their lives, such as whether their income or schooling would be affected

Depression	Participants reported that they felt very unhappy and depressed during the pandemic
Experiencing high levels of psychological stress	Participants reported that they were under a lot of psychological stress during the pandemic, sometimes for no apparent reason
Worried about the future	Participants reported that they were worried about the future
Unable to continue working	Participants reported that they were not able to continue working because of the restrictions imposed by the pandemic
Unable to continue studying	Participants reported that they were unable to continue their studies because of the restrictions imposed during the pandemic

Table 11

Category: lack of money

Code	Description
Having no income	Participants indicated that they had lost their financial resources for a period of time due to the pandemic
Still need to pay back loans	Participants indicated that they also had to pay arrears during the pandemic, such as student loans or home loans
Unable to pay bills	Participants reported that they were unable to pay their bills for a period of time during the pandemic because their income was reduced
Spent savings	Participants reported that they spent all their savings during the pandemic
Have gone bankrupt	Participants reported that they closed their restaurant or business during the pandemic
Have lost job	Participants indicated that they lost their job during the pandemic

Table 12

Category: social pressure

Code	Description
Feelings of guilt	Participants reported that they felt guilty if they lost friends, colleagues or family members because they had been infected, were at risk of being infected
Privacy exposed	Participants reported that when they were infected or potentially infected, various information about them, including their name, age, and address, was revealed
Condemned by others	Participants reported that they were condemned by others for passing the virus to others without knowing they were infected
Cyber violence	Participants reported experiencing online violence after their privacy was exposed
Unable to go and see friends	Participants reported that because they were infected, their friends and colleagues did not see them for fear of being infected, even after they had recovered
Loss of job	Participants reported that they lost their jobs once they had the virus
Discriminated by others	Participants said that once they had the virus, they were treated differently and even discriminated against by others

Table 13

Category: cost of measures

Code	Description
The cost of people being quarantined	Participants said that the cost of the quarantine measures was huge, for example people were quarantined so they could not have any economic activity
Economic costs	Participants said that the restrictions caused

	significant financial costs, such as the need to employ people to keep the quarantine camps running
People losing confidence	Participants said that they lost confidence in the measures because they did not know if they were effective
Cost of death	Participants said that the measures have resulted in many people losing their lives, for example through lack of access to timely treatment
Cost of medical equipment	Participants said that the measures have resulted in a lot of wasted medical equipment, such as many ventilators being wasted
Cost of labour	Participants said that the measures resulted in a lot of wasted labour costs, as many people were involved in maintaining the restrictions, incurring significant expenses

Table 14
Category: attitude towards the future

Code	Description
Back to life before the pandemic	Participants said that in the future life could go back to the way it was before the pandemic
Cancellation measures	Participants said that the current restrictions should be removed
Add measures	Participants said that the current restrictions are not enough
Reduction in mortality	Participants said that mortality from the virus is now decreasing
Mortality rate increases	Participants said that mortality from the virus is increasing in older people or people with underlying medical conditions
Virus mutates again	Participants indicated that the virus may continue to mutate in the future
New virus emerges	Participants indicated that other viruses may emerge in the future, not just COVID-19

Hybrid office	Participants indicated that home working and workplace working is a trend for the future
Economic recession	Participants said that the economy will experience a recession after the pandemic ends
The future is uncertain	Participants indicated that the future after the pandemic is over is still uncertain

Table 15

Category: other reasons to influence sensemaking

Code	Description
Personal self-confidence affects sensemaking	Some participants' own views influenced sensemaking
sensemaking is under pressure from family	sensemaking is influenced by pressure from family, e.g. people in the family do not believe in the new virus
Uncaring COVID-19 attitudes affect sensemaking	Some participants don't care about COVID-19, so they don't think about sensemaking either
Cognitive dissonance affects sensemaking	Some people's perceptions of the virus are disordered, so they have an impact on sensemaking
Social identity affects sensemaking	People's role in society can affect their sensemaking about the virus, e.g. someone who works in a company may have a different sensemaking about the virus to someone who runs their own business
Personalities influence sensemaking	Personality can influence sensemaking
Personal experience influences sensemaking	Personal experience affects the sensemaking of the virus
Educational experience affects sensemaking	Personal education can affect sensemaking
Personal social circle influences sensemaking	The social circle around an individual can affect sensemaking
region of residence affects sensemaking	Where people live affects their sensemaking